

A TOGNUM GROUP BRAND

ENGINEER'S GUIDEBOOK

A COMPLETE PRODUCT LISTING



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DS40D6S

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DP27D6S

DP35D6S

DP40D6S

DP45D6S

DP51D6S

DP80D6S

DP90D6S

DP111D6S

DP135D6S

// Generator Sets - Diesel Prime (continued)

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DP210D6S
DP230D6S
DP250D6S
DP275D6S
DP325D6S
DP365D6S
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DP500D6S
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680-XC6DT2-Prime
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R5 Five (5) Year / 3000 Hour Comprehensive Extended Standby Limited Warranty

R5 Ten (10) Year / 3000 Hour Major Component Extended Standby Limited Warranty

R5 Two (2) Year Basic ATS Standby Limited Warranty

R5 Five (5) Year Basic Extended ATS Standby Limited Warranty

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// Version History

Engineer's Guidebook Version History

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Overview

The Engineer's Guidebook is a collection of product specification sheets, component data, and warranty information for the MTU Onsite Energy portfolio of products and accessories. It is available in electronic or hardcopy format and can be delivered in a printed hardcopy from MTU Onsite Energy, electronically on flash drive or CD, or as a download from the MTU Business Portal or public website.

Ordering in Hardcopy, Flash Drive, or CD from MTU Onsite Energy

On the MTU Business Portal, access the eVantage store by navigating to *Home Page > MTU OED Information*. In the *Tools* column, select *eVantage* and then the *Store* tab. You will be required to log in. In *Parts Entry*, you can order the Engineer's Guidebook, like you would any other part, by using the following part numbers:

Part Number	Description	Price (USD)*
100686	Engineer's Guidebook - Color	\$75.00
100687	Engineer's Guidebook - Black and White	\$25.00
100688	Engineer's Guidebook - 2 GB Flash Drive	\$15.00
105192	Engineer's Guidebook - CD	\$15.00

* Prices do not include applicable shipping fees. The cost of the Engineer's Guidebook is eligible for 100% Co-op reimbursement.

For any questions regarding the Engineer's Guidebook, please contact your MTU Onsite Energy Account Manager.

Downloading an Electronic Version from the MTU Business Portal or Websites


For your convenience, the Engineer's Guidebook can be downloaded from the following areas:

- General Public Website (www.mtuonsiteenergy.com)
- MTU Business Portal (<http://partner.mtu-online.com/irj/portal>)


There is no fee for downloading the document directly from these locations. Please refer to the directions that follow for instruction.

To download from the General Public Website www.mtuonsiteenergy.com

1. Access the website at <http://www.mtuonsiteenergy.com>.
2. Navigate to *PRODUCTS > Diesel Generator Sets*
3. Click **60 Hz**.

4. Under *Power Output*, click the desired power range.
5. At the bottom under *Downloads*, click **Engineers Guidebook [PDF]**.
6. When the document is displayed, save the document to your system by clicking  in the toolbar. The **Save As** dialog box is displayed.
7. Select the location where you wish to save the document.
8. Click **Save**. The document will be saved in your chosen location.

To download from the MTU Business Portal (for MTU Onsite Energy Distributors only)

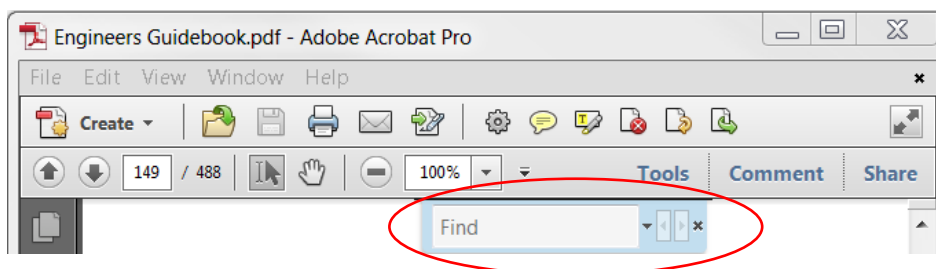
1. Access the MTU Business Portal at <http://partner.mtu-online.com/irj/portal>.
2. Navigate to *MTU OED Information*.
3. In the *Tools* column, select *Engineer's Guidebook*.
4. Click the **Engineers Guidebook.pdf** link. The guidebook will open.
5. When the document is displayed, save the document to your system by clicking  in the toolbar. The **Save A Copy** dialog box is displayed.
6. In the **Save In** field, select the location where you wish to save the document.
7. Click **Save**. The document will be saved in the chosen location.

Searching the Engineer's Guidebook (Electronic Format Only)

The electronic version of the Engineer's Guidebook is searchable. Whether on a flash drive, CD, or downloaded from the MTU Business Portal or public website, as a default, the Engineer's Guidebook opens in Adobe Acrobat Reader.

To search the Engineer's Guidebook:

1. On the toolbar menu, select Edit then Find, or click Ctl + F. A box similar to the following will display:



2. Enter the search criteria in the box, and press Enter to start the document search.

Tip: To find multiple instances within the file, select the **Advanced Search** option from the **Edit** menu.

Keeping the Guidebook Up-To-Date in Between Releases

Documents contained within the Engineer's Guidebook are updated intermittently between releases. If you ordered a print version of the Engineer's Guidebook from MTU Onsite Energy or printed a copy yourself, please refer to the following documents to stay informed of changes:

1. **Specification Sheet Change List** is located on the MTU Onsite Energy Business Portal: *Home Page > MTU OED Information*. Under *Technical Data*, select *Technical Spec Sheets – 60 Hz* or *Technical Spec Sheets – 50 Hz*.
2. **Engineer's Guidebook Version History** is located at the end of the latest Engineer's Guidebook.
3. **Additional Tools** are offered with the printed version of the Engineer's Guidebook. They are also available electronically on the Business Portal by navigating to *MTU OED Information > Tools*.
 - a. MTU Onsite Energy Product Brochure
 - b. AMP Chart
 - c. CD Label

This information can be used as a guideline to keep already printed guidebooks up-to-date.

Printing

Printing the Electronic Version of the Engineer's Guidebook

Depending on the length of the document included in the Engineer's Guidebook, MTU Onsite Energy prints on various sized sheets of paper which are *typically* as follows:

- For documents that are 1-2 pages: 8.5 x 11" paper (double-sided as required)
- For documents that are 3 pages or over: 11x17" (double-sided, booklet style)

If you wish to have the Engineer's Guidebook in the format that MTU Onsite Energy prints it, you can place an order with MTU Onsite Energy (refer to [Ordering in Hardcopy, Flash Drive, or CD from MTU Onsite Energy](#)), or you can print as desired at your office.

You can also print selected pages of the Engineer's Guidebook by clicking **File** and then **Print**. Follow the instructions in the dialog box to choose the pages.

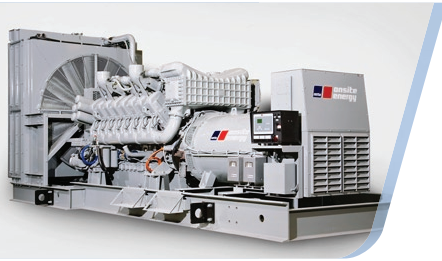
Printing the Engineer's Guidebook CD Label

If you wish to download the Engineer's Guidebook from any one of the online locations and save onto a CD, MTU Onsite Energy has provided a template for labeling the CD. It is located on the MTU Business Portal. To print the labels from the template provided, Avery 5931/8931 CD Labels are required.

Downloading and printing the CD Label from the MTU Business Portal

1. Access the MTU Business Portal at <http://partner.mtu-online.com/irj/portal>.
2. Navigate to MTU OED Information.
3. In the Tools column, select Engineer's Guidebook.
4. Click the CD Label MTU Onsite Energy link. The template will download.
5. Once the template is downloaded, you can print it on Avery 5931/8931 CD Labels by following the instructions included with the labels.

ONE OF THE NEWEST NAMES IN POWER GENERATION IS ALSO ONE OF THE OLDEST



The name MTU Onsite Energy may be new to you, but behind this name is a global manufacturing organization with more than 100 years of innovative engine manufacturing and 60 years of power generation packaging. Today, the Tognum subsidiary MTU Onsite Energy Corporation develops, produces and sells distributed power generation systems based on diesel and gas engines.

MTU Onsite Energy provides a comprehensive power generation product portfolio and unmatched customer service. Our network of more than 300 North American service locations means you're never far from an authorized distributor with a knowledgeable sales staff and EGSA-certified technicians to answer all your power needs.

COMPLETE POWER GENERATION SOLUTIONS

Power generation systems from MTU Onsite Energy are ideal for emergency standby and prime power in the most demanding commercial and industrial applications. As a single-source supplier, MTU Onsite Energy provides generator sets, automatic transfer switches, digital paralleling switchgear, fuel tanks and enclosures for complete onsite power solutions. With engines of the Tognum brand MTU, MTU Onsite Energy delivers the benefits of vertical integration to its power generation customers.

MEETING POWER NEEDS

Backed by more than a century of technological innovation in engines and power generation components, MTU Onsite Energy is a global manufacturing organization focused on meeting customers' distributed

energy needs. With engines and power generation systems manufactured around the world, MTU Onsite Energy has a distinct advantage in being able to deliver power systems on time and on budget to any location. We have just one goal in mind: to deliver the best onsite power solution whenever and wherever you need it.

PRODUCTS FROM MTU ONSITE ENERGY

- // Diesel-powered generator sets 30 kW to 3,250 kW
- // Gas-powered generator sets 30 kW to 400 kW
- // Automatic transfer switches 30 amps to 4,000 amps
- // Paralleling switchgear and digital master control systems

Features

- // 50 Hz and 60 Hz diesel-engine systems
- // Digital engine controls for superior performance
- // Advanced monitoring and communications technology
- // Best-in-class reliability and availability
- // One-step rated load acceptance per NFPA 110
- // Industry-leading average load factor
- // UL2200 listing available on most models
- // IBC seismic certification and OSHPD approval available

MTU Onsite Energy history

1909

Karl and Wilhelm Maybach form Maybach Engines in Germany to power Zeppelin airships, eventually producing automobiles and heavy duty engines.

1960s

Maybach merges with the off-highway divisions of Daimler-Benz and MAN to form MTU, originally an acronym for "Motor and Turbine Union."

1994

MTU and Detroit Diesel form a partnership to develop the Series 2000 and Series 4000 engine families.

2000

The off-highway operations of Detroit Diesel are renamed as MTU Detroit Diesel.

2006

Tognum is formed as the holding company for the MTU group of companies including MTU Detroit Diesel. Tognum is headquartered in Friedrichshafen, Germany.

2007

Tognum acquires Katolight Corporation, a generator set manufacturer and packager founded in 1952 and based in Mankato, Minnesota.

2008

MTU Onsite Energy is formed as the global power generation brand for Tognum, and Katolight Corporation is renamed MTU Onsite Energy Corporation.

2011

Tognum America is the new name for MTU Detroit Diesel. The Tognum subsidiary sells MTU and MTU Onsite Energy products in North and Latin America and provides technical support.

2011

Engine Holding GmbH, a joint venture between Daimler AG and Rolls-Royce Group plc, has a majority holding in Tognum.



Quality Policy

MTU Onsite Energy provides superior products and service in power generation through continual system improvement and employee development, in order to meet or exceed customer requirements and expectations.

Mission Statement

The basic mission of MTU Onsite Energy is to provide, at an optimal growth and profit, power generation products and services to our customers around the world. This will be accomplished by emphasizing Competitive prices, Superior quality, Service and support to customers, employees and communities.

Incumbent Model Number Definition

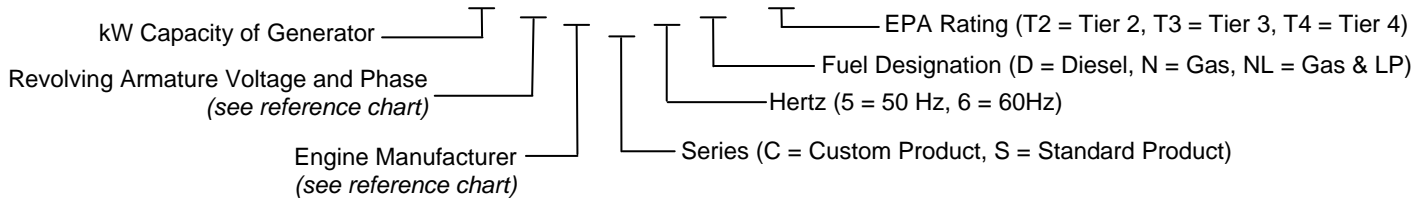


Effective on systems created prior to July, 2009

This model number nomenclature should be used when referencing engine-generator sets designed prior to July, 2009.

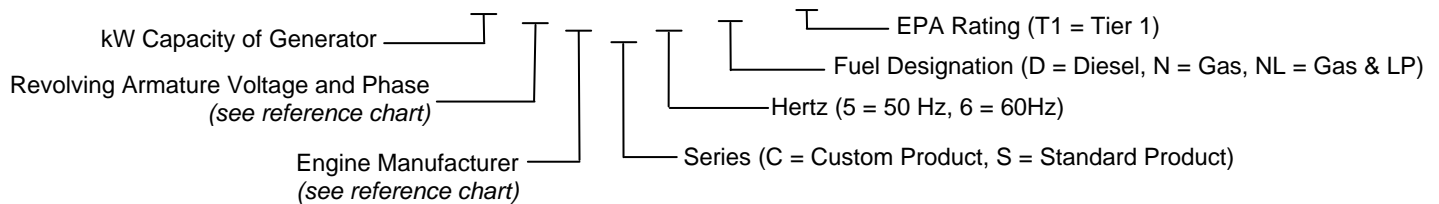
EXAMPLE 1: DIESEL UNIT

60 * X C 6 D T2



EXAMPLE 2: GAS UNIT

60 * G C 6 N L T1



REFERENCE CHARTS

Revolving Armature Voltages and Phases:

A	120 volt, 1 phase, 2 wire
B	480/277 volt, 1 phase
C	480/240 volt, 1 phase (High Zig Zag)
D	240/120 volt, 1 phase, 4 wire (Dedicated)
G	240/120 volt, 1 phase, 12 wire (Zig Zag) (Double Delta)
H	2,400/1,386 volt, 3 phase (WYE)
I	127/220 volt, 3 phase, 12 w (60 Hz)
J	240/120 volt, 3 phase (High Delta)
K	3,300/1,905 volt, 3 phase (WYE)
L	12,470/7,200 volt, 3 phase (WYE)
L	13,200/7,621 volt, 3 phase (WYE)
L	13,800/7,967 volt, 3 phase (WYE)
M	6,600/3,811 volt, 3 phase (WYE)
N	600/346 volt, 3 phase (WYE)
P	208/120 volt, 3 phase (PAR WYE)
R	480/277 volt, 3 phase (SER WYE)
S	4,160/2,400 volt, 3 phase (WYE)
U	7,200/4,147 volt, 3 phase (WYE)
T	11,000/6,351 volt, 3 phase (WYE)
Q	2,400/1,386 volt, 3 phase (Delta)
X or *	Multi-voltage, multi-phase, switchable, or special voltage

Engine Manufacturers:

D	Doosan
G	General Motors
J	John Deere
V	Volvo
X	MTU (incl. Detroit Diesel)

Materials and specifications subject to change without notice.

MTU Onsite Energy Corporation / 100 Power Drive / Mankato, MN 56001 / USA / A Tognum Group Company

www.mtuonsiteenergy.com

Record of Updates:

01/13/2010: The following was updated in the Available Voltage L verbiage:

From: L.....12,200/7,621 volt, 3 phase (WYE)
To: L.....13,200/7,621 volt, 3 phase (WYE)

From: L.....13,800 / 7,976 volt - 3 phase (WYE)
To: L.....13,800 / 7,967 volt - 3 phase (WYE)

08/24/2011: "I" was added as a new voltage identifier as seen below:

I..... 127/220 volt, 3 phase, 12 w (60 Hz)

02/25/2013: Added X to the Multi-voltage, multi-phase, switchable, or special voltage category.

Product Standardization

Model Number Definition

Effective on systems created after July, 2009



This model number nomenclature should be used when referencing engine-generator sets designed after July, 2009.

Example 1: Custom 35 kW - 60 Hz engine generator set run by diesel fuel and cooled by Air Charge-Air Cooling

Type	Application	Performance	Fuel Type	Frequency	Project Type	Available Voltages	Cooling Variants
D	S	35	D	6	C	-	A

Example 2: Standard 735 kW - 60 Hz engine generator set run by diesel fuel and cooled by Water Charge-Air Cooling

Type	Application	Performance	Fuel Type	Frequency	Project Type	Available Voltages	Cooling Variants
D	S	735	D	6	S	-	W

Example 3: Standard 130 kW - 60 Hz engine generator set run by natural gas and liquid propane and turbocharged

Type	Application	Performance	Fuel Type	Frequency	Project Type	Available Voltages	Cooling Variants
G	S	130	V	6	S	-	T

Reference Chart

Type	D = Diesel Generator Set G = Gas Generator Set
Application	P = Prime S = Standby B = Baseload (Continuous)
Performance	5 digits. Rated power or power band. If less than 5 digits, it will be preceded with zeros. For 50 Hz units, this value will reflect kVA. For 60 Hz units, this value will reflect kW. Example: If the unit is 500 kW, the value will be 00500. If the unit is 880 kVA, the value will be 00880.
Fuel Type	D = Diesel L = Liquid Propane N = Natural Gas V = Various Fuels (i.e. dual fuel) - = Multiple Fuels offered (such as natural gas, propane, dual fuel)
Frequency	5 = 50 Hz 6 = 60 Hz
Project Type	C = Custom Product S = Standard Product

Available Voltages	Available Voltages. See list below.
	Note: A dash (–) is used to indicate various voltages.
	C = 480 / 240 volt - 1 phase (High Zig Zag) D = 240 / 120 volt - 1 phase, 4 wire (Dedicated) E = 415 / 240 volt - 3 phase (WYE) F = 400 / 230 volt - 3 phase G = 240 / 120 volt - 1 phase, 12 wire (Zig Zag) (Double Delta) H = 2,400 / 1,386 volt - 3 phase (WYE) I = 127/220 volt, 3 phase, 12 w (60 Hz)
	J = 240 / 120 volt - 3 phase (High Delta) K = 3,300 / 1,905 volt - 3 phase (WYE) L = 12,470 / 7,200 volt - 3 phase (WYE) 13,200 / 7,621 volt - 3 phase (WYE) 13,800 / 7,967 volt - 3 phase (WYE) M = 6,600 / 3,811 volt - 3 phase (WYE) N = 600 / 346 volt - 3 phase (WYE) P = 208 / 120 volt - 3 phase (PAR WYE) Q = 2,400 / 1,386 volt - 3 phase (Delta) R = 480 / 277 volt - 3 phase (SER WYE) S = 4,160 / 2,400 volt - 3 phase (WYE) T = 11,000 / 6,351 volt - 3 phase (WYE) U = 7,200 / 4,147 volt - 3 phase (WYE) V = 380 / 220 volt - 3 phase W = 440 / 254 volt - 3 phase (WYE) X = Multi-voltage, multi-phase, switchable, or special voltage
Cooling Variants (where applicable)	A = Air Charge Air Cooling W = Water Charge Air Cooling N = Naturally Aspirated T = Turbocharged Only

Record of Updates:

01/13/2010: The following was updated in the Available Voltage L verbiage:

From: L = 13,800 / 7,976 volt - 3 phase (WYE)

To: L = 13,800 / 7,967 volt - 3 phase (WYE)

08/24/2011: "I" was added as a new voltage identifier as seen below:

I = 127/220 volt, 3 phase, 12 w (60 Hz)

"X" replaced the * (asterisk) to identify multi-voltage, multi-phase, switchable, or special voltage as seen below:

X = Multi-voltage, multi-phase, switchable, or special voltage

06/01/2012: The following entry was added to the Fuel Type verbiage:

- = Multiple Fuels offered (such as natural gas, propane, dual fuel)

08/09/2012: Grammar update for Cooling Variants: Changed "Turbo Charged" to "Turbocharged"

02/25/2013: Added **B** = Baseload (Continuous) to **Application**



MTU ONSITE ENERGY TRAINING, PARTS & SERVICE

MTU Onsite Energy offers a variety of technical training and certification courses. Factory training includes comprehensive courses ranging from Basic Power Generation Systems to Advanced Power Generation. MTU Onsite Energy also offers custom training to fit your needs. Our trainers have decades of experience in power generation. MTU Onsite Energy offers Sales, SERVICE I, and SERVICE II courses to our partners which create a competitive advantage in today's changing marketplace.

MTU Onsite Energy's reputation for a quality parts and service support is admired throughout the distributed power industry. MTU Onsite Energy maintains a world wide network of experienced distributor and service centers. Knowledgeable training, parts, and service resources support the continual operation of MTU Onsite Energy stand by and prime engine generator sets.

A Tognum Group Company

MTU Onsite Energy / 100 Power Drive / Mankato / Minnesota 56001
Phone 507 625 7973 / Fax 507 625 2968 / Toll Free 800 325 5450

www.mtuonsiteenergy.com



TRAINING BY MTU ONSITE ENERGY

Reasons to Attend

- // Increase knowledge of MTU Onsite Energy products
- // Gain a competitive edge
- // Reduce cost/time on a job site
- // Industry updates keep you current
- // MTU Onsite Energy certification
- // Strategies for preventing problems
- // Learn tools and solutions for troubleshooting

Who Should Attend SERVICE I

- // New and experienced technicians
- // Sales staff
- // Spec writers
- // Engineering support staff

Who Should Attend SERVICE II

- // Staff who have completed SERVICE I
- // Experienced technicians
- // Experienced engineering support staff
- // Technicians seeking certification

Who Should Attend MTU Onsite Energy Sales Class

- // Staff members who are new to MTU Onsite Energy products, services, or the power generation industry
- // Those who desire a creative selling edge
- // Those wanting to update their product knowledge

What You Can Expect To Gain

- // Product, service, and sales knowledge
- // Maximize sales opportunities
- // Competitive sales edge

Training courses are only available to MTU Onsite Energy partners. Visit the MTU Business Portal at <http://partner.mtu-online.com> to view upcoming training dates and course outlines for MTU Onsite Energy Sales, SERVICE I, and SERVICE II.

MTU Onsite Energy can deliver training on site to save you time and money. If you require custom training for your staff, please contact our training department for a quote.

Contact details:

E-mail: producttraining@tognum.com

Phone: 734-561-2085

PARTS/SERVICE

MTU Onsite Energy strives to be your preferred source for quality parts through understanding customer needs and building strong partner relationships. We support all of your parts needs with genuine OEM replacement parts. We guarantee same day shipment on stock parts orders and if you have an after hours emergency our parts service team will work to provide timely solutions.

24 hours a day, 365 days a year

MTU Onsite Energy partners and service centers offer a variety of service agreements that offer preventive maintenance solutions throughout the year. Members of MTU Onsite Energy's emergency parts and service response team are available 24 hours a day, 365 days a year.



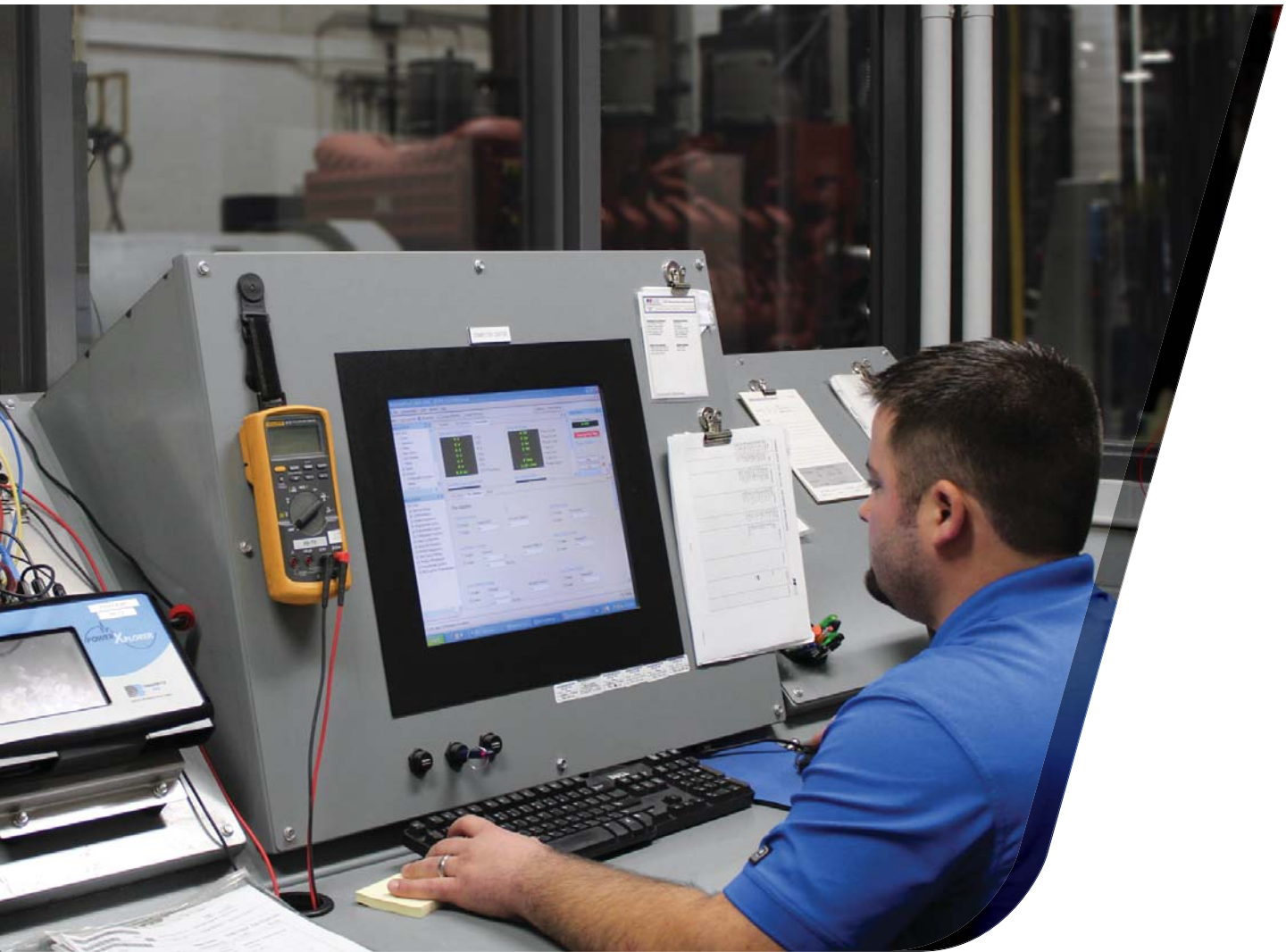
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MTU Onsite Energy / 100 Power Drive / Mankato / Minnesota 56001
Phone 507 625 7973 / Fax 507 625 2968 / Toll Free 800 325 5450

www.mtuonsiteenergy.com

05-13





PERFORMANCE ASSURANCE CERTIFICATION



PROTOTYPE TEST PROCEDURES AND METHODS

MTU Onsite Energy has been producing superior engine-generator sets for more than six decades. We understand the importance of reliable cost-effective products, and have developed industry-leading test procedures to ensure we exceed this criteria. Our testing program confirms that our customers will receive products of the highest quality.

The Performance Assurance Certification provided by MTU Onsite Energy certifies that every engine-generator set undergoes rigorous prototype testing including the following:

Prototype test procedures

// Rated Load (NFPA 110)

MTU Onsite Energy certifies that all engine-generator set models will produce the name-plated load within the design tolerance of the generator set.

// Extended-run Testing

MTU Onsite Energy certifies that all engine-generator set prototypes have been subjected to extended run-time testing.

// Transient Response Analysis (ISO 8528-5)

MTU Onsite Energy certifies that all new generator set models have undergone transient response analysis per ISO 8528-5.

// Torsional Analysis

MTU Onsite Energy certifies that all engine-generator-set models have undergone torsional stress analysis.

// Engine Cooling System

MTU Onsite Energy certifies that all generator set models will cool sufficiently within the ambient design conditions per each model.

// Anticipatory Alarms and Shutdowns

MTU Onsite Energy certifies that the pre-alarms and alarms function appropriately to protect the engine-generator set from any foreseen unnecessary failures.

// Vibrational Analysis (ISO 8528-9)

MTU Onsite Energy certifies that all new engine-generator-set models have undergone vibration analysis to ensure that each engine-generator coupling is balanced and that there is no destructive resonant vibration.

// Noise Analysis (ISO 8528-10)

MTU Onsite Energy certifies that all engine-generator sets undergo airborne noise analysis using the enveloping surface method.

Test standards

MTU Onsite Energy engine-generator sets are compliant with many different codes and standards. MTU Onsite Energy's validation philosophy and performance are regularly reviewed to ensure continuity with these codes and standards: *UL2200, CSA, EPA, NFPA 99—Health Care Facilities, NFPA 70—National Electrical Code, NFPA 110—Standard for Emergency and Standby Power Systems, Department of Labor and Industry, NEMA MG 1—Motors and Generators, and MIL-STD-705-c.*

FACTORY ACCEPTANCE TESTING PROCEDURES

MTU Onsite Energy's factory testing is performed with the same extreme diligence and attention to detail that is given to the prototype testing process. Every engine-generator set receives a complete factory acceptance test that certifies and ensures that the set will function in accordance to every specific application.

Test metering will have an accuracy of 1.3% or better. This metering is calibrated a minimum of once per year and is directly traceable to the Bureau of Standards.

Factory acceptance testing procedures:

- // **Insulation Resistance Inspection** (301.1c)*
- // **High Potential Test** (302.1b)*
- // **Alternator Overspeed** (1 min.)*
- // **Engine Inspection**
- // **Generator Inspection**
- // **Resistances Inspection** (401.1b)
 - Exciter Field Stator
 - Alternator Armatures
- // **Mounting and Coupling Inspection**
- // **Engine Fuel Oil System Inspection**
- // **Engine Lube Oil System Inspection**
- // **Engine Cooling System Inspection**
- // **DC Charging System Inspection**
- // **Circuit Breaker Inspection**
- // **Anticipatory Alarms and Shutdowns Inspection**
(505.2b, 515.1b, 515.2b)
- // **Optional Equipment Inspection** (513.2a)
- // **Load Test Inspection**
 - Full Name-plate Rated Load
 - Regulator Range Test (511.1d)
 - No Load Inspection
 - MAX Load @ 1.0 P.F. (640.1d)
 - MAX Load @ 0.8 P.F.
 - Block Loads @ 0-25%, 0-50%, 0-75%, 0-100%
- // **Phase Balance and Sequence Inspection**
(507.1d, 508.1d, 516.1a)

* Performed by Alternator OEM

Rating Tolerance

MTU Onsite Energy certifies that all generator set models will produce the name-plated load at the standard conditions within the design tolerance (see table below) of the generator set.

Diesel Genset Product Family	Rating Tolerance
DS30D6S – DS200D6S DP27DS – DP180D6S	+/- 5%
DS230D6S – DS600DD6 DP210D6S – DP550D6S	+/- 2%
650-XC6DT2 – 3250-XC6DT2 615-XC6DT2 – 2800-XC6DT2	+/- 2%

Gas Genset Product Family	Rating Tolerance
30-GC6NLT1 – 60-GC6NLT1	+/- 5%
GS75-62 – GS125-6S	+/- 3%
GS150-6S – GS400-GS GP355N6S – GP130N6S	+/- 5%

OPTIONAL TEST PROCEDURES

Extended-run factory acceptance testing:

In some cases, extended-run testing may be requested. Unless specified otherwise, extended-run testing will be performed in the following manner.

- // Full name-plate rated load
- // Standard readings taken every 15 minutes

STANDARD READINGS RECORDED DURING LOAD TEST INSPECTION

// Run Time	// Frequency
// AC Voltage	// Exciter Field Voltage
// AC Amperage	// Exciter Field Current
// kVA	// Lube Oil Pressure
// kWe	// Engine Coolant Temperature
// Power Factor	// Ambient Temperature

Witnessed factory acceptance testing

Witnessed factory tests must be scheduled and approved at least four weeks prior to the engine-generator set's scheduled shipping date. Any requests for witnessed factory testing after this four-week period must be approved by the Regional Sales Manager and are subject to additional fees.

Witnessed extended-run factory acceptance testing

Witnessed extended-run tests must be scheduled and approved at least four weeks prior to the engine-generator set's scheduled ship date. Any requests for witnessed extended-run testing after this four-week period must be approved by the Regional Sales Manager and are subject to additional fees.

Additional factory acceptance testing

Additional testing is available upon request. The following is a list of supplementary tests which can be performed on MTU Onsite Energy engine-generator sets. Non-standard testing is subject to additional charges.

Additional test methods:

- // Start and Stop Test (MIL-STD-705c 503.1c)
- // Remote Start and Stop Test (MIL-STD-705c 503.2c)
- // Overspeed Protective Device Test (MIL-STD-705c 505.2b)
- // Circulating Current Test (MIL-STD-705c 505.2b)
- // Insulation Resistance Test (MIL-STD-705c 301.1c)*
- // Open Circuit Saturation Curve Test (MIL-STD-705c 410.1b)
- // Temperature Rise Test (MIL-STD-705c 680.1c)
- // Frequency Range Adjust Test (MIL-STD-705c 511.2c)
- // Low Oil Pressure Protective Device Test (MIL-STD-705c 515.1b)
- // Over-temperature Protective Device Test (MIL-STD-705c 515.2b)
- // Controls, Direction, and Rotation Test (MIL-STD-705c 516.1a)
- // Frequency and Voltage Regulation, Stability, and Transient Response (MIL-STD-705c 608.1b)
- // Voltage and Frequency Regulation (MIL-STD-705c 614.1b)
- // Voltage Dip and Rise for Rated Load Test (MIL-STD-705c 619.2c)
- // Maximum Power Test (MIL-STD-705c 640.1d)
- // Fuel Consumption Test
- // Vibration and Mechanical Balance Test (ISO 8528-9)
- // Sound Test (ISO 8528-10)

* Testing conducted by generator OEM



International
Organization for
Standardization

A Tognum Group Company

MTU Onsite Energy Corporation / 100 Power Drive / Mankato / Minnesota 56001
Phone 507 625 7973 / Fax 507 625 2968 / Toll Free 800 325 5450

www.mtuonsiteenergy.com



ENCLOSURE AND GENERATOR SET

Color Options Data Sheet



PRODUCT HIGHLIGHTS

MTU Onsite Energy is proud to offer Diamond Vogel's Peridium® TGIC Polyester powder coating paint on our enclosures and generator sets. Peridium® offers excellent application and performance characteristics. Its tightly controlled particle size distribution provides exceptional first pass transfer efficiencies and edge coverage, along with the smoothest film available. Long term exterior durability, high performance mechanical properties, and overtake resistance are also common characteristics of these premium TGIC polyester coatings.

STANDARD COLOR*

MTU Onsite Energy uses the following paint color as the standard for our generator sets:



■ EL-0375 ANSI 61
Gray

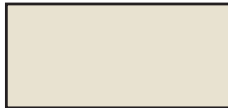
CUSTOM COLORS*

MTU Onsite Energy also offers custom color options for your MTU Onsite Energy generator set or enclosure.

Note: Additional charges are applicable. Please contact your MTU Onsite Energy Account Manager for details.



■ EL-1399 RAL-9003
Signal White



■ EL-1312 RAL-1013
Pearl White



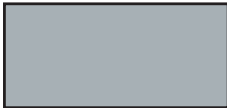
■ EL-0378
Khaki



■ EL-8310 RAL-1019
Gray Beige



■ EL-0380 RAL-7006
Beige Gray



■ EL-0384 ANSI 70
Gloss Gray



■ EL-3313
Construction Yellow



■ EL-5304
Bright Red



■ EL-5302
Deep Red



■ EL-5306 RAL-3009
Oxide Red



■ EL-0386 RAL-7023
Concrete Gray



■ EL-8307 RAL-8000
Green Brown



■ EL-6301 RAL-6003
Olive Green



■ EL-6303 RAL-6001
Emerald Green



■ EL-6305
Dark Green



■ EL-0382 RAL-7016
Anthracite Gray



■ EL-7370 RAL-5012
Gloss Light Blue



■ EL-7368 RAL-5023
Distant Blue



■ EL-7366 RAL-5005
Signal Blue



■ EL-7364 RAL-5013
Cobalt Blue

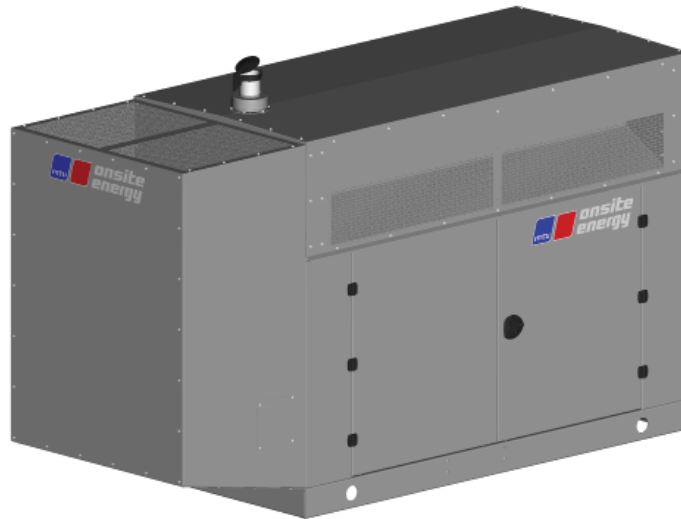


■ EL-9399 RAL-9005
Jet Black

* Colors shown are produced as close as modern printing techniques permit and are only approximate representation of the actual colors.

ENCLOSURE AND SOUND DATA SHEET - DIESEL

30-300 kW Standby / 27-275 kW Prime



ENCLOSURE LEVEL IDENTIFICATION

- Level 1:** Skid-mounted weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels designed for 100 mph wind load rating (150 mph rating on 30-200 kW). Enclosure consists of a bolted and welded construction with unit-mounted internal muffler. Hinged, lockable double-door access on both sides of the enclosure.
- Level 2:** Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
- Level 3*:** Level 2 enclosure with air exhaust scoop with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed in scoops where applicable.*
- Level 3 w/Exhaust Scoop Sound Attenuation Kit **:** Level 3 enclosure with 1.5" thick sound attenuated foam insulation installed in scoop (60-100 kW only).**

CERTIFICATIONS AND STANDARDS

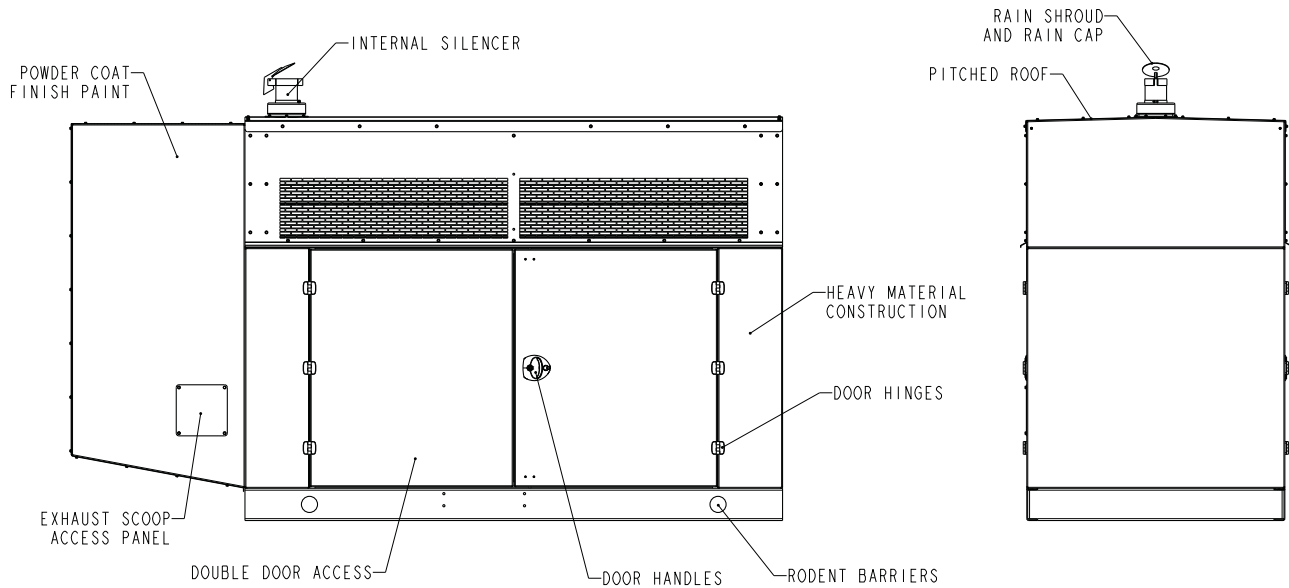
- UL 2200
- CSA
- ISO 9001:2008
- IBC / OSHPD

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- 150 mph wind rating 30-200 kW
- 100 mph wind rating 230-300 kW
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Exhaust scoop access panel and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Powder Coat Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- Internal silencer (Critical grade or better)
 - Insulated or wrapped mufflers and exhaust pipes
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - DIESEL

30-300 kW Standby / 27-275 kW Prime



OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- 150 mph wind rating 230-300 kW
- For other custom options, please consult factory.

SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Level 1	Level 2	Level 3*	Level 3 w/ Exhaust Scoop Sound Attenuation Kit**
Standby	DS30D6S	68.2	64.4	60.6	N/A
	DS35D6S	73.7	70.8	65.5	N/A
	DS40D6S	73.7	70.8	65.5	N/A
	DS50D6S	73.7	70.8	65.5	N/A
	DS60D6S	75.3	72.3	64.6	61.6
	DS80D6S	78.9	75.2	70.9	66.7
	DS100D6S	78.9	75.2	70.9	66.7
	DS125D6S	82.8	81.7	72	N/A
	DS150D6S	84.5	83	73.4	N/A
	DS180D6S	85.1	83	73.9	N/A
	DS200D6S	85.1	83	73.7	N/A
	DS230D6S	80.3	78.8	69.1	N/A
	DS250D6S	80.5	78.5	69.2	N/A
	DS275D6S	80.9	78.4	69.3	N/A
	DS300D6S	81	78.6	69.2	N/A

ENCLOSURE AND SOUND DATA SHEET - DIESEL

30-300 kW Standby / 27-275 kW Prime



Application	Model	Level 1	Level 2	Level 3*	Level 3 w/ Exhaust Scoop Sound Attenuation Kit**
Prime	DP27D6S	67.7	64.9	61.1	N/A
	DP35D6S	73.1	70.1	65.9	N/A
	DP40D6S	73.1	70.1	65.9	N/A
	DP45D6S	73.1	70.1	65.9	N/A
	DP51D6S	74.5	72	64.2	61.6
	DP80D6S	78.9	75.2	70.9	66.7
	DP90D6S	79	74.9	70.9	66.6
	DP111D6S	82.5	81.8	71.9	N/A
	DP135D6S	84.3	82.9	73.1	N/A
	DP180D6S	85.1	83	73.9	N/A
	DP210D6S	79.9	78.7	69.1	N/A
	DP230D6S	80.3	78.8	69.7	N/A
	DP250D6S	80.5	78.5	69.8	N/A
	DP275D6S	80.9	78.4	69.9	N/A

NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

N/A = Not Available

* 30-50 kW: No foam in scoop.
 60-100 kW: Without foam in scoop, however it is optional. Refer to Level 3 w/exhaust scoop sound attenuation kit.
 125-300 kW: Foam in scoop is standard.

** The Level 3 w/exhaust scoop sound attenuation kit is only available for 60-100 kW range.

ENCLOSURE AND SOUND DATA SHEET - DIESEL

350-600 kW Standby / 325-550 kW Prime



ENCLOSURE LEVEL IDENTIFICATION

Level 1: Weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels designed for 100 mph wind load rating. Enclosure consists of a bolted and welded construction with unit-mounted internal muffler included. Hinged, lockable double-door access on both sides of the enclosure.

Level 2: Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.

Level 3: Level 2 enclosure with air intake and exhaust scoops with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed in scoops.

CERTIFICATIONS AND STANDARDS

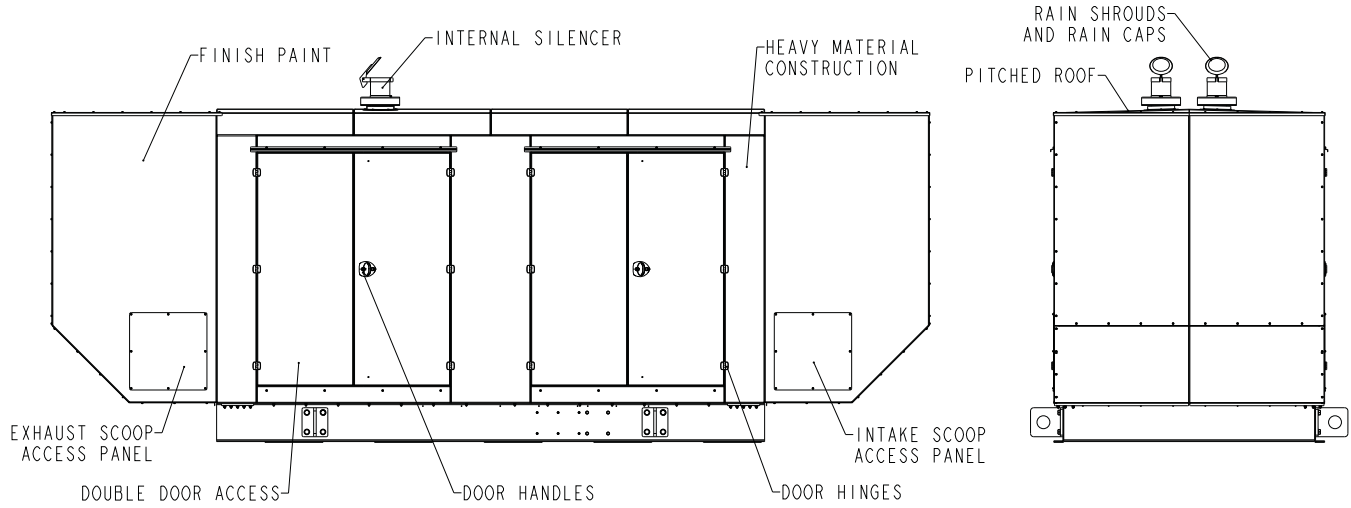
- UL 2200
- CSA
- ISO 9001:2008
- IBC / OSHPD

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- 100 mph wind rating
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- Internal silencer (Critical grade or better)
 - Insulated or wrapped mufflers and exhaust pipes
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - DIESEL

350-600 kW Standby / 325-550 kW Prime



OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- 150 mph wind rating
- For other custom options, please consult factory.

SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Level 1	Level 2	Level 3
Standby	DS350D6S	85.3	84.3	72.8
	DS400D6S	85.9	84.6	72.9
	DS450D6S	87.6	87.1	75.4
	DS500D6S	87.8	87.1	75.4
	DS550D6S	88.5	86.9	76.5
	DS600D6S	88.5	86.8	76.7
Prime	DP325D6S	85.5	84.2	72.7
	DP365D6S	85.5	84.1	72.8
	DP400D6S	C/F	87.1	C/F
	DP450D6S	87.6	87.1	75.4
	DP500D6S	88.5	86.9	76.1
	DP550D6S	88.3	86.9	76.5

ENCLOSURE AND SOUND DATA SHEET - DIESEL

350-600 kW Standby / 325-550 kW Prime



NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

Refer to the MTU Business Portal *Acoustics Data* for exhaust noise ratings.

C/F = Consult Factory

ENCLOSURE AND SOUND DATA SHEET - DIESEL

650-2,000 kW Standby / 615-1,800 kW Prime



ENCLOSURE LEVEL IDENTIFICATION

Weather Proof Enclosure (WPE):

Weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels. Enclosure consists of a bolted and welded construction with factory-mounted external muffler or internal muffler where applicable. Hinged, lockable double-door access on both sides of the enclosure.

Weather Proof (WPE) w/Sound Attenuation Kit:

Weather proof enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.

Ultra Quiet Enclosure (UQE):

Weather proof foamed enclosure with additional air intake and exhaust scoops for redirecting noise and air flow upward.

CERTIFICATIONS AND STANDARDS

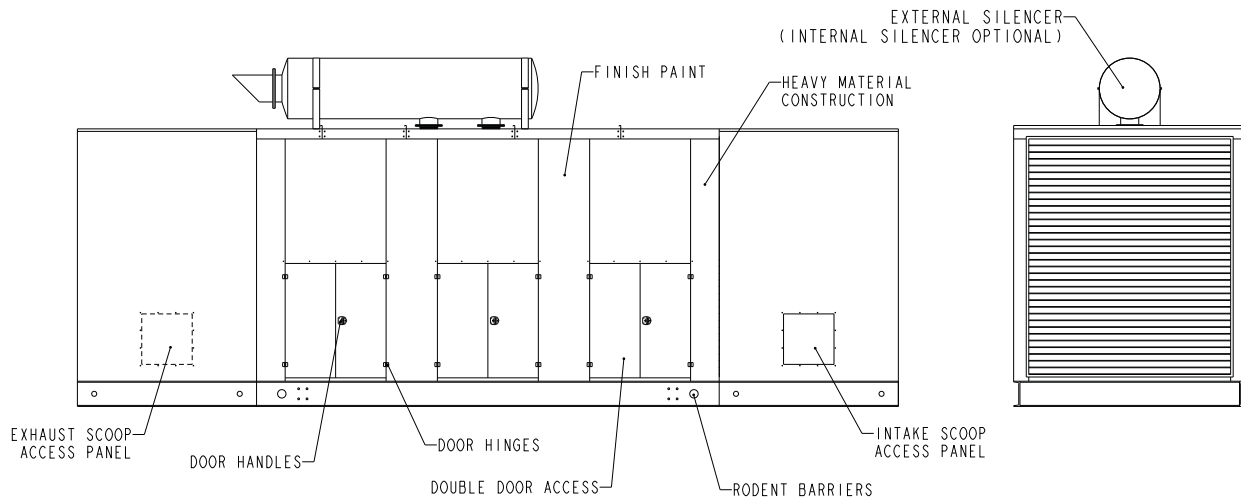
- UL 2200
- CSA
- ISO 9001:2008

STANDARD FEATURES FOR ALL LEVELS

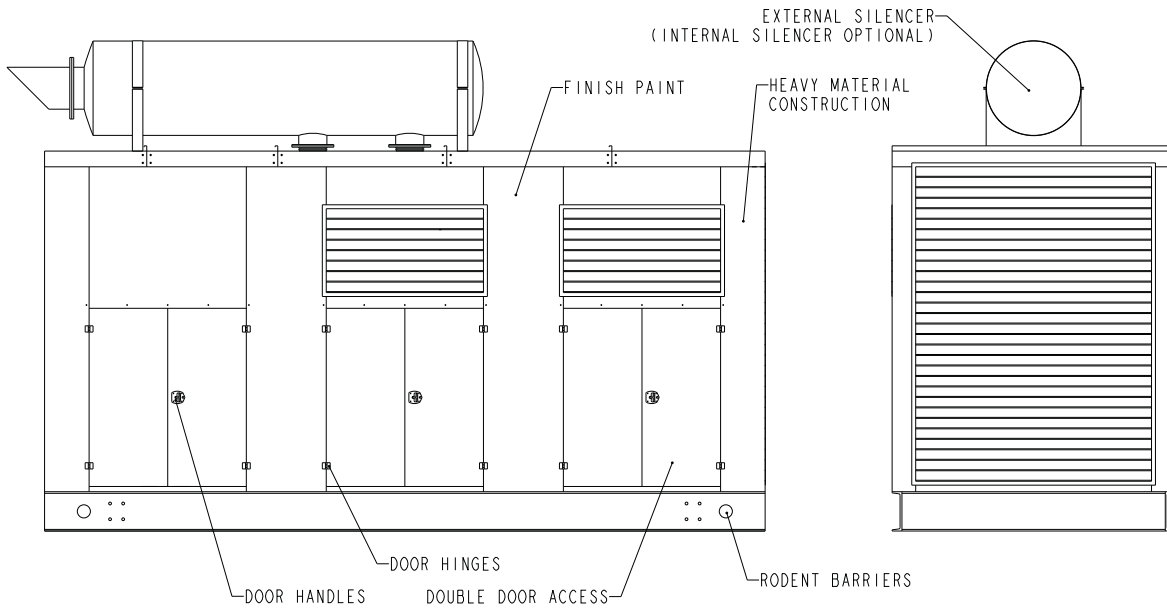
- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- External silencer (Industrial grade or better)
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - DIESEL

650-2,000 kW Standby / 615-1,800 kW Prime



Ultra Quiet Enclosure (UQE)



Weather Proof Enclosure (WPE)

OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- Internal silencer (Critical grade or better)
 - Insulated mufflers
 - Stainless steel flexible exhaust connections (where applicable)
- For other custom options, please consult factory.

ENCLOSURE AND SOUND DATA SHEET - DIESEL

650-2,000 kW Standby / 615-1,800 kW Prime



SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Weather Proof Enclosure (WPE)	Weather Proof Enclosure with Sound Attenuation Kit (WPE w/Sound Attenuation Kit)	Ultra Quiet Enclosure (UQE)
Standby	650-XC6DT2	89	86	71.9
	750-XC6DT2	89	86	71.9
	800-XC6DT2	86.1	82	76
	900-XC6DT2	89.5	86.5	86
	1000-XC6DT2	93	90.1	81.5
	1250-XC6DT2	C/F	88	75.9
	1500-XC6DT2	C/F	89.2	76.2
	1750-XC6DT2	C/F	90.2	77.2
	2000-XC6DT2	C/F	91.8	84
Prime	615-XC6DT2	C/F	C/F	C/F
	680-XC6DT2	C/F	C/F	C/F
	725-XC6DT2	86	82.1	C/F
	800-XC6DT2	C/F	C/F	C/F
	900-XC6DT2	C/F	C/F	C/F
	1125-XC6DT2	C/F	C/F	C/F
	1400-XC6DT2	C/F	C/F	C/F
	1600-XC6DT2	C/F	C/F	C/F
	1800-XC6DT2	C/F	C/F	C/F

NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

Refer to the MTU Business Portal *Acoustics Data* for exhaust noise ratings.

C/F = Consult Factory

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ENCLOSURE AND SOUND DATA SHEET - GAS

30-60 kW Standby



ENCLOSURE LEVEL IDENTIFICATION

Weather Proof Enclosure (WPE):

Weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels. Enclosure consists of a bolted and welded construction with factory-mounted external muffler or internal muffler where applicable. Hinged, lockable double-door access on both sides of the enclosure.

Weather Proof (WPE) with Foam:

Weather proof enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.

Weather Proof (WPE) with Foam and Scoops:

Weather proof foamed enclosure with additional exhaust scoop for redirecting noise and air flow upward.

Crystal Quiet Enclosure (CQE):

Weather proof foamed enclosure designed for maximum sound attenuation with air intakes above doors with additional baffles to reduce noise. Exhaust scoops utilized for redirecting noise and air flow upward.

CERTIFICATIONS AND STANDARDS

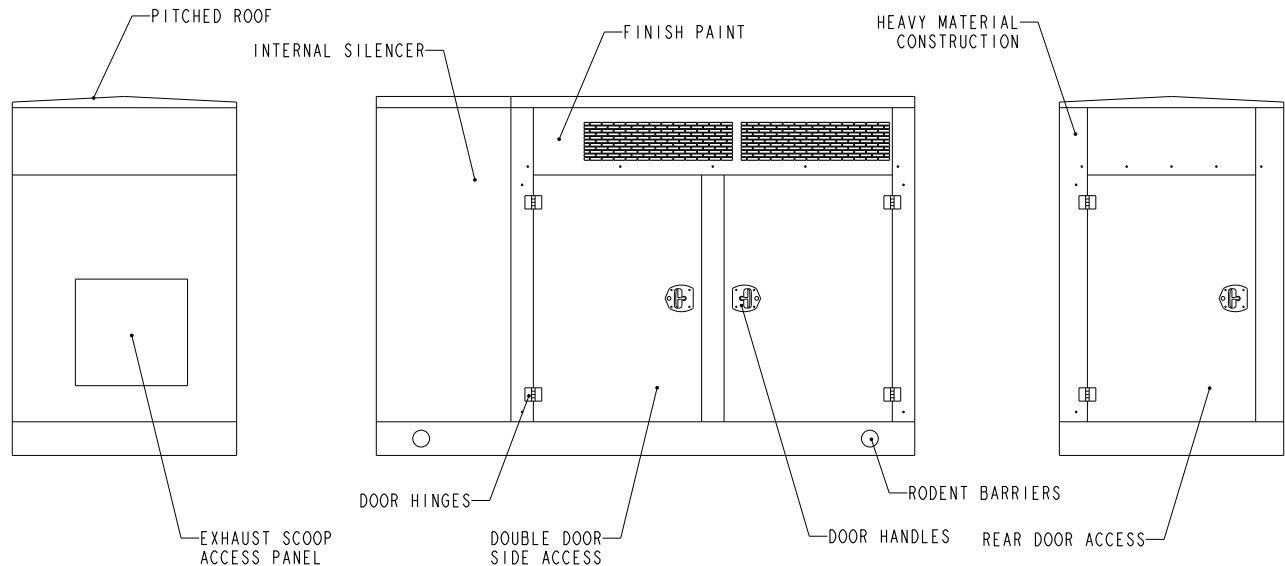
- UL 2200
- CSA
- ISO 9001:2008

STANDARD FEATURES FOR ALL LEVELS

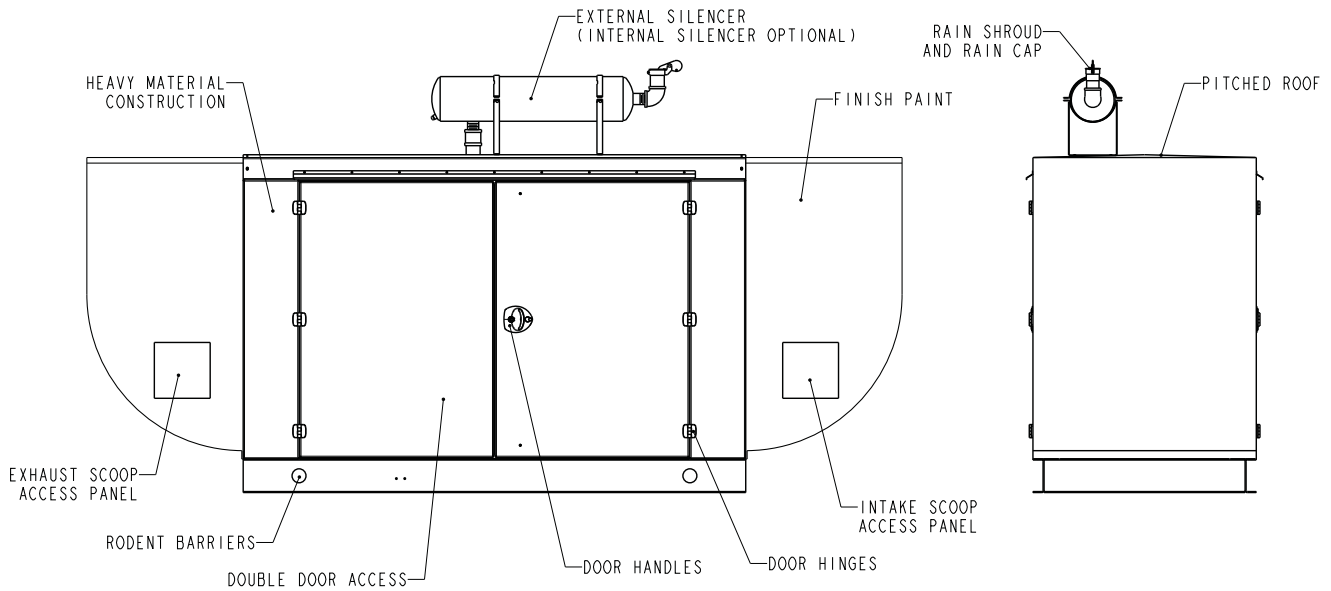
- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- Serviceability access
 - Multiple door access gives ease of serviceability to all components
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels (where applicable)
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- External or internal silencer
 - Stainless steel flexible exhaust connections

ENCLOSURE AND SOUND DATA SHEET - GAS

30-60 kW Standby



Crystal Quiet Enclosure (CQE)



Weather Proof Enclosure (WPE)

OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- For other custom options, please consult factory.

ENCLOSURE AND SOUND DATA SHEET - GAS

30-60 kW Standby



SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Weather Proof Enclosure (WPE)	Weather Proof Enclosure with Foam (WPE w/Foam)	Weather Proof Enclosure with Foam and Scoops (WPE w/Foam and Scoops)	Crystal Quiet Enclosure (CQE)
Standby (Natural Gas)	30-GC6NLT1	C/F	71.6	C/F	57.5
	40-GC6NLT1	C/F	C/F	C/F	C/F
	50-GC6NLT1	C/F	C/F	C/F	61.1
	60-GC6NLT1	C/F	C/F	C/F	C/F
Standby (LP)	30-GC6NLT1	C/F	72.3	C/F	57.5
	40-GC6NLT1	C/F	70.7	C/F	C/F
	50-GC6NLT1	C/F	C/F	C/F	C/F
	60-GC6NLT1	C/F	69.4	C/F	59

NOTE:

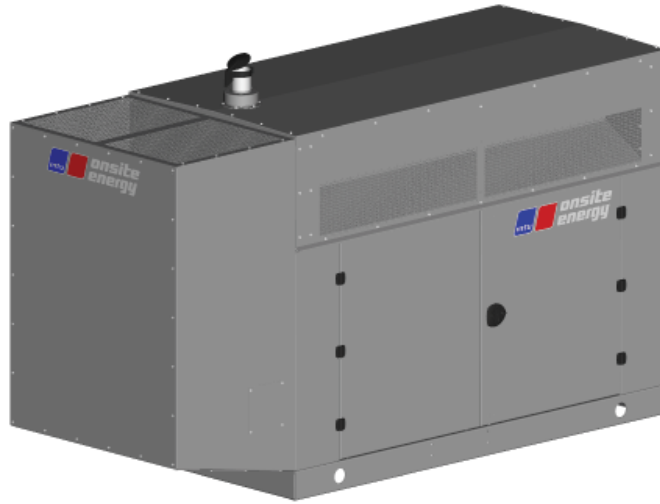
- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

C/F = Consult Factory

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ENCLOSURE AND SOUND DATA SHEET - GAS

75-125 kW Standby



ENCLOSURE LEVEL IDENTIFICATION

- Level 1:** Skid-mounted weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels designed for 150 mph wind load rating. Enclosure consists of a bolted and welded construction with unit-mounted internal muffler. Hinged, lockable double-door access on both sides of the enclosure.
- Level 2:** Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
- Level 3:** Level 1 enclosure with air exhaust scoop with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed in scoop only.
- Level 3 w/Housing Sound Attenuation Kit:** Level 3 enclosure with 1.5" thick sound attenuated foam insulation installed inside enclosure walls.

CERTIFICATIONS AND STANDARDS

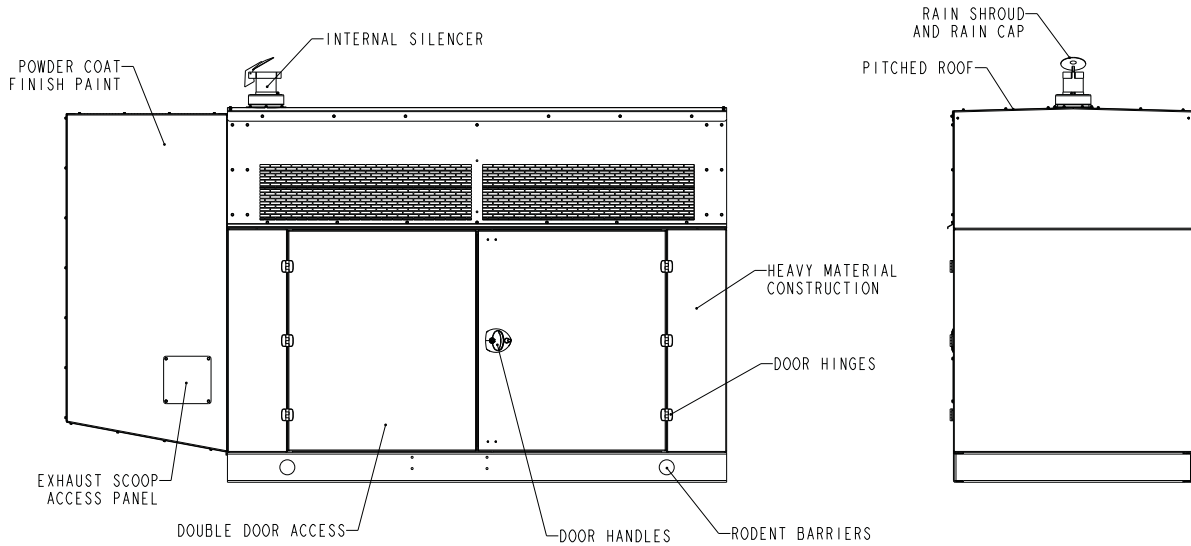
- UL 2200
- CSA
- ISO 9001:2008

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- 150 mph wind rating
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Exhaust scoop access panel and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Powder Coat Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- Internal silencer (Critical grade or better)
 - Insulated muffler
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - GAS

75-125 kW Standby



OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- For other custom options, please consult factory.

SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Level 1	Level 2	Level 3	Level 3 w/ Housing Sound Attenuation Kit
Standby (Natural Gas)	GS75-6S	73	71.8	67.8	61.5
	GS100-6S	76.8	72.8	70.5	62.8
	GS125-6S	79.6	79.4	74.7	67.1
Standby (Liquid Propane)	GS75-6S	73.3	72	68.1	61.6
	GS100-6S	75	72.3	70.5	62.9
	GS125-6S	79.6	79.2	74.3	67.6

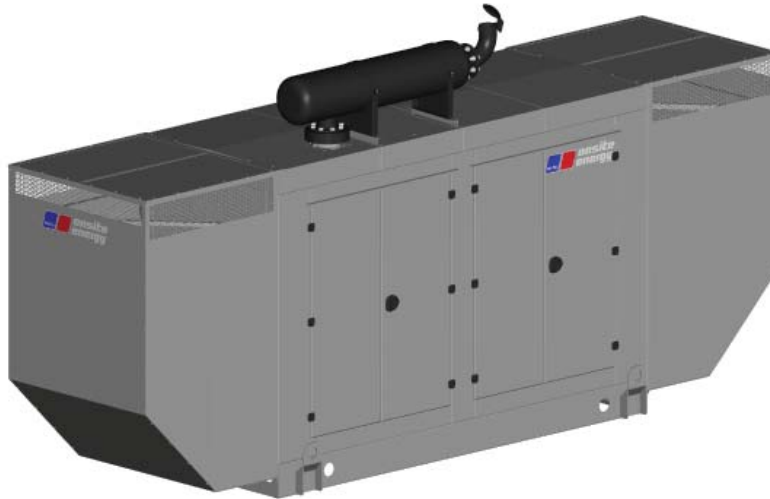
NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

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ENCLOSURE AND SOUND DATA SHEET - GAS

150-200 kW Standby / 130-175 kW Prime



ENCLOSURE LEVEL IDENTIFICATION

- Level 1:** Weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels designed for 100 mph wind load rating. Enclosure consists of a bolted construction with factory-mounted internal or external muffler. Hinged, lockable double-door access on both sides of the enclosure.
- Level 2:** Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
- Level 3:** Level 2 enclosure with air intake and exhaust scoops with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam.

CERTIFICATIONS AND STANDARDS

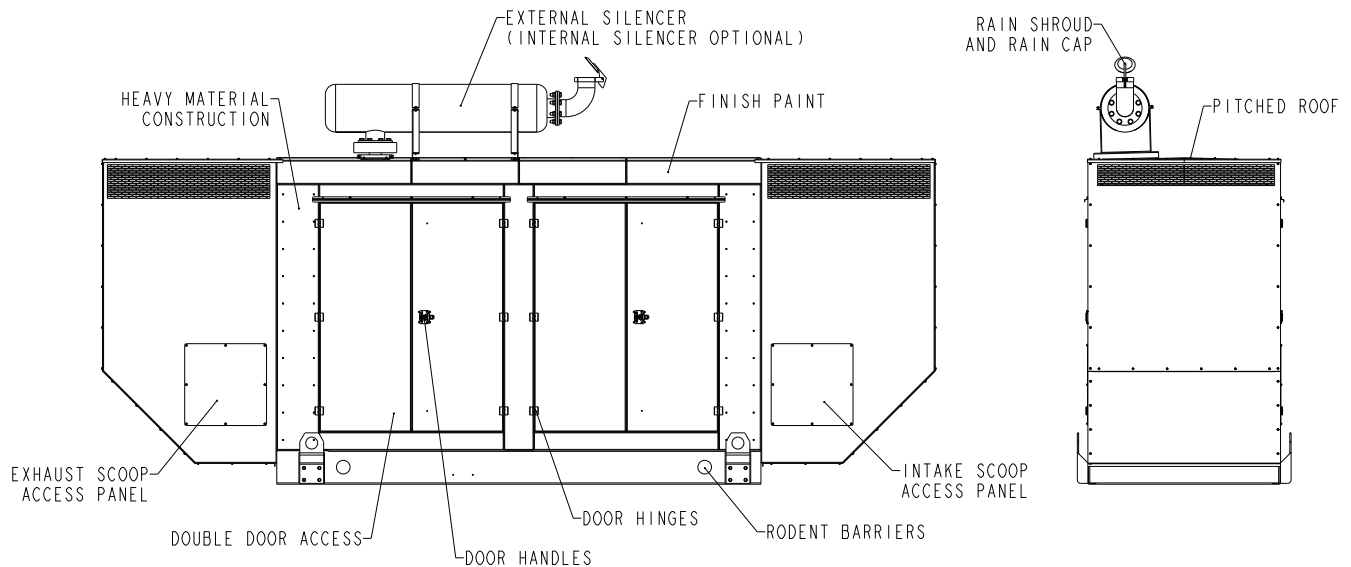
- UL 2200
- CSA
- ISO 9001:2008

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- 100 mph wind rating
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- External silencer (Industrial grade or better)
 - Wrapped exhaust pipes and catalyst
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - GAS

150-200 kW Standby / 130-175 kW Prime



OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- Internal silencer (Critical grade)
 - Insulated or wrapped mufflers, catalyst, and exhaust pipes
 - Stainless steel flexible exhaust connections (where applicable)
- For other custom options, please consult factory.

SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Level 1	Level 2	Level 3
Standby (Natural Gas)	GS150-6S	79	77.3	70.4
	GS200-6S	84.1	82.8	71.4
Standby (Liquid Propane)	GS150-6S	78	77.8	70
	GS200-6S	83.9	83.1	71.6
Prime (Natural Gas)	GP130N6S	78.7	77.5	70.3
	GP175N6S	84.7	82.8	71

ENCLOSURE AND SOUND DATA SHEET - GAS

150-200 kW Standby / 130-175 kW Prime



NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

ENCLOSURE AND SOUND DATA SHEET - GAS

260-400 kW Standby / 235-355 kW Prime



ENCLOSURE LEVEL IDENTIFICATION

- Level 1:** Weather proof enclosure constructed of heavy gauge steel or aluminum with fixed storm proof panels designed for 100 mph wind load rating. Enclosure consists of a bolted construction with factory-mounted external muffler. Hinged, lockable double-door access on both sides of the enclosure.
- Level 2:** Level 1 enclosure with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam insulation installed inside enclosure walls.
- Level 3:** Level 2 enclosure with exhaust scoop with UL 94 HF-1 compliant, 1.5" thick sound attenuated foam. Internal silencers available.

CERTIFICATIONS AND STANDARDS

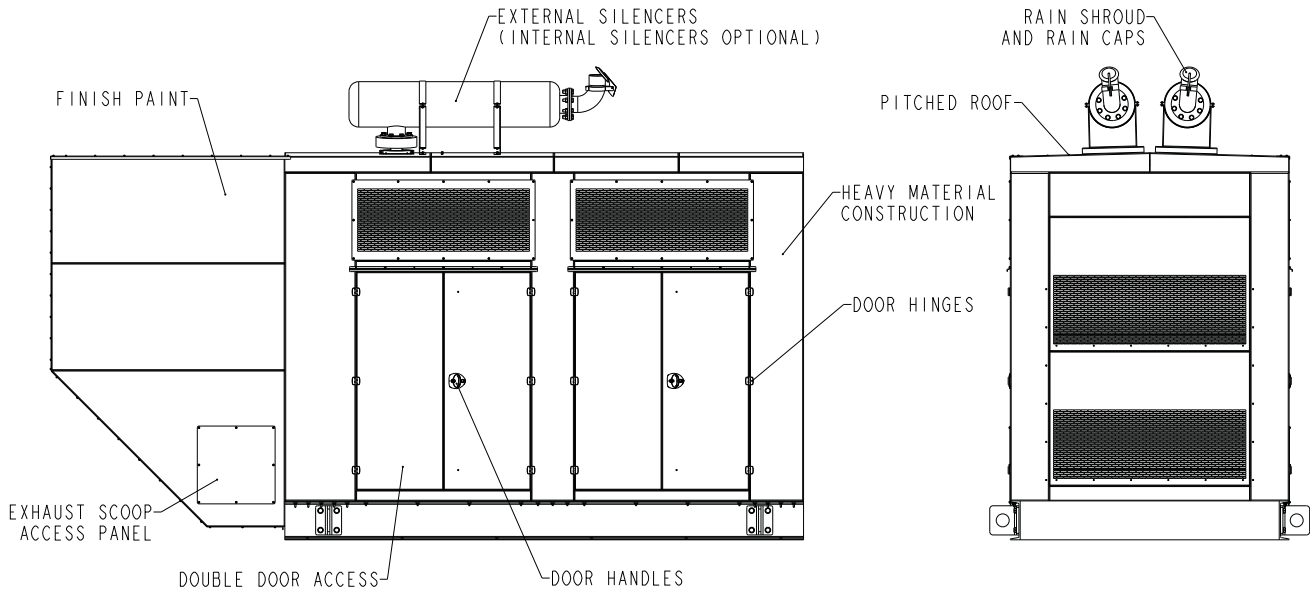
- UL 2200
- CSA
- ISO 9001:2008

STANDARD FEATURES FOR ALL LEVELS

- Heavy material construction
 - Steel Enclosure: 14 gauge or greater
 - Aluminum Enclosure: 0.09" thick or greater
- 100 mph wind rating
- Serviceability access
 - Double door access gives ease of serviceability to all components
- Pitched roof
- Rain shroud and rain cap
- Rodent barriers
- Scoop access panels and drain
- Hardware
 - Powder coated hinges with stainless steel pins
 - Key-lockable and pad-lockable powder coated door handles
- Finish Paint: ANSI 61 Grey standard
 - Refer to *Enclosures and Generator Set Color Options* data sheet
- External silencer (Industrial grade or better)
 - Stainless steel flexible exhaust connections (where applicable)

ENCLOSURE AND SOUND DATA SHEET - GAS

260-400 kW Standby / 235-355 kW Prime



OPTIONAL FEATURES

- Door restraints
- AC or DC light package
- Motorized / gravity louvers (where available)
- Internal silencer (Critical grade)
 - Insulated or wrapped mufflers, catalyst, and exhaust pipes
 - Stainless steel flexible exhaust connections (where applicable)
- 150 mph wind rating
- For other custom options, please consult factory.

SOUND RATINGS dB(A) AT 7 METERS

Application	Model	Level 1	Level 2	Level 3
Standby (Natural Gas)	GS260-6S	80.6	80.1	72.7
	GS350-6S	83.9	80.9	73.9
	GS400-6S	83.9	81.4	73.6
Standby (Liquid Propane)	GS260-6S	81.2	80	72.9
	GS350-6S	83.7	80.8	74.5
	GS400-6S	83.7	81.3	75.1
Prime (Natural Gas)	GP235N6S	80.6	80	72.8
	GP300N6S	83.8	80.8	72.3
	GP355N6S	83.6	81.2	73

ENCLOSURE AND SOUND DATA SHEET - GAS

260-400 kW Standby / 235-355 kW Prime



NOTE:

- Aluminum enclosure sound levels are approximately 2 dB(A) higher than listed sound levels for steel enclosures
- Sound pressure levels subject to instrumentation, measurement, installation, and generator set variability
- Sound power levels per ISO 8528-10 and ANSI S1.13-2005
- Sound data measured with:
 - Full-rated load
 - Standard radiator package
 - Infinite exhaust connection

GAS ENGINE-GENERATOR SET

NATURALLY ASPIRATED

75 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby (NG) (LP)	GS75N6SDN GS75L6SDN	GS75N6SGN GS75L6SGN	GS75N6SPN GS75L6SPN	GS75N6SJN GS75L6SJN	GS75N6SRN GS75L6SRN	GS75N6SNN GS75L6SNN
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	292	292	243	210	105	84
Natural Gas						
Ratings: kW/kVA	70/70	70/70	70/87.5	70/87.5	70/87.5	70/87.5
LP Gas						
Ratings: Amps	313	313	260	226	113	90
LP Gas						
Ratings: kW/kVA	75/75	75/75	75/93.75	75/93.75	75/93.75	75/93.75
skVA@30%						
Voltage Dip	311	107	216	216	288	235
Generator Model	363CSL1617	431CSL6202	362CSL1604	362CSL1604	362CSL1604	362PSL1635
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 LEAD	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

Note: This unit is available with a dual fuel configuration.

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6.8L Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability
 - // Digital Control Panel
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Heavy Duty Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Rack & Cables
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Ford
Model	6.8L V10
Type	4-Cycle
Aspiration	Naturally Aspirated
Arrangement	10-V
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	90.2 (3.55)
Stroke: cm (in)	105.8 (4.17)
Compression Ratio	9:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	85.6 (114.8)
Maximum Power (LP): kWm (bhp)	89.4 (119.9)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	5.7 (1.5)
Engine Jacket Water Capacity: L (gal)	5.9 (1.55)
System Coolant Capacity: L (gal)	25.58 (6.75)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	27.2 (960)	11.4 (403)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	21.5 (759)	9.3 (328)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	15.6 (551)	6.8 (239)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	123 (32.5)
Heat Rejection to Coolant: kW (BTUM)	78.2 (4,448)
Heat Radiated to Ambient: kW (BTUM)	19.1 (1,086)

// Air Requirements

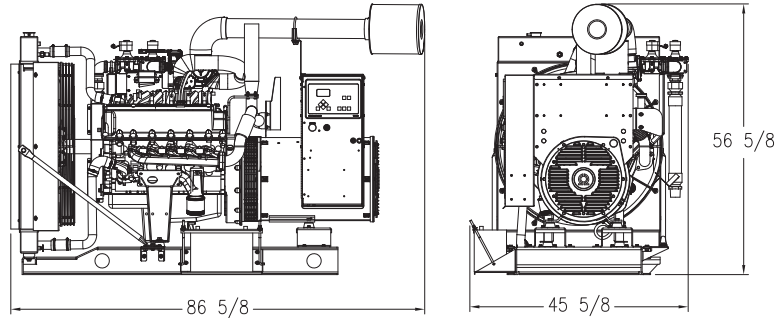
Aspirating: *m ³ /min (SCFM)	4.54 (160.5)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	303.4 (10,715)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	103 (3,369)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	660 (1,220)
Gas Volume at Stack Temp: m ³ /min (CFM)	15.3 (539)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	4.98 (20)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	2,199 x 1,158 x 1,438 mm (86.6 x 45.6 x 56.6 in)	1,125 kg (2,481 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	75.5	76.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	7.5	30.5
Liquid Propane	7.6	48.0

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/90 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET TURBOCHARGED

100 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby (NG) (LP)	GS 100N6SDT GS 100L6SDT	GS 100N6SGT GS 100L6SGT	GS 100N6SPT GS 100L6SPT	GS 100N6SJT GS 100L6SJT	GS 100N6SRT GS 100L6SRT	GS 100N6SNT GS 100L6SNT
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas Ratings: Amps	417	417	347	301	151	120
Natural Gas Ratings: kW/kVA	100/100	100/100	100/125	100/125	100/125	100/125
LP Gas Ratings: Amps	417	417	347	301	151	120
LP Gas Ratings: kW/kVA	100/100	100/100	100/125	100/125	100/125	100/125
skVA@30%						
Voltage Dip	311	130	258	258	344	277
Generator Model*	363CSL1617	431CSL6204	362CSL1606	362CSL1606	362CSL1606	362PSL1636
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 LEAD	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

Note: This unit is available with a dual fuel configuration.

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6.8L Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Heavy Duty Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Rack & Cables
 Flexible Exhaust Connection
 Liquid Cooled, Ball Bearing Turbocharger
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Ford
Model	6.8L V10
Type	4-Cycle
Aspiration	Turbocharged
Arrangement	10-V
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	90.2 (3.55)
Stroke: cm (in)	105.8 (4.17)
Compression Ratio	9:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	132 (177)
Maximum Power (LP): kWm (bhp)	132 (177)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	5.7 (1.5)
Engine Jacket Water Capacity: L (gal)	6 (1.6)
System Coolant Capacity: L (gal)	27.47 (7.25)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	31.15 (1,100)	14.49 (511.5)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	23.67 (835.9)	11.32 (400)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	16.2 (520.1)	8.07 (284.8)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	123 (32.5)
Heat Rejection to Coolant: kW (BTUM)	81.29 (4,623)
Heat Radiated to Ambient: kW (BTUM)	41.54 (2,362)

// Air Requirements

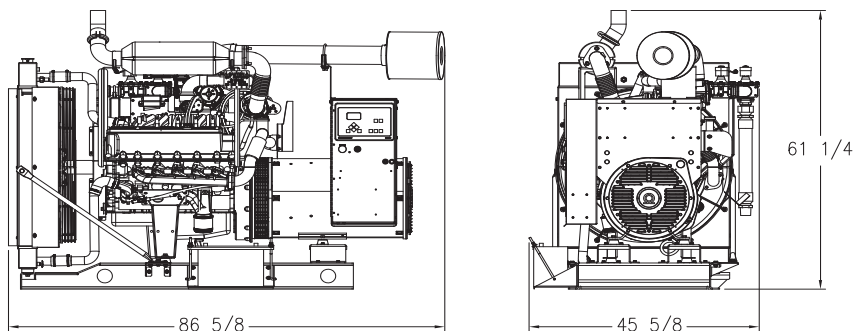
Aspirating: *m ³ /min (SCFM)	5.91 (208.7)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	254.9 (9,001.7)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	150.9 (5,329)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	716.1 (1,321)
Gas Volume at Stack Temp: m ³ /min (CFM)	20.2 (713.4)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	6.23 (25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	2,199 x 1,158 x 1,556 mm (86.6 x 45.6 x 61.25 in)	1,163.9 kg (2,566 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	77.2	77.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.44	0.20
Liquid Propane	0.12	0.09

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/1048 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

125 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby (NG) (LP)	GS 125N6SDA GS 125L6SDA	GS 125N6SGA GS 125L6SGA	GS 125N6SPA GS 125L6SPA	GS 125N6SJA GS 125L6SJA	GS 125N6SRA GS 125L6SRA	GS 125N6SNA GS 125L6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas Ratings: Amps	521	521	434	376	188	151
Natural Gas Ratings: kW/kVA	125/125	125/125	125/156.25	125/156.25	125/156.25	125/156.25
LP Gas Ratings: Amps	521	521	434	376	188	151
LP Gas Ratings: kW/kVA	125/125	125/125	125/156.25	125/156.25	125/156.25	125/156.25
skVA@30%						
Voltage Dip	196	130	323	323	430	331
Generator Model*	431PSL6224	431CSL6204	363CSL1607	363CSL1607	363CSL1607	363PSL1658
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 LEAD	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

Note: This unit is available with a dual fuel configuration.

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6.8L Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability
 - // Digital Control Panel
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Heavy Duty Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Rack & Cables
 Flexible Exhaust Connection
 Liquid Cooled, Ball Bearing Turbocharger
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Ford
Model	6.8L V10
Type	4-Cycle
Aspiration	Turbocharged, Intercooled
Arrangement	10-V
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	90.2 (3.55)
Stroke: cm (in)	105.8 (4.17)
Compression Ratio	9:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	154 (207)
Maximum Power (LP): kWm (bhp)	154 (207)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	5.7 (1.5)
Engine Jacket Water Capacity: L (gal)	6.1 (1.6)
System Coolant Capacity: L (gal)	35.04 (9.25)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	41.4 (1,463)	18.1 (640)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	32.9 (1,161)	14.3 (505)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	24 (849)	10.4 (366)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	123 (32.5)
Heat Rejection to Coolant: kW (BTUM)	85.3 (4,850)
Heat Radiated to Ambient: kW (BTUM)	39.82 (2,265)
Heat Rejected to Charge Air Cooler: kW (BTUM)	14.1 (800)

* Installation of enclosures reduces the ambient capacity of the cooling system by 3 °C (5.4 °F).

// Air Requirements

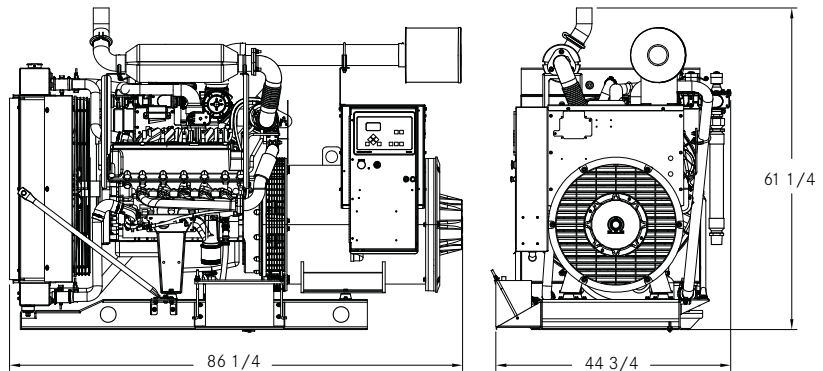
Aspirating: *m ³ /min (SCFM)	7.8 (275)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	256 (9,056)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	144.6 (5,107)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	649 (1,200)
Gas Volume at Stack Temp: m ³ /min (CFM)	25.1 (886)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	6.2 (25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	2,191 x 1,137 x 1,556 mm (86.25 x 44.75 x 61.25 in)	1, 293 kg (2,850 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	83	83

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.40	0.04
Liquid Propane	0.11	0.16

**All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/1048 specifications.**

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

150 kWe / 60 Hz / Standby
208 - 600V

(Reference GP130N6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby (NG) (LP)	GS 150N6SGA GS 150L6SGA	GS 150N6SDA GS 150L6SDA	GS 150N6SPA GS 150L6SPA	GS 150N6SJA GS 150L6SJA	GS 150N6SRA GS 150L6SRA	GS 150N6SNA GS 150L6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	625	625	520	451	225	180
Natural Gas						
Ratings: kW/kVA	150/150	150/150	150/187	150/187	150/187	150/187
LP Gas						
Ratings: Amps	416	416	346	300	150	120
LP Gas						
Ratings: kW/kVA	100/100	100/100	100/125	100/125	100/125	100/125
skVA@30%						
Voltage Dip	250	360	433	433	577	380
Generator Model*	432PSL6212	432PSL6228	431PSL6206	431PSL6206	431PSL6206	431PSL6242
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 8.1 L Turbo Engine Charge Air Cooling
 - 8.1 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	8.1L CAC
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	8.1 (492)
Bore: cm (in)	11.1 (4.37)
Stroke: cm (in)	13.9 (5.97)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	177 (237)
Maximum Power (LP): kWm (bhp)	122 (164)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	27.5 (7.2)
Engine Jacket Water Capacity: L (gal)	22.7 (5)
System Coolant Capacity: L (gal)	240 (63)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	43.6 (1,539)	14.7 (517)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	33.7 (1,191)	11.1 (390)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	23.9 (845)	8 (283)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	240 (63)
Heat Rejection to Coolant: kW (BTUM)	164.4 (9,357)
Heat Radiated to Ambient: kW (BTUM)	65.2 (3,710)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	9.3 (317)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	428 (15,100)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	147 (5,175)

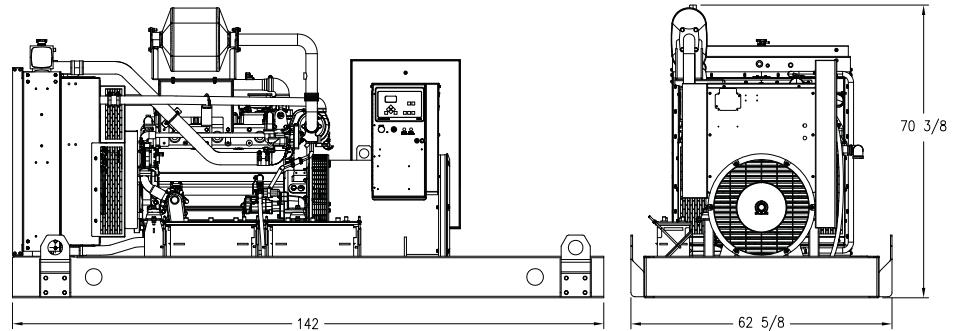
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	660 (1,220)
Gas Volume at Stack Temp: m ³ /min (CFM)	29.7 (1,050)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,607 x 1,591 x 1,788 mm (142 x 62.63 x 70.38 in)	2,562 kg (5,647 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	82	81.7

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.63	0.13
Liquid Propane	0.08	0.39

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

200 kWe / 60 Hz / Standby
208 - 600V

(Reference GP175N6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby (NG) (LP)	GS200N6SGA GS200L6SGA	GS200N6SDA GS200L6SDA	GS200N6SPA GS200L6SPA	GS200N6SJA GS200L6SJA	GS200N6SRA GS200L6SRA	GS200N6SNA GS200L6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas Ratings: Amps	750	750	694	601	300	240
Natural Gas Ratings: kW/kVA	180/180	180/180	200/250	200/250	200/250	200/250
LP Gas Ratings: Amps	541	541	451	390	195	156
LP Gas Ratings: kW/kVA	130/130	130/130	130/162	130/162	130/162	130/162
skVA@30%						
Voltage Dip	425	370	608	608	809	720
Generator Model*	433CSL6216	432PSL6228	432CSL6210	432CSL6210	432CSL6210	432PSL6246
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 11.1 L Turbo Engine Charge Air Cooling
 - 11.1 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator
 ±1% Voltage Regulation No load to full load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	11.1L CAC
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	11.1 (673)
Bore: cm (in)	12.3 (4.84)
Stroke: cm (in)	15.5 (6.1)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	225 (302)
Maximum Power (LP): kWm (bhp)	155 (208)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	28.5 (8)
Engine Jacket Water Capacity: L (gal)	25 (5.5)
System Coolant Capacity: L (gal)	149 (32.8)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	59.9 (2,115)	19.9 (704)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	46.7 (1,648)	17 (600)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	32.8 (1,157)	11.5 (404)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	310 (82)
Heat Rejection to Coolant: kW (BTUM)	194.6 (11,071)
Heat Radiated to Ambient: kW (BTUM)	40.4 (2,295)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	11.7 (400)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	631 (22,300)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	237 (8,365)

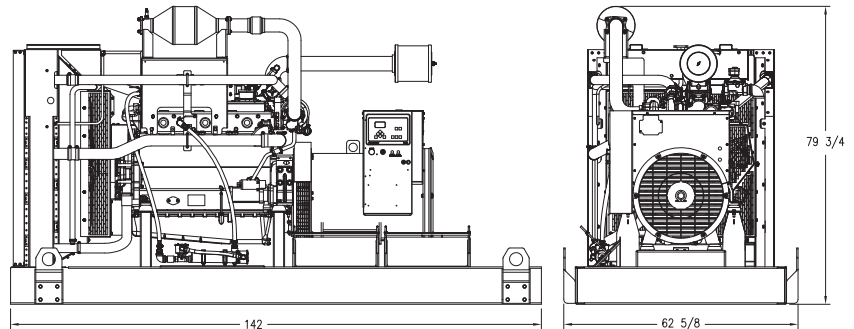
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	694 (1,281)
Gas Volume at Stack Temp: m ³ /min (CFM)	38.8 (1,371)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (LxWxH)	Weight (dry)
Open Power Unit (OPU)	3,607 x 1,435 x 2,026 mm (142 x 156.5 x 79.75 in)	3,096 kg (6,258 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	86.3	86.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	2.24	0.26
Liquid Propane	0.08	0.25

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations of ±5%. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

260 kWe / 60 Hz / Standby
208 - 600V

(Reference GP235N6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby (NG) (LP)	GS260N6SGA GS260L6SGA	GS260N6SPA GS260L6SPA	GS260N6SJA GS260L6SJA	GS260N6SRA GS260L6SRA	GS260N6SNA GS260L6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas Ratings: Amps	1063	902	782	391	313
Natural Gas Ratings: kW/kVA	255/255	260/325	260/325	260/325	260/325
LP Gas Ratings: Amps	625	555	481	241	192
LP Gas Ratings: kW/kVA skVA@30%	150/150	160/200	160/200	160/200	160/200
Voltage Dip	520	608	608	809	740
Generator Model	572RSL4031	432PSL6210	432PSL6210	432PSL6210	432PSL6246
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 14.6 L Turbo Engine Charge Air Cooling
 - 14.6 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (with PMG only)
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator (Digital when PMG is Standard)
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	14.6L CAC
Type	4-Cycle
Arrangement	8-V
Displacement: L (in ³)	14.6 (892)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	300 (402)
Maximum Power (LP): kWm (bhp)	189 (253)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	38.1 (10.1)
Engine Jacket Water Capacity: L (gal)	43.2 (9.5)
System Coolant Capacity: L (gal)	227 (50)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8°C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	85 (3,000)	24.3 (858)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	64.6 (2,280)	17.9 (633)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	44.7 (1,580)	13.3 (468)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	680 (180)
Heat Rejection to Coolant: kW (BTUM)	285 (16,189)
Heat Radiated to Ambient: kW (BTUM)	80.5 (4,580)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	15.6 (532)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	849 (30,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	293 (10,330)

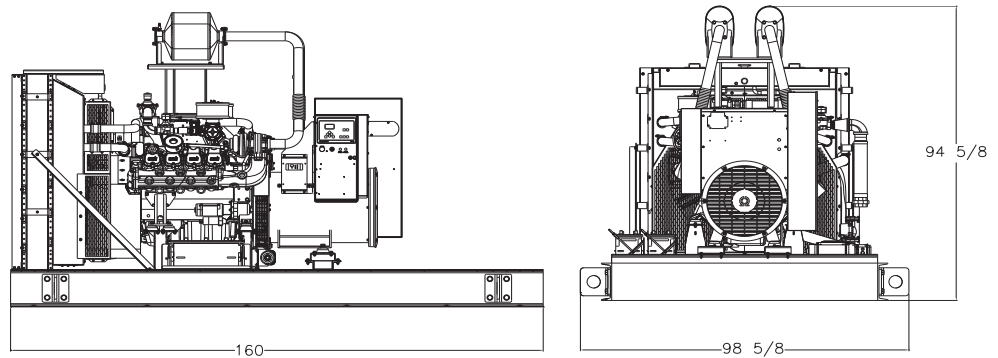
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	554 (1,030)
Gas Volume at Stack Temp: m ³ /min (CFM)	44.2 (1,560)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

4,064 x 2,506 x 2,404 mm (160 x 98.63 x 94.63 in)

Weight (dry)

4,055 kg (8,939 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load (NG)

83.1

Standby Full Load (LP)

83

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.22	0.06
Liquid Propane	0.07	0.11

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

350 kWe / 60 Hz / Standby
208 - 600V

(Reference GP300N6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby (NG) (LP)	GS350N6SGA GS350L6SGA	GS350N6SPA GS350L6SPA	GS350N6SJA GS350L6SJA	GS350N6SRA GS350L6SRA	GS350N6SNA GS350L6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas					
Ratings: Amps	1438	1214	1052	526	481
Natural Gas					
Ratings: kW/kVA	345/345	350/437	350/437	350/437	350/437
LP Gas					
Ratings: Amps	1000	850	737	368	295
LP Gas					
Ratings: kW/kVA skVA@30%	240/240	245/306	245/306	245/306	245/306
Voltage Dip	700	930	930	1238	1100
Generator Model*	573RSL4035	433CSL6216	433CSL6216	433CSL6216	433PSL6248
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 18.3 L Turbo Engine Charge Air Cooling
 - 18.3 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (with PMG only)
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator (Digital when PMG is Standard)
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	18.3L CAC
Type	4-Cycle
Arrangement	10-V
Displacement: L (in ³)	18.3 (1,115)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	400 (536)
Maximum Power (LP): kWm (bhp)	297 (398)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	42.1 (11.1)
Engine Jacket Water Capacity: L (gal)	50 (11)
System Coolant Capacity: L (gal)	289 (63.5)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8°C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	99.1 (3,498.8)	32.5 (1,145.9)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	77.2 (2,726.7)	27.7 (977.1)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	54.2 (1,913.7)	18.7 (658.5)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	660 (174)
Heat Rejection to Coolant: kW (BTUM)	365 (20,784)
Heat Radiated to Ambient: kW (BTUM)	88.5 (5,030)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	19.4 (664)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	1,019 (36,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	321 (11,350)

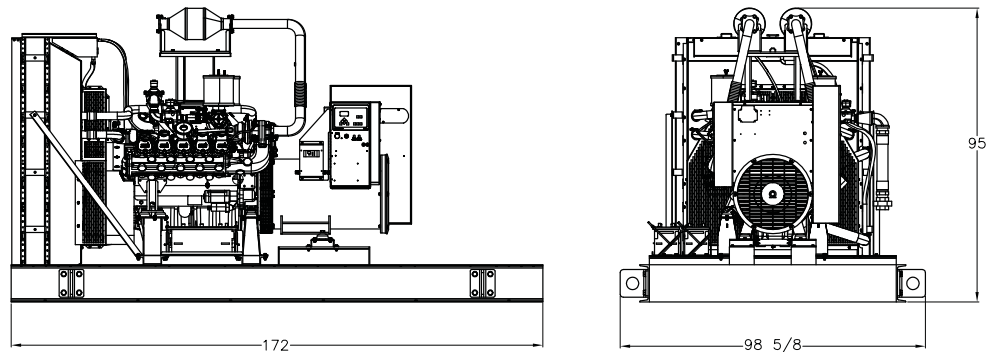
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	607 (1,125)
Gas Volume at Stack Temp: m ³ /min (CFM)	58.6 (2,070)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	4,369 x 2,506 x 2,413 mm (172 x 98.63 x 95 in)	4,741 kg (10,452 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	85.1	84.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.59	0.21
Liquid Propane	0.09	0.18

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

400 kWe / 60 Hz / Standby
208 - 600V

(Reference GP355N6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby (NG) (LP)	GS400N6SGA GS400L6SGA	GS400N6SPA GS400L6SPA	GS400N6SJA GS400L6SJA	GS400N6SRA GS400L6SRA	GS400N6SNA GS400L6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas Ratings: Amps	1604	1388	1203	601	481
Natural Gas Ratings: kW/kVA	385/385	400/500	400/500	400/500	400/500
LP Gas Ratings: Amps	1187	1023	887	443	355
LP Gas Ratings: kW/kVA	285/285	295/368	295/368	295/368	295/368
skVA@30%					
Voltage Dip	760	1500	1500	1500	1080
Generator Model*	574RSL4037	572RSL4029	572RSL4029	572RSL4029	433RSS4266
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 21.9 L Turbo Engine Charge Air Cooling
 - 21.9 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Optional Fuels: LP Liquid and Dual Fuel
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Digital, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	21.9L CAC
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	21.9 (1,338)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	456 (612)
Maximum Power (LP): kWm (bhp)	351 (471)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	47.1 (12.4)
Engine Jacket Water Capacity: L (gal)	52.3 (11.5)
System Coolant Capacity: L (gal)	291 (64)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	119.8 (4,230)	39.9 (1,407)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	93.4 (3,297)	34 (1,200)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	65.5 (2,314)	22.9 (808)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	660 (174)
Heat Rejection to Coolant: kW (BTUM)	453 (25,760)
Heat Radiated to Ambient: kW (BTUM)	118.2 (6,720)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	24.6 (841)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	1,133 (40,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	429 (15,160)

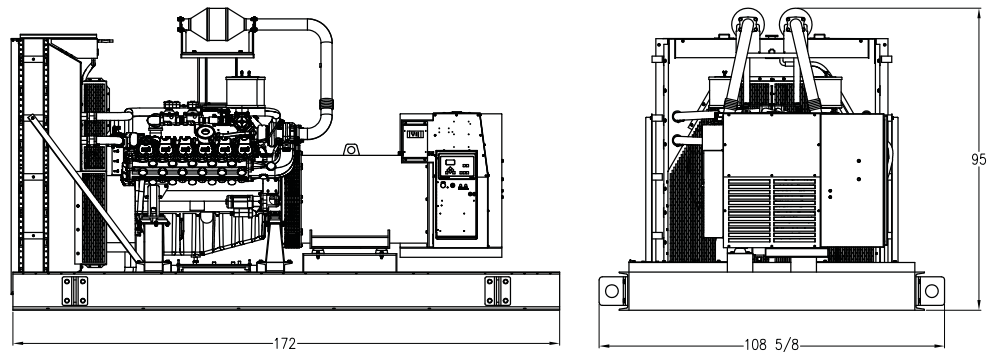
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	582 (1,080)
Gas Volume at Stack Temp: m ³ /min (CFM)	72.2 (2,550)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	4,369 x 2,760 x 2,413 mm (172 x 108.63 x 95 in)	5,228 kg (11,500 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load (NG)	Standby Full Load (LP)
Level 0: Open Power Unit (dBA)	86.2	85.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.38	0.1
Liquid Propane	0.06	0.25

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

30-GC6NLT1

30 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby

Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	117	117	104	90	45	36
Natural Gas						
Ratings: kW/kVA	28/28	28/28	30/37.5	30/37.5	30/37.5	30/37.5
LP Gas						
Ratings: Amps	125	125	104	90	45	36
LP Gas						
Ratings: kW/kVA	30/30	30/30	30/37.5	30/37.5	30/37.5	30/37.5
skVA@30%						
Voltage Dip	48	85	92	92	123	122
Generator Model*	284PSL1708	283PSL1718	283PSL1707	283PSL1707	283PSL1707	284PSL1752
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 3.0 L Engine
 - 3.0 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	GM
Model	3.0L
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	3 (181)
Bore: cm (in)	10.2 (4)
Stroke: cm (in)	9.1 (3.6)
Compression Ratio	9.25:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	37.9 (50.8)
Maximum Power (LP): kWm (bhp)	38.4 (51.5)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	4.9 (1.3)
Engine Jacket Water Capacity: L (gal)	3.8 (1)
System Coolant Capacity: L (gal)	14.8 (3.9)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	3/4" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	10.2 (361)	4.5 (159)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	7.7 (270)	3.4 (120)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	5.4 (189)	2.4 (84)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	64.4 (17)
Heat Rejection to Coolant: kW (BTUM)	25.3 (1,436)
Heat Radiated to Ambient: kW (BTUM)	15.6 (886)

// Air Requirements

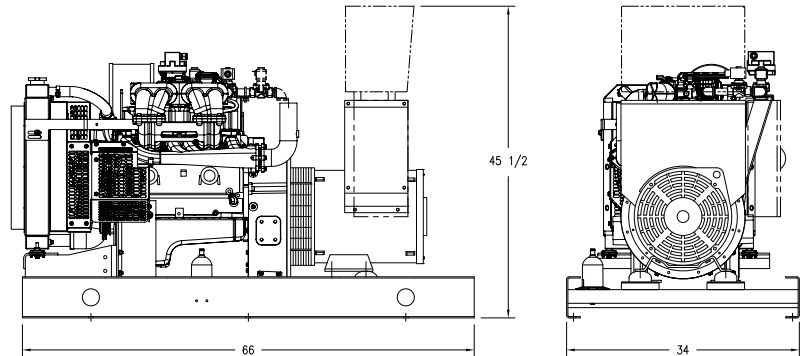
Aspirating: *m ³ /min (SCFM)	2.7 (94.3)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	81.6 (2,882.39)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	56.6 (1,998)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	704.4 (1,300)
Gas Volume at Stack Temp: m ³ /min (CFM)	8.6 (304.53)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	1,676 x 864 x 1,156 mm (66 x 34 x 45.5 in)	458 kg (1,010 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	C/F
WPE - No Sound Attenuation (dBA)	C/F
CQE (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	5.38	21.98
Liquid Propane	7.4	24.35

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/90 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

40-GC6NLT1

40 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby

Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	167	167	139	120	60	48
Natural Gas						
Ratings: kW/kVA	40/40	40/40	40/50	40/50	40/50	40/50
LP Gas						
Ratings: Amps	167	167	139	120	60	48
LP Gas						
Ratings: kW/kVA	40/40	40/40	40/50	40/50	40/50	40/50
skVA@30%						
Voltage Dip	128	116	125	125	167	92
Generator Model*	362CSL1604	361CSL1612	284PSL1742	284PSL1742	284PSL1742	361PSL1632
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 4.3 L Engine
 - 4.3 Liter Displacement
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	GM
Model	4.3L
Type	4-Cycle
Arrangement	6-V
Displacement: L (in ³)	4.3 (262)
Bore: cm (in)	10.2 (4)
Stroke: cm (in)	8.8 (3.5)
Compression Ratio	9.4:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	49.6 (66.5)
Maximum Power (LP): kWm (bhp)	53.2 (71.4)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	4.2 (1.1)
Engine Jacket Water Capacity: L (gal)	7.2 (1.9)
System Coolant Capacity: L (gal)	21.6 (5.7)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	3/4" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	13.9 (489)	6.1 (216)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	10.4 (368)	4.6 (163)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	7.3 (256)	3.2 (113)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	117.3 (31)
Heat Rejection to Coolant: kW (BTUM)	39 (2,220)
Heat Radiated to Ambient: kW (BTUM)	16.5 (938)

// Air Requirements

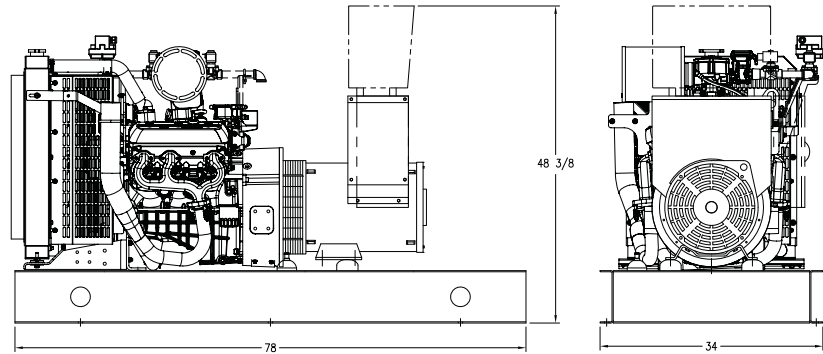
Aspirating: *m ³ /min (SCFM)	3.9 (136.5)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	211.4 (7,464)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	59.9 (2,114)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	704.4 (1,300)
Gas Volume at Stack Temp: m ³ /min (CFM)	12.5 (440.8)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	1,981 x 864 x 1,229 mm (78 x 34 x 48.38 in)	572 kg (1,260 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	C/F
WPE - No Sound Attenuation (dBA)	C/F
CQE (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	5.24	16.38
Liquid Propane	6.09	23.88

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/90 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

50-GC6NLT1

50 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby

Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	188	188	173	150	75	60
Natural Gas						
Ratings: kW/kVA	45/45	45/45	50/62.5	50/62.5	50/62.5	50/62.5
LP Gas						
Ratings: Amps	208	208	173	150	75	60
LP Gas						
Ratings: kW/kVA	50/50	50/50	50/62.5	50/62.5	50/62.5	50/62.5
skVA@30%						
Voltage Dip	127	118	200	200	266	138
Generator Model*	362CSL1606	361CSL1612	361CSL1602	361CSL1602	361CSL1602	361PSL1633
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 5.0 L Engine
 - 5.0 Liter Displacement
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

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 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	GM
Model	5.0L
Type	4-Cycle
Arrangement	8-V
Displacement: L (in ³)	5 (305)
Bore: cm (in)	9.5 (3.75)
Stroke: cm (in)	8.8 (3.48)
Compression Ratio	9.4:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	62.2 (83.4)
Maximum Power (LP): kWm (bhp)	65.8 (88.3)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	4.9 (1.3)
Engine Jacket Water Capacity: L (gal)	8.7 (2.3)
System Coolant Capacity: L (gal)	22.7 (6)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	17 (600)	7.5 (265)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	12.8 (452)	5.7 (200)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	9 (317)	4 (140)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	113.6 (30)
Heat Rejection to Coolant: kW (BTUM)	59.8 (3,400)
Heat Radiated to Ambient: kW (BTUM)	8.2 (466)

// Air Requirements

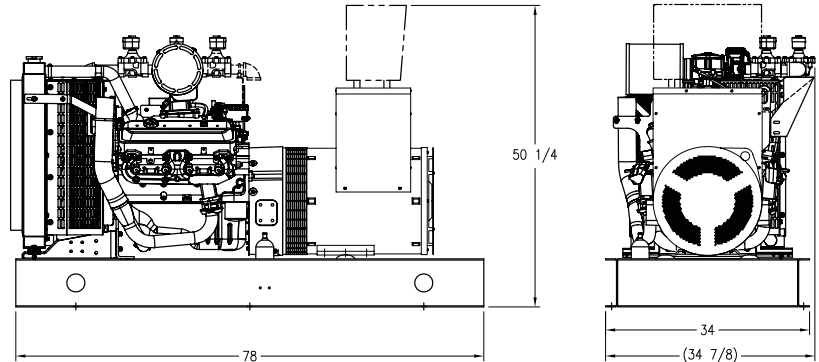
Aspirating: *m ³ /min (SCFM)	4.5 (158.9)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	209.4 (7,396)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	29.8 (1,051)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	704.4 (1,300)
Gas Volume at Stack Temp: m ³ /min (CFM)	14.5 (513)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	1,981 x 864 x 1,276 mm (78 x 34 x 50.25 in)	658 kg (1,450 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	C/F
WPE - No Sound Attenuation (dBA)	C/F
CQE (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	5.76	23.54
Liquid Propane	6.47	29.59

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/90 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

60-GC6NLT1

60 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby

Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas						
Ratings: Amps	229	229	208	180	90	72
Natural Gas						
Ratings: kW/kVA	55/55	55/55	60/75	60/75	60/75	60/75
LP Gas						
Ratings: Amps	250	250	208	180	90	72
LP Gas						
Ratings: kW/kVA	60/60	60/60	60/75	60/75	60/75	60/75
skVA@30%						
Voltage Dip	127	230	200	200	172	140
Generator Model*	362CSL1606	362CSL1615	361CSL1602	361CSL1602	361CSL1601	361PSL1633
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 5.7 L Engine
 - 5.7 Liter Displacement
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	GM
Model	5.7L
Type	4-Cycle
Arrangement	8-V
Displacement: L (in ³)	5.7 (350)
Bore: cm (in)	10.2 (4)
Stroke: cm (in)	8.8 (3.5)
Compression Ratio	9.4:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	78.1 (104.7)
Maximum Power (LP): kWm (bhp)	84.4 (113.2)
Speed Regulation	C/F
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	4.9 (1.3)
Engine Jacket Water Capacity: L (gal)	8.7 (2.3)
System Coolant Capacity: L (gal)	22.7 (6)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	20.3 (717)	9 (317)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	15.3 (541)	6.8 (239)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	10.6 (376)	4.7 (166)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	113.6 (30)
Heat Rejection to Coolant: kW (BTUM)	59.8 (3,400)
Heat Radiated to Ambient: kW (BTUM)	17.5 (993.2)

// Air Requirements

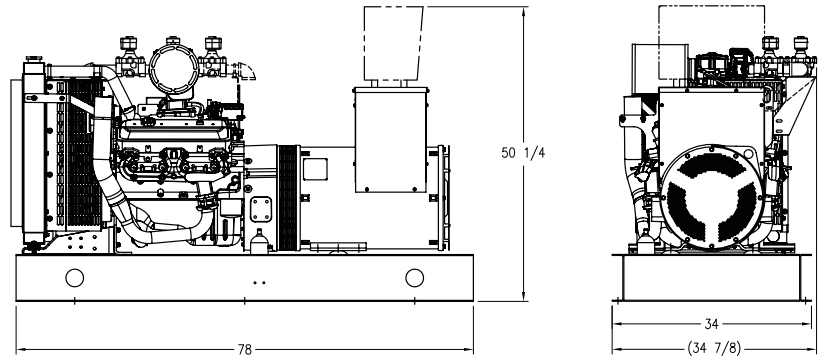
Aspirating: *m ³ /min (SCFM)	5.2 (182.3)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	209.4 (7,396)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat For a Max of 25 °F Rise: *m ³ /min (SCFM)	63.4 (2,240)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	704.4 (1,300)
Gas Volume at Stack Temp: m ³ /min (CFM)	16.7 (588.7)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
OPU	1,981 x 864 x 1,276 mm (78 x 34 x 50.25 in)	658 kg (1,450 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	C/F
WPE - No Sound Attenuation (dBA)	C/F
CQE (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	5.76	19.93
Liquid Propane	7.2	22.08

All units are in g/hp-hr.
Engine meets EPA 40 CFR Part 60/90 specifications.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

130 kWe / 60 Hz / Prime
208 - 600V

(Reference GS150-6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime (NG)	GP130N6SGA	GP130N6SDA	GP130N6SPA	GP130N6SJA	GP130N6SRA	GP130N6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas Ratings: Amps	542	542	421	391	195	156
Natural Gas Ratings: kW/kVA skVA@30%	130/130	130/130	130/162	130/162	130/162	130/162
Voltage Dip	265	305	339	339	451	370
Generator Model	432PSL6210	431PSL6226	431PSL6204	431PSL6204	431PSL6204	431PSL6242
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 8.1 L Turbo Engine Charge Air Cooling
 - 8.1 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	8.1L CAC
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	8.1 (492)
Bore: cm (in)	11.1 (4.37)
Stroke: cm (in)	13.9 (5.97)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power: kWm (bhp)	149 (199)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	27.5 (7.2)
Engine Jacket Water Capacity: L (gal)	22.7 (5)
System Coolant Capacity: L (gal)	240 (63)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	1 1/2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³)

	NG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	39.7 (1,400)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	30.7 (1,084)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	21.8 (769)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	240 (63)
Heat Rejection to Coolant: kW (BTUM)	164.4 (9,357)
Heat Radiated to Ambient: kW (BTUM)	65.2 (3,710)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	9.3 (317)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	428 (15,100)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	147 (5,175)

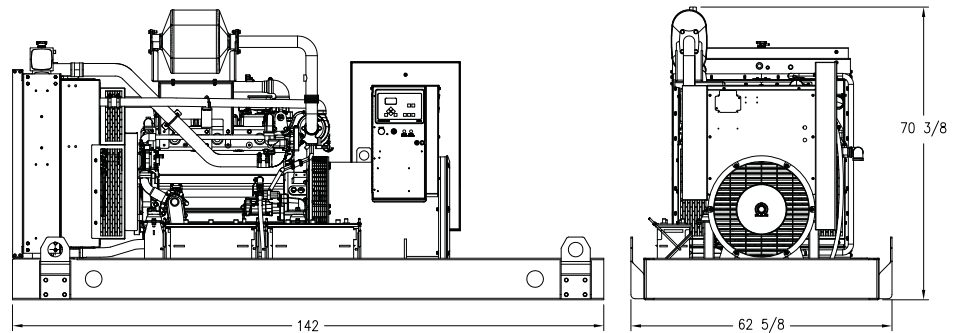
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	660 (1,220)
Gas Volume at Stack Temp: m ³ /min (CFM)	29.7 (1,050)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	3,607 x 1,591 x 1,788 mm (142 x 62.63 x 70.38 in)	2,562 kg (5,647 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load (NG)	Prime Full Load (LP)
Level 0: Open Power Unit (dBA)	81.7	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.63	0.13

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

175 kWe / 60 Hz / Prime
208 - 600V

(Reference GS200-6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime (NG)	GP175N6SGA	GP175N6SDA	GP175N6SPA	GP175N6SJA	GP175N6SRA	GP175N6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
Natural Gas Ratings: Amps	C/F	C/F	600	520	261	210
Natural Gas Ratings: kW/kVA skVA@30%	C/F	C/F	173/216	173/216	174/217	175/218
Voltage Dip	425	370	608	608	809	720
Generator Model	433CSL6216	432PSL6228	432CSL6210	432CSL6210	432CSL6210	432PSL6246
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 11.1 L Turbo Engine Charge Air Cooling
 - 11.1 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	11.1L CAC
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	11.1 (673)
Bore: cm (in)	12.3 (4.84)
Stroke: cm (in)	15.5 (6.1)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power: kWm (bhp)	203 (272)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	28.5 (8)
Engine Jacket Water Capacity: L (gal)	25 (5.5)
System Coolant Capacity: L (gal)	149 (32.8)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	2" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³)

	NG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	56.1 (1,980)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	42.5 (1,500)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	30.4 (1,075)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	310 (82)
Heat Rejection to Coolant: kW (BTUM)	194.6 (11,071)
Heat Radiated to Ambient: kW (BTUM)	40.4 (2,295)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	11.7 (400)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	631 (22,300)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	237 (8,365)

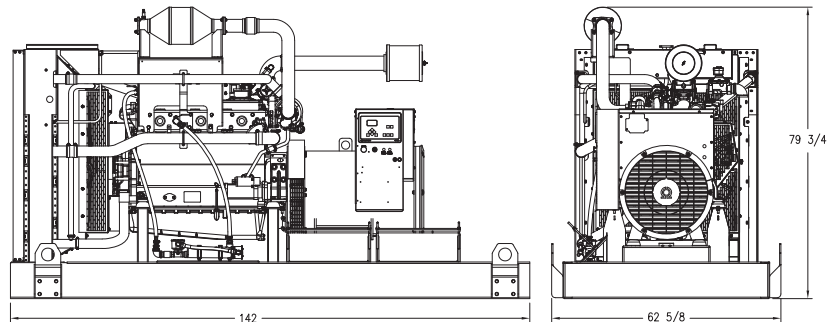
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	694 (1,281)
Gas Volume at Stack Temp: m ³ /min (CFM)	38.8 (1,371)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	3,607 x 1,435 x 2,026 mm (142 x 156.5 x 79.75 in)	3,096 kg (6,258 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load (NG)	Prime Full Load (LP)
Level 0: Open Power Unit (dBA)	86.3	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	2.24	0.26

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

235 kWe / 60 Hz / Prime
208 - 600V

(Reference GS260-6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime (NG)	GP235N6SGA	GP235N6SPA	GP235N6SJA	GP235N6SRA	GP235N6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas Ratings: Amps	958	815	707	353	283
Natural Gas Ratings: kW/kVA skVA@30%	230/230	235/293	235/293	235/293	235/293
Voltage Dip	520	608	608	809	740
Generator Model	572RSL4031	432PSL6210	432PSL6210	432PSL6210	432PSL6246
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 14.6 L Turbo Engine Charge Air Cooling
 - 14.6 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (with PMG only)
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator (Digital when PMG is Standard)
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	14.6L CAC
Type	4-Cycle
Arrangement	8-V
Displacement: L (in ³)	14.6 (892)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kW _m (bhp)	270 (302)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	38.1 (10.1)
Engine Jacket Water Capacity: L (gal)	43.2 (9.5)
System Coolant Capacity: L (gal)	227 (50)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³)

	NG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	78.2 (2,760)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	58 (2,050)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	40.8 (1,440)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	680 (180)
Heat Rejection to Coolant: kW (BTUM)	285 (16,189)
Heat Radiated to Ambient: kW (BTUM)	80.5 (4,580)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	15.6 (532)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	849 (30,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	293 (10,330)

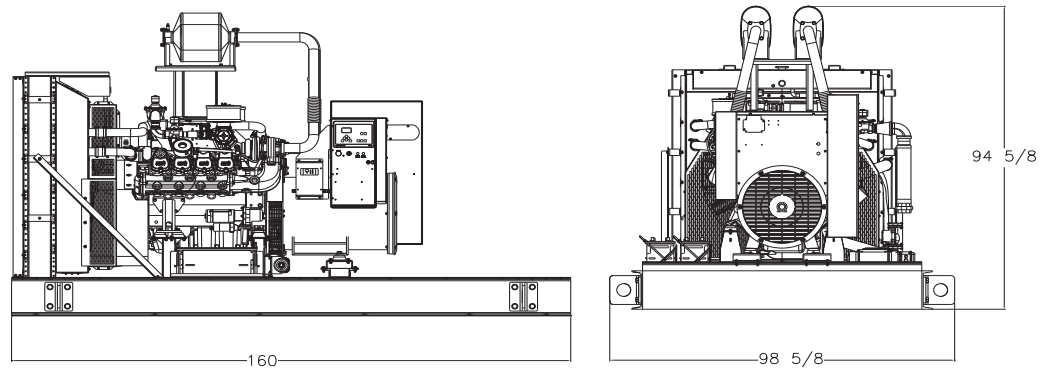
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	554 (1,030)
Gas Volume at Stack Temp: m ³ /min (CFM)	44.2 (1,560)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	4,064 x 2,506 x 2,404 mm (160 x 98.63 x 94.63 in)	4,055 kg (8,939 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load (NG)	Prime Full Load (LP)
Level 0: Open Power Unit (dBA)	83.1	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.22	0.06

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

300 kWe / 60 Hz / Prime
208 - 600V

(Reference GS350-6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime (NG)	GP300N6SGA	GP300N6SPA	GP300N6SJA	GP300N6SRA	GP300N6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas Ratings: Amps	1250	1041	902	451	361
Natural Gas Ratings: kW/kVA skVA@30%	300/300	300/375	300/375	300/375	300/375
Voltage Dip	700	959	959	1277	1100
Generator Model	573RSL4035	433CSL6220	433CSL6220	433CSL6220	433PSL6248
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 18.3 L Turbo Engine Charge Air Cooling
 - 18.3 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (with PMG only)
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Solid State, Volts-per-hertz Regulator (Digital when PMG is Standard)
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	18.3L CAC
Type	4-Cycle
Arrangement	10-V
Displacement: L (in ³)	18.3 (1,115)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kW _m (bhp)	340 (456)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	42.1 (11.1)
Engine Jacket Water Capacity: L (gal)	50 (11)
System Coolant Capacity: L (gal)	289 (63.5)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³)

	NG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	92 (3,247.5)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	71.5 (2,524.8)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	51.9 (1,831.7)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	660 (174)
Heat Rejection to Coolant: kW (BTUM)	365 (20,784)
Heat Radiated to Ambient: kW (BTUM)	88.5 (5,030)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	19.4 (664)
Air Flow Required for Rad.	
Cooled Unit: **m ³ /min (SCFM)	1,019 (36,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	321 (11,350)

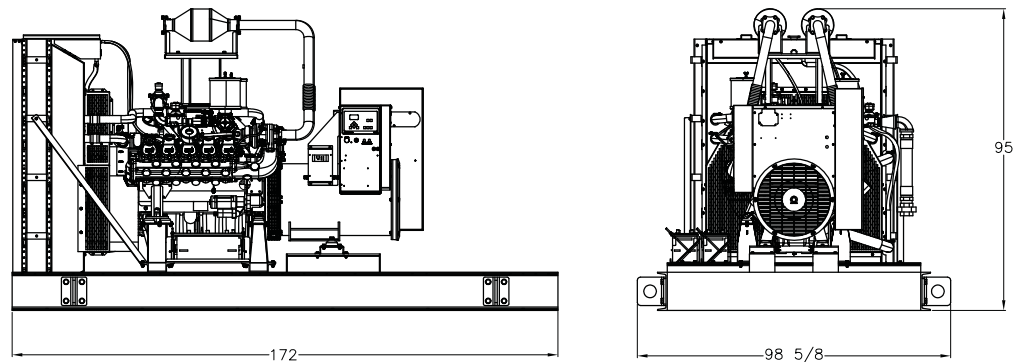
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	607 (1,125)
Gas Volume at Stack Temp: m ³ /min (CFM)	58.6 (2,070)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	4,369 x 2,506 x 2,413 mm (172 x 98.63 x 95 in)	4,741 kg (10,452 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load (NG)	Prime Full Load (LP)
Level 0: Open Power Unit (dBA)	84.7	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.59	0.21

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO-8528/1, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

GAS ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

355 kWe / 60 Hz / Prime
208 - 600V

(Reference GS400-6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime (NG)	GP355N6SGA	GP355N6SPA	GP355N6SJA	GP355N6SRA	GP355N6SNA
Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas					
Ratings: Amps	1458	1232	1068	534	427
Natural Gas					
Ratings: kW/kVA skVA@30%	350/350	355/443	355/443	355/443	355/443
Voltage Dip	760	1500	1500	1500	1450
Generator Model	574RSL4037	572RSL4029	572RSL4029	572RSL4029	572RSS4272
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 21.9 L Turbo Engine Charge Air Cooling
 - 21.9 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self Ventilated and Drip-proof
 Superior Voltage Waveform
 Digital, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load

Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	Doosan
Model	21.9L CAC
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	21.9 (1,338)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kW _m (bhp)	410 (550)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	47.1 (12.4)
Engine Jacket Water Capacity: L (gal)	52.3 (11.5)
System Coolant Capacity: L (gal)	291 (64)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

// Fuel Consumption (NG-1000 BTU/ft³)

	NG
At 100% of Power Rating: m ³ /hr (ft ³ /hr)	109.3 (3,861)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	84.1 (2,970)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	61.7 (2,178)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	660 (174)
Heat Rejection to Coolant: kW (BTUM)	453 (25,760)
Heat Radiated to Ambient: kW (BTUM)	118.2 (6,720)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	24.6 (841)
Air Flow Required for Rad. Cooled Unit: **m ³ /min (SCFM)	1,133 (40,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	429 (15,160)

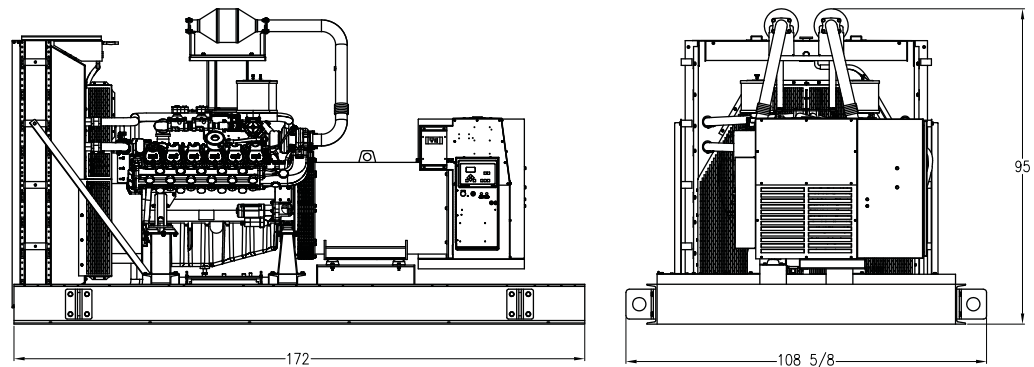
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	582 (1,080)
Gas Volume at Stack Temp: m ³ /min (CFM)	72.2 (2,550)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry)
Open Power Unit (OPU)	4,369 x 2,760 x 2,413 mm (172 x 108.63 x 95 in)	5,228 kg (11,500 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load (NG)	Prime Full Load (LP)
Level 0: Open Power Unit (dBA)	85.5	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

Fuel Type	THC + NO _x	CO
Natural Gas	0.38	0.1

All units are in g/hp-hr and are EPA D2 cycle values.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET TURBOCHARGED

30 kWe / 60 Hz / Standby
208 - 600V

(Reference DP27D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS30D6SGT	DS30D6SDT	DS30D6SPT	DS30D6SJT	DS30D6SRT	DS30D6SNT
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	30	30	30	30	30	30
kVA	30	30	37.5	37.5	37.5	37.5
AMPS	125	125	104	90	45	36
skVA@30%						
Voltage Dip	48	85	92	92	123	122
Generator Model	284PSL1708	283PSL1718	283PSL1707	283PSL1707	283PSL1707	284PSL1752
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 4 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024TF281 Diesel Engine
 - 2.4 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG 1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024TF281
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	20.5:1
Rated RPM	1,800
Engine Governor	Electric Isochronous
Maximum Power: kWm (bhp)	36 (49)
Speed Regulation	±1%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	8 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.675)
System Coolant Capacity: L (gal)	8.7 (2.29)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	100 (26.4)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	10.6 (2.8)
At 75% of Power Rating: L/hr (gal/hr)	8 (2.1)
At 50% of Power Rating: L/hr (gal/hr)	5.3 (1.4)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	91 (24)
Heat Rejection to Coolant: kW (BTUM)	25 (1,412)
Heat Radiated to Ambient: kW (BTUM)	6 (344)

// Air Requirements

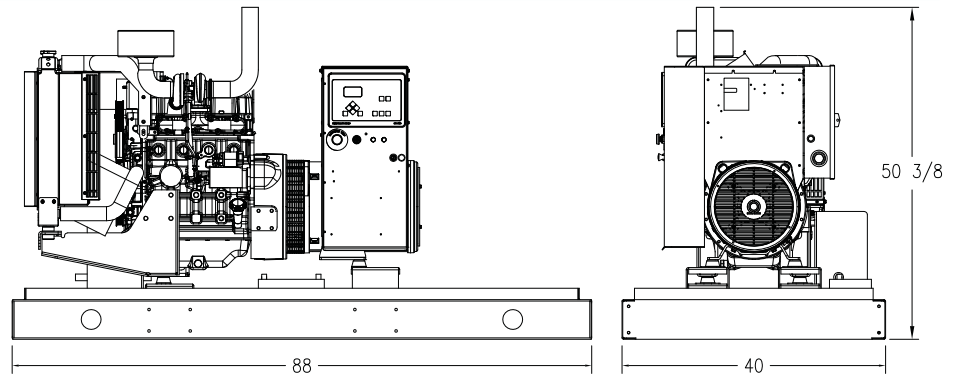
	STANDBY
Aspirating: *m ³ /min (SCFM)	3 (106)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	62 (2,199)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	22 (770)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	552 (1,026)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	8 (283)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,279 mm (88 x 40 x 50.375 in)	679 kg (1,497 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	71.7

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.9	0.0	0.12

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

35 kWe / 60 Hz / Standby
208 - 600V

(Reference DP35D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS35D6SGA	DS35D6SDA	DS35D6SPA	DS35D6SJA	DS35D6SRA	DS35D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	35	35	35	35	35	35
kVA	35	35	43.75	43.75	43.75	43.75
AMPS	146	146	121	105	53	42
skVA@30%						
Voltage Dip	62	102	106	106	141	123
Generator Model	361CSL1601	284PSL1750	284PSL1708	284PSL1708	284PSL1708	284PSL1752
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kW _m (bhp)	60 (80)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	12.1 (3.2)
At 75% of Power Rating: L/hr (gal/hr)	8.3 (2.2)
At 50% of Power Rating: L/hr (gal/hr)	4.5 (1.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	19.8 (1,127)
Heat Rejection to Air to Air: kW (BTUM)	6.2 (350)
Heat Radiated to Ambient: kW (BTUM)	5.6 (318)

// Air Requirements

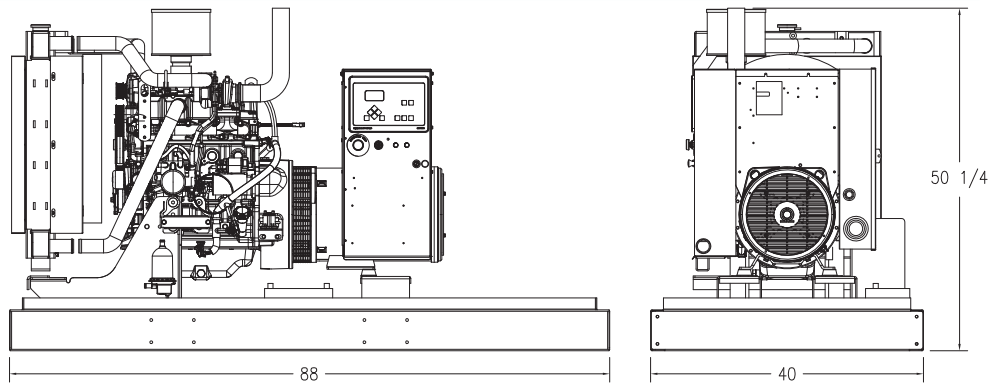
	STANDBY
Aspirating: *m ³ /min (SCFM)	3.6 (126)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	20 (716)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	531 (988)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	9.2 (326)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System Open Power Unit (OPU)	Dimensions (L x W x H) 2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	Weight (dry/less tank) 716 kg (1,579 lb)
--	--	--

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type Level 0: Open Power Unit (dBA)	Standby Full Load 79.5
--	----------------------------------

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC 3.2	CO 0.8	PM 0.15
-------------------------------------	------------------	-------------------

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

40 kWe / 60 Hz / Standby
208 - 600V

(Reference DP40D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS40D6SGA	DS40D6SDA	DS40D6SPA	DS40D6SJA	DS40D6SRA	DS40D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	40	40	40	40	40	40
kVA	40	40	50	50	50	50
AMPS	167	167	139	120	60	48
skVA@30%						
Voltage Dip	63	102	125	125	167	92
Generator Model	361CSL1601	284PSL1750	284PSL1742	284PSL1742	284PSL1742	361PSL1632
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
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 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kW _m (bhp)	60 (80)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	14 (3.7)
At 75% of Power Rating: L/hr (gal/hr)	10.6 (2.8)
At 50% of Power Rating: L/hr (gal/hr)	7.2 (1.9)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	23.3 (1,326)
Heat Rejection to Air to Air: kW (BTUM)	7.2 (412)
Heat Radiated to Ambient: kW (BTUM)	5.9 (336)

// Air Requirements

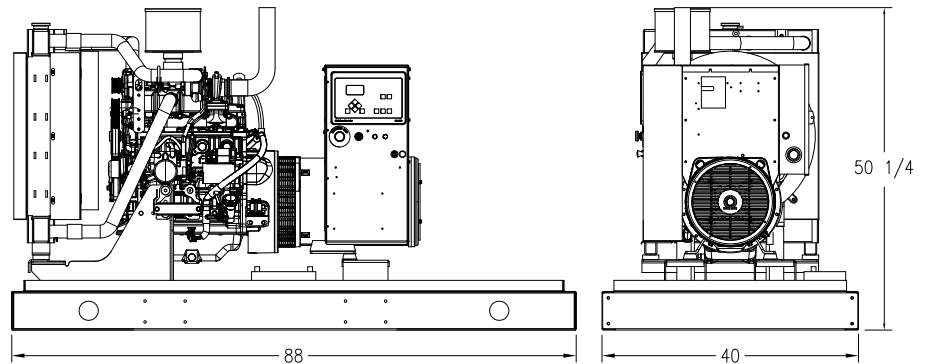
	STANDBY
Aspirating: *m ³ /min (SCFM)	3.8 (133)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	22 (757)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	542 (1,008)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	10 (354)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	742 kg (1,636 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	79.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
3.2	0.8	0.15

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

50 kWe / 60 Hz / Standby
208 - 600V

(Reference DP45D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS50D6SGA	DS50D6SDA	DS50D6SPA	DS50D6SJA	DS50D6SRA	DS50D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	50	50	50	50	50	50
kVA	50	50	62.5	62.5	62.5	62.5
AMPS	208	208	173	150	75	60
skVA@30%						
Voltage Dip	127	130	129	129	172	138
Generator Model	362CSL1606	361CSL1613	361CSL1601	361CSL1601	361CSL1601	361PSL1633
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kW _m (bhp)	60 (80)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	16.3 (4.3)
At 75% of Power Rating: L/hr (gal/hr)	12.1 (3.2)
At 50% of Power Rating: L/hr (gal/hr)	8.3 (2.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	34.9 (1,988)
Heat Rejection to Air to Air: kW (BTUM)	10.7 (608)
Heat Radiated to Ambient: kW (BTUM)	9 (510)

// Air Requirements

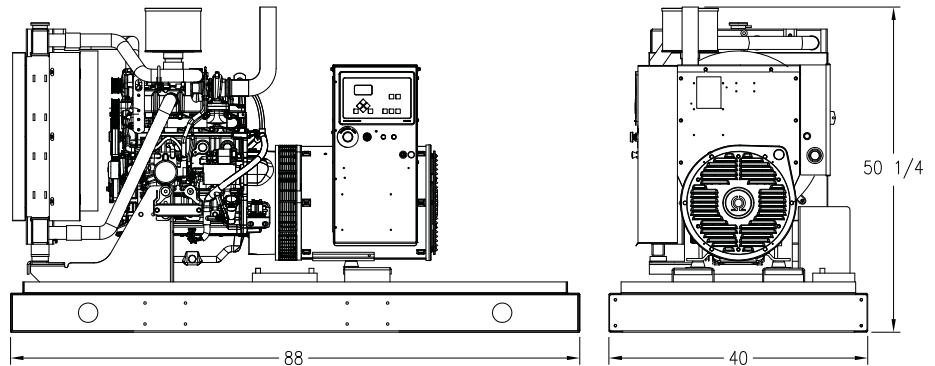
	STANDBY
Aspirating: *m ³ /min (SCFM)	4.3 (151)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	33 (1,150)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	572 (1,062)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	11.9 (419)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	842 kg (1,857 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	79.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
3.2	0.8	0.15

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

60 kWe / 60 Hz / Standby
208 - 600V

(Reference DP51D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS60D6SGA	DS60D6SDA	DS60D6SPA	DS60D6SJA	DS60D6SRA	DS60D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	60	60	60	60	60	60
kVA	60	60	75	75	75	75
AMPS	250	250	208	180	90	72
skVA@30%						
Voltage Dip	119	130	200	200	266	136
Generator Model	362CSL1604	361CSL1613	361CSL1602	361CSL1602	361CSL1602	361PSL1633
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 5030HF285 Diesel Engine
 - 3.0 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ± 1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	5030HF285
Type	4-Cycle
Arrangement	5-Inline
Displacement: L (in ³)	3.05 (186)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	72 (96)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	11.2 (2.96)
Engine Jacket Water Capacity: L (gal)	2.9 (0.78)
System Coolant Capacity: L (gal)	15.4 (4.08)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	18.9 (5)
At 75% of Power Rating: L/hr (gal/hr)	14.4 (3.8)
At 50% of Power Rating: L/hr (gal/hr)	9.5 (2.5)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	45.5 (2,590)
Heat Rejection to Air to Air: kW (BTUM)	12.7 (723)
Heat Radiated to Ambient: kW (BTUM)	12.8 (728)

// Air Requirements

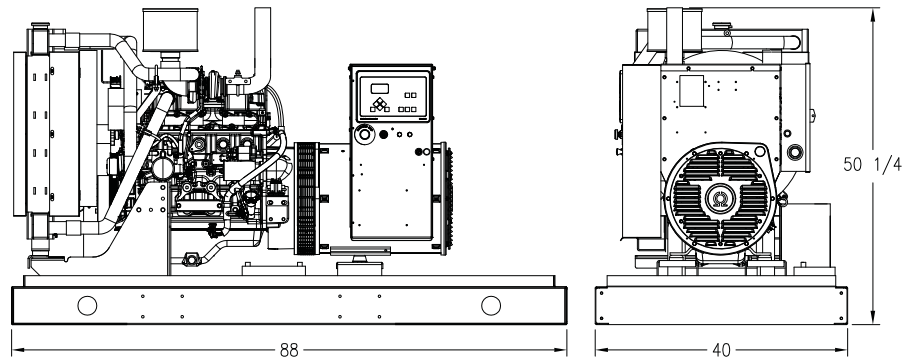
	STANDBY
Aspirating: *m ³ /min (SCFM)	5.3 (186)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	158 (5,570)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	47 (1,642)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	522 (972)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	13.7 (484)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	883 kg (1,947 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	79.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
3.4	0.8	0.15

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

80 kWe / 60 Hz / Standby
208 - 600V

(Reference DP80D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS80D6SGA	DS80D6SDA	DS80D6SPA	DS80D6SJA	DS80D6SRA	DS80D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	80	80	80	80	80	80
kVA	80	80	100	100	100	100
AMPS	333	333	278	241	120	96
skVA@30%						
Voltage Dip	157	310	216	216	288	235
Generator Model	363CSL1607	363CSL1617	362CSL1604	362CSL1604	362CSL1604	362PSL1635
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.5 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	118 (158)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	12 (3.2)
Engine Jacket Water Capacity: L (gal)	12.5 (3.3)
System Coolant Capacity: L (gal)	20.1 (5.3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	74.6 (19.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	23.1 (6.1)
At 75% of Power Rating: L/hr (gal/hr)	18.5 (4.9)
At 50% of Power Rating: L/hr (gal/hr)	13.2 (3.5)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	56 (3,190)
Heat Rejection to Air to Air: kW (BTUM)	17.6 (1,002)
Heat Radiated to Ambient: kW (BTUM)	10.5 (596)

// Air Requirements

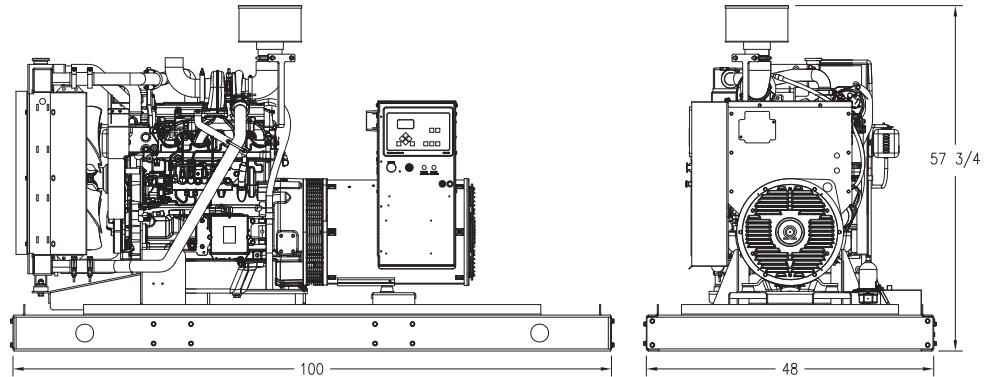
	STANDBY
Aspirating: *m ³ /min (SCFM)	7.7 (273)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	187 (6,587)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	38 (1,343)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	560 (1,040)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	21.2 (750)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,467 mm (100 x 48 x 57.75 in)	867 kg (1,912 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	83.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

100 kWe / 60 Hz / Standby
208 - 600V

(Reference DP90D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS100D6SGA	DS100D6SDA	DS100D6SPA	DS100D6SJA	DS100D6SRA	DS100D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	100	100	100	100	100	100
kVA	100	100	125	125	125	125
AMPS	417	417	347	301	150	120
skVA@30%						
Voltage Dip	136	311	258	258	344	270
Generator Model	431CSL6204	363CSL1617	362CSL1606	362CSL1606	362CSL1606	362PSL1636
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.5 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ± 1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (8)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	118 (158)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	12 (3.2)
Engine Jacket Water Capacity: L (gal)	12.5 (3.3)
System Coolant Capacity: L (gal)	20.1 (5.3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	74.6 (19.7)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	31 (8.2)
At 75% of Power Rating: L/hr (gal/hr)	25 (6.6)
At 50% of Power Rating: L/hr (gal/hr)	17.8 (4.7)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	62 (3,544)
Heat Rejection to Air to Air: kW (BTUM)	19.8 (1,127)
Heat Radiated to Ambient: kW (BTUM)	16.2 (919)

// Air Requirements

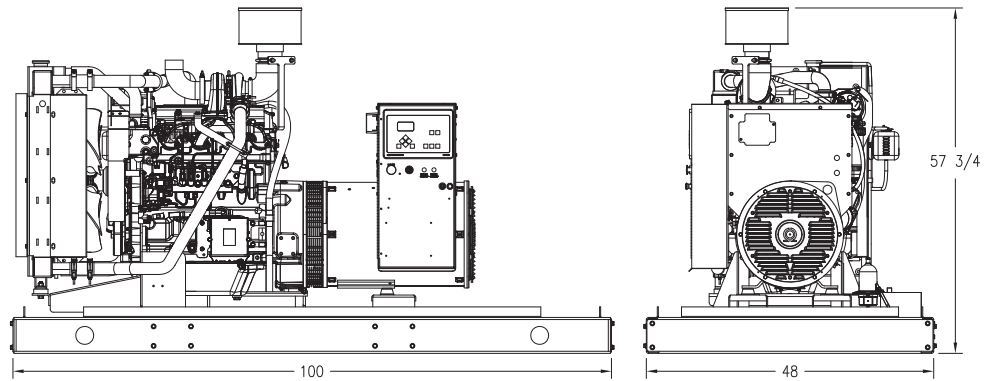
	STANDBY
Aspirating: *m ³ /min (SCFM)	8.2 (288)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	187 (6,587)
Remote Cooled Applications;	
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	59 (2,074)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	580 (1,076)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	22.8 (805)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,473 mm (100 x 48 x 58 in)	908 kg (2,002 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	83.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

125 kWe / 60 Hz / Standby
208 - 600V

(Reference DP111D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS125D6SGA	DS125D6SDA	DS125D6SPA	DS125D6SJA	DS125D6SRA	DS125D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	125	125	125	125	125	125
kVA	125	125	156.25	156.25	156.25	156.25
AMPS	521	521	434	376	188	150
skVA@30%						
Voltage Dip	187	192	323	323	430	333
Generator Model	431PSL6206	431PSL6224	363CSL1607	363CSL1607	363CSL1607	363PSL1658
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.58 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG 1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	147 (197)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	13 (3.4)
Engine Jacket Water Capacity: L (gal)	8.5 (2.2)
System Coolant Capacity: L (gal)	24 (6.2)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	90.1 (23.8)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	37.3 (9.9)
At 75% of Power Rating: L/hr (gal/hr)	28.8 (7.6)
At 50% of Power Rating: L/hr (gal/hr)	19.3 (5.1)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	72.1 (4,098)
Heat Rejection to Air to Air: kW (BTUM)	26.5 (1,508)
Heat Radiated to Ambient: kW (BTUM)	19.9 (1,134)

// Air Requirements

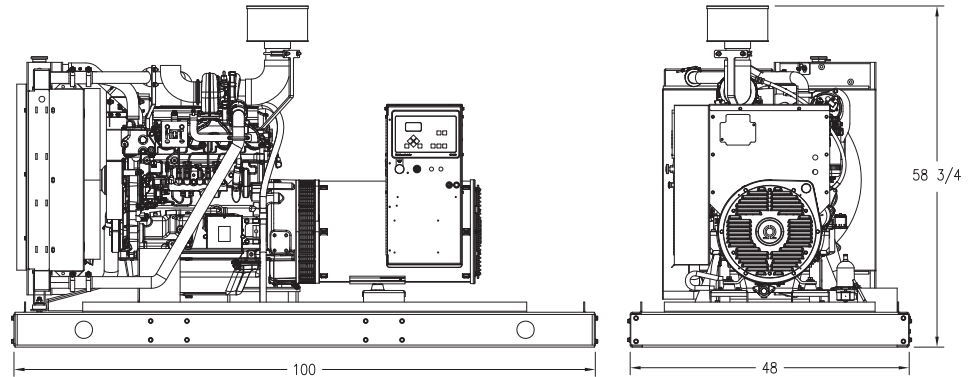
	STANDBY
Aspirating: *m ³ /min (SCFM)	9.7 (341)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	433 (15,303)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	71 (2,520)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	580 (1,076)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	27 (953)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,499 mm (100 x 48 x 59 in)	971 kg (2,140 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	86.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

150 kW_e / 60 Hz / Standby
208 - 600V

(Reference DP135D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS150D6SGA	DS150D6SDA	DS150D6SPA	DS150D6SJA	DS150D6SRA	DS150D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	150	150	150	150	150	150
kVA	150	150	187.5	187.5	187.5	187.5
AMPS	625	625	520	451	226	180
skVA@30%						
Voltage Dip	182	195	296	296	394	315
Generator Model	431CSL6208	431PSL6224	431CSL6202	431CSL6202	431CSL6202	431PSL6240
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6068HF285 Diesel Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	6068HF285
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	177 (237)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	20 (5.28)
Engine Jacket Water Capacity: L (gal)	12.3 (3.25)
System Coolant Capacity: L (gal)	22.7 (6)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	107.2 (28.3)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	44.7 (11.8)
At 75% of Power Rating: L/hr (gal/hr)	34.8 (9.2)
At 50% of Power Rating: L/hr (gal/hr)	25.4 (6.7)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	93.5 (5,324)
Heat Rejection to Air to Air: kW (BTUM)	32 (1,821)
Heat Radiated to Ambient: kW (BTUM)	25.7 (1,461)

// Air Requirements

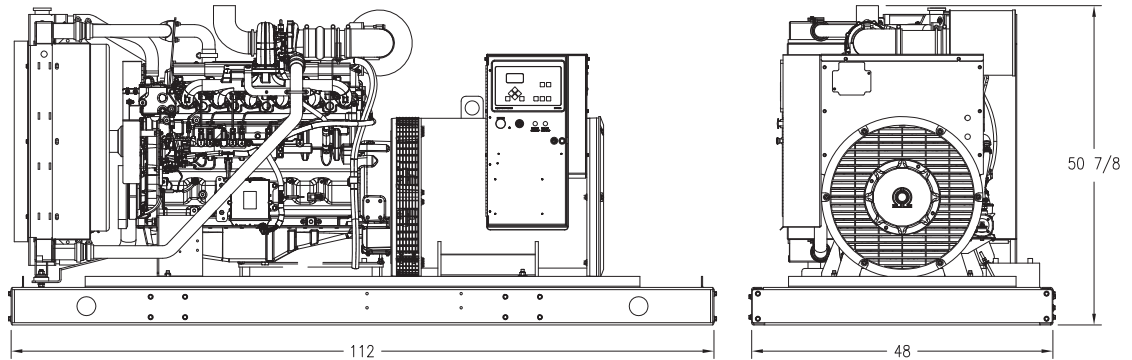
	STANDBY
Aspirating: *m ³ /min (SCFM)	13.6 (480)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	304 (10,732)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	94 (3,295)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	505 (941)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	34 (1,201)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,845 x 1,219 x 1,283 mm (112 x 48 x 50.5 in)	1,592 kg (3,510 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	85.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.6	0.8	0.09

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

180 kWe / 60 Hz / Standby
208 - 600V

(Reference DP180D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS180D6SGA	DS180D6SDA	DS180D6SPA	DS180D6SJA	DS180D6SRA	DS180D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	180	180	180	180	180	180
kVA	180	180	225	225	225	225
AMPS	750	750	625	541	271	217
skVA@30%						
Voltage Dip	267	370	433	433	451	510
Generator Model	432CSL6210	432PSL6228	431CSL6206	431CSL6206	431CSL6204	431PSL6243
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6068HFG85 Diesel Engine
 - 6.8 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	6068HFG85
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	10.6 (4.2)
Stroke: cm (in)	12.7 (5)
Compression Ratio	17:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	235 (315)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	32.2 (8.5)
Engine Jacket Water Capacity: L (gal)	11.9 (3.3)
System Coolant Capacity: L (gal)	29.3 (7.75)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	93 (24.5)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	51.9 (13.5)
At 75% of Power Rating: L/hr (gal/hr)	40.5 (10.7)
At 50% of Power Rating: L/hr (gal/hr)	27.6 (7.3)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	265 (70)
Heat Rejection to Coolant: kW (BTUM)	83.7 (4,766)
Heat Rejection to Air to Air: kW (BTUM)	40 (2,298)
Heat Radiated to Ambient: kW (BTUM)	24.2 (1,378)

// Air Requirements

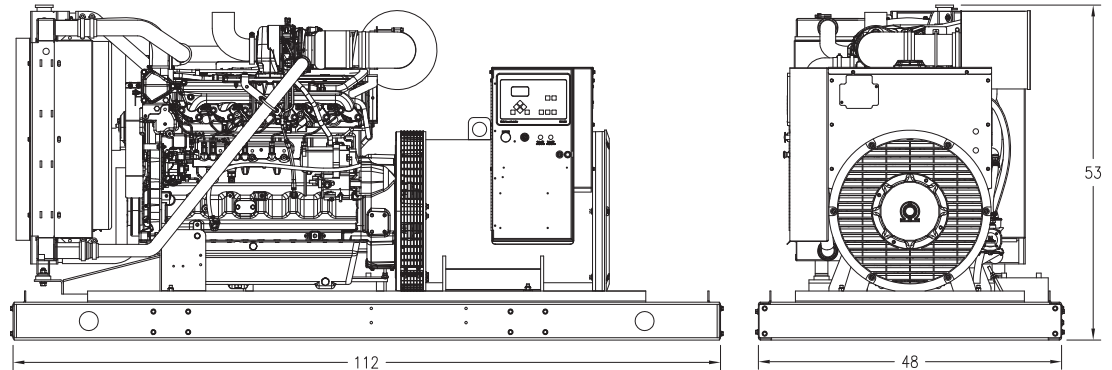
	STANDBY
Aspirating: *m ³ /min (SCFM)	14.7 (520)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	412 (14,537)
Remote Cooled Applications;	
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	89 (3,108)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	528 (982)
Gas Volume at Stack Temp: m ³ /min (CFM)	38.8 (1,371)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,845 x 1,219 x 1,346 mm (112 x 48 x 53 in)	1,720 kg (3,755 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	87.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.8	0.4	0.04

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

200 kWe / 60 Hz / Standby
208 - 600V



SYSTEM RATINGS

Standby	DS200D6SGA	DS200D6SDA	DS200D6SPA	DS200D6SJA	DS200D6SRA	DS200D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	200	200	200	200	200	200
kVA	200	200	250	250	250	250
AMPS	833	833	694	601	301	241
skVA@30%						
Voltage Dip	265	370	433	433	577	510
Generator Model	432CSL6210	432PSL6228	431CSL6206	431CSL6206	431CSL6206	431PSL6243
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6068HFG85 Diesel Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	6068HFG85
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	10.6 (4.2)
Stroke: cm (in)	12.7 (5)
Compression Ratio	17:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	235 (315)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	32.2 (8.5)
Engine Jacket Water Capacity: L (gal)	11.9 (3.3)
System Coolant Capacity: L (gal)	29.3 (7.75)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	93 (24.5)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	58.6 (15.5)
At 75% of Power Rating: L/hr (gal/hr)	42.9 (11.3)
At 50% of Power Rating: L/hr (gal/hr)	30 (7.9)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	265 (70)
Heat Rejection to Coolant: kW (BTUM)	94.9 (5,404)
Heat Rejection to Air to Air: kW (BTUM)	57 (3,264)
Heat Radiated to Ambient: kW (BTUM)	30 (1,703)

// Air Requirements

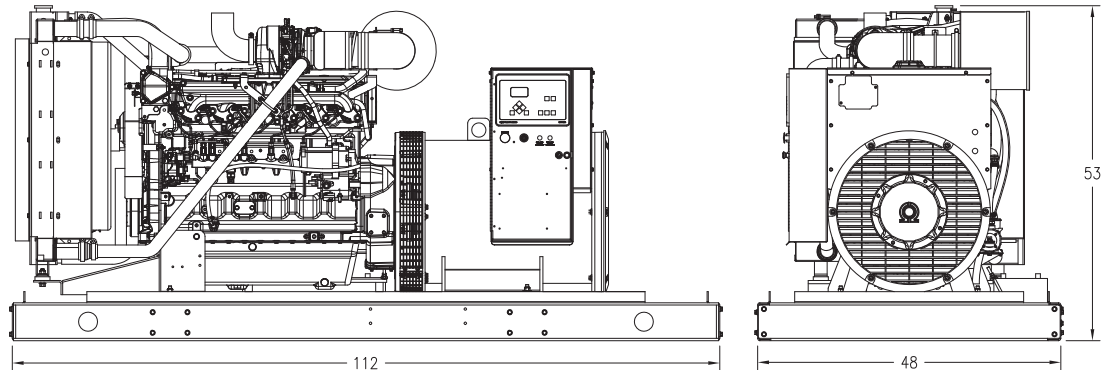
	STANDBY
Aspirating: *m ³ /min (SCFM)	17.5 (619)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	412 (14,537)
Remote Cooled Applications;	
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	109 (3,842)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	485 (905)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	42.9 (1,514)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,845 x 1,219 x 1,346 mm (112 x 48 x 53 in)	1,751 kg (3,860 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	87.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
2.8	0.4	0.04

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

230 kWe / 60 Hz / Standby
208 - 600V

(Reference DP210D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS230D6SPA	DS230D6SJA	DS230D6SVA	DS230D6SWA	DS230D6SRA	DS230D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	230	230	230	230	230	230
kVA	287	287	287	287	287	287
AMPS	798	692	437	377	346	277
skVA@30%						
Voltage Dip	608	608	430	580	809	510
Generator Model	432CSL6210	432CSL6210	432CSL6210	432CSL6210	432CSL6210	431PSL6243
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G70S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	312 (418)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	66 (17.5)
At 75% of Power Rating: L/hr (gal/hr)	54 (14.2)
At 50% of Power Rating: L/hr (gal/hr)	39 (10.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	143 (8,132)
Heat Rejection to After Cooler: kW (BTUM)	84 (4,777)
Heat Radiated to Ambient: kW (BTUM)	27.5 (1,564)

// Air Requirements

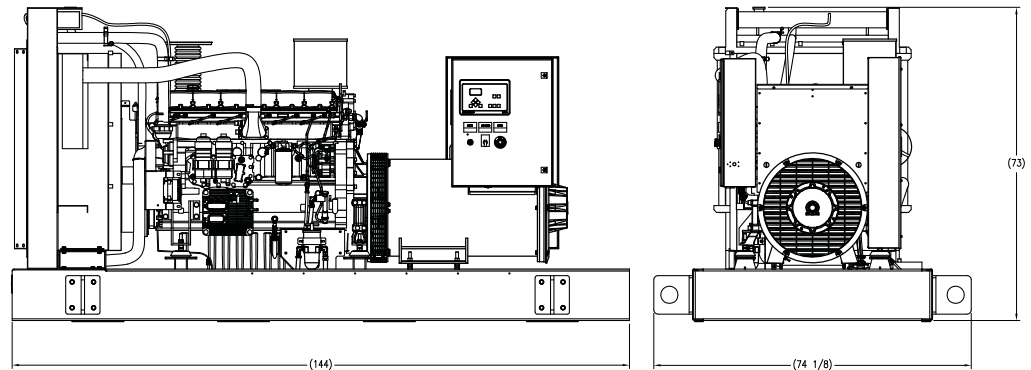
	STANDBY
Aspirating: *m ³ /min (SCFM)	30 (1,059)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	99.9 (3,527)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	430 (806)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

86.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

250 kWe / 60 Hz / Standby
208 - 600V

(Reference DP230D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS250D6SPA	DS250D6SJA	DS250D6SVA	DS250D6SWA	DS250D6SRA	DS250D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	250	250	250	250	250	250
kVA	312	312	312	312	312	312
AMPS	867	752	475	410	376	301
skVA@30%						
Voltage Dip	608	608	430	580	809	720
Generator Model	432CSL6210	432CSL6210	432CSL6210	432CSL6210	432CSL6210	432PSL6246
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	6 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110
 - Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G70S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kW _m (bhp)	312 (418)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	70 (18.5)
At 75% of Power Rating: L/hr (gal/hr)	57 (15.2)
At 50% of Power Rating: L/hr (gal/hr)	42 (11)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	143 (8,132)
Heat Rejection to After Cooler: kW (BTUM)	84 (4,777)
Heat Radiated to Ambient: kW (BTUM)	30.2 (1,717)

// Air Requirements

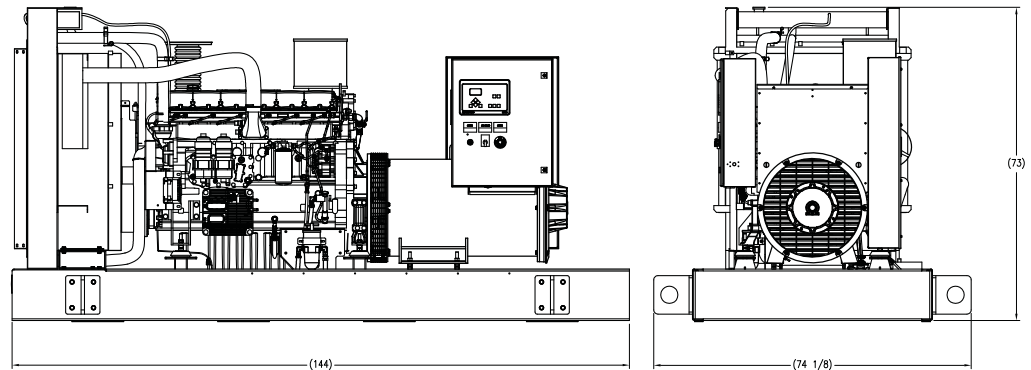
	STANDBY
Aspirating: *m ³ /min (SCFM)	30 (1,059)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	109.7 (3,873)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	430 (806)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

86.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

275 kWe / 60 Hz / Standby
208 - 600V

(Reference DP250D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS275D6SPA	DS275D6SJA	DS275D6SVA	DS275D6SWA	DS275D6SRA	DS275D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	275	275	275	275	275	275
kVA	343	343	343	343	343	343
AMPS	954	827	522	451	413	331
skVA@30%						
Voltage Dip	930	930	640	860	809	720
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	432CSL6210	432PSL6246
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G70S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	312 (418)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	74 (19.7)
At 75% of Power Rating: L/hr (gal/hr)	60 (15.9)
At 50% of Power Rating: L/hr (gal/hr)	46 (12.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	143 (8,132)
Heat Rejection to After Cooler: kW (BTUM)	84 (4,777)
Heat Radiated to Ambient: kW (BTUM)	34.1 (1,939)

// Air Requirements

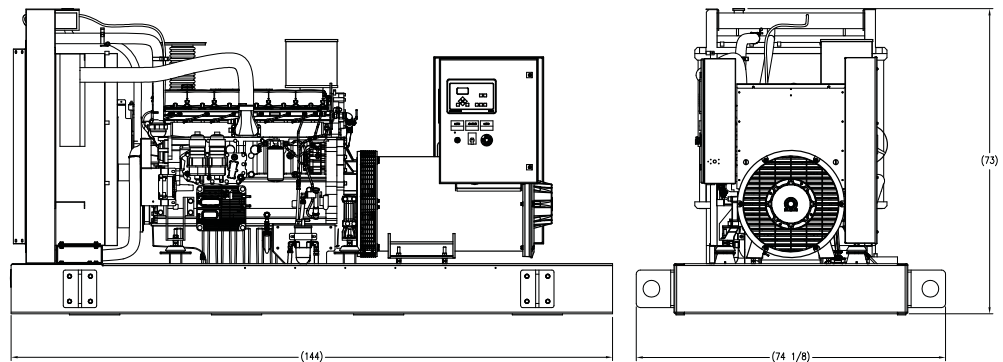
	STANDBY
Aspirating: *m ³ /min (SCFM)	30 (1,059.4)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	123.8 (4,374)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	430 (806)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542.7)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

86.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

300 kWe / 60 Hz / Standby
208 - 600V

(Reference DP275D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS300D6SPA	DS300D6SJA	DS300D6SVA	DS300D6SWA	DS300D6SRA	DS300D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	300	300	300	300	300	300
kVA	375	375	375	375	375	375
AMPS	1041	902	570	492	451	361
skVA@30%						
Voltage Dip	930	930	640	860	820	720
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	432CSL6212	432PSL6246
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
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 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
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Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
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 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G80S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	343 (460)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	82 (21.6)
At 75% of Power Rating: L/hr (gal/hr)	66 (17.5)
At 50% of Power Rating: L/hr (gal/hr)	51 (15.4)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	154 (8,758)
Heat Rejection to After Cooler: kW (BTUM)	90 (5,118)
Heat Radiated to Ambient: kW (BTUM)	36.9 (2,099)

// Air Requirements

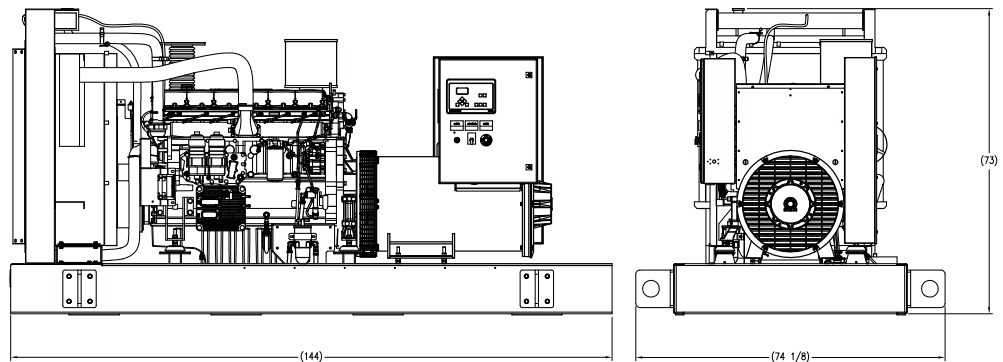
	STANDBY
Aspirating: *m ³ /min (SCFM)	30 (1,059.4)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	134.0 (4,733)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	440 (824)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542.7)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

87.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.16

CO

0.5

PM

0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

350 kWe / 60 Hz / Standby
208 - 600V

(Reference DP325D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS350D6SPA	DS350D6SJA	DS350D6SVA	DS350D6SWA	DS350D6SRA	DS350D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	350	350	350	350	350	350
kVA	438	438	438	438	438	438
AMPS	1214	1052	665	574	526	421
skVA@30%						
Voltage Dip	930	930	635	850	1238	1100
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	433CSL6216	433PSL6248
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110
 - Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 8V1600 Diesel Engine
 - 14.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation (570 frame)
 ±1% Voltage Regulation (430 frame)
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	8V1600G70S
Type	4-Cycle
Arrangement	8-V
Displacement: L (Cu In)	14 (854)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	408 (547)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	80.3 (21.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	99 (26.1)
At 75% of Power Rating: L/hr (gal/hr)	81 (21.3)
At 50% of Power Rating: L/hr (gal/hr)	60 (15.8)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	362 (95)
Heat Rejection to Coolant: kW (BTUM)	205 (11,658)
Heat Rejection to After Cooler: kW (BTUM)	120 (6,824)
Heat Radiated to Ambient: kW (BTUM)	44.3 (2,519)

// Air Requirements

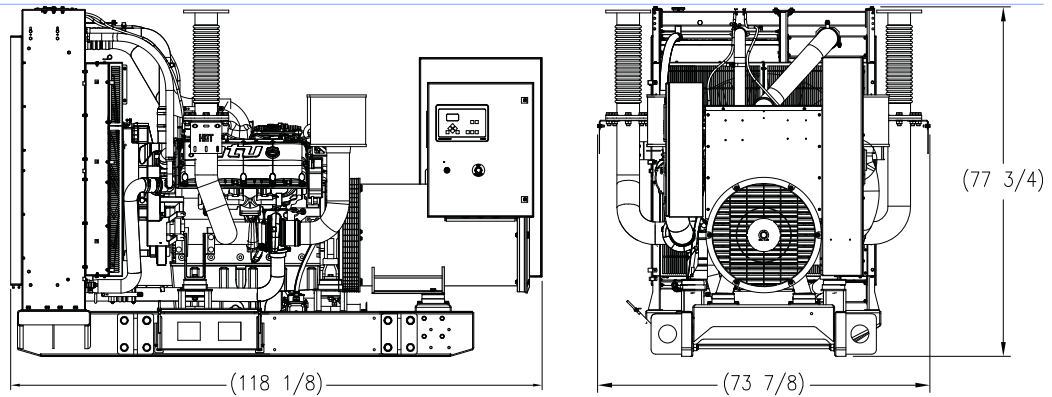
	STANDBY
Aspirating: *m ³ /min (SCFM)	31.8 (1,124)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	510 (18,010)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	160.9 (5,682)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	475 (887)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	84 (2,966)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (61)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,001 x 1,877 x 1,975 mm (118.13 x 73.88 x 77.75 in)

Weight (dry/less tank)

3,652 kg (8,050 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

88.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.06

CO

0.52

PM

0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

400 kWe / 60 Hz / Standby
208 - 600V

(Reference DP365D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS400D6SPA	DS400D6SJA	DS400D6SVA	DS400D6SWA	DS400D6SRA	DS400D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	400	400	400	400	400	400
kVA	500	500	500	500	500	500
AMPS	1388	1203	760	656	601	481
skVA@30%						
Voltage Dip	800	820	640	920	1277	1100
Generator Model	572RSL4025	572RSL4025	572RSL4025	433CSL6220	433CSL6220	433PSL6248
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 8V1600 Diesel Engine
 - 14.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation (570 frame)
 ±1% Voltage Regulation (430 frame)
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	8V1600G80S
Type	4-Cycle
Arrangement	8-V
Displacement: L (Cu In)	14 (854)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	448 (600)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	80.3 (21.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	106 (28)
At 75% of Power Rating: L/hr (gal/hr)	87 (23)
At 50% of Power Rating: L/hr (gal/hr)	66 (17.5)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	362 (95)
Heat Rejection to Coolant: kW (BTUM)	205 (11,658)
Heat Rejection to After Cooler: kW (BTUM)	120 (6,824)
Heat Radiated to Ambient: kW (BTUM)	48.1 (2,735)

// Air Requirements

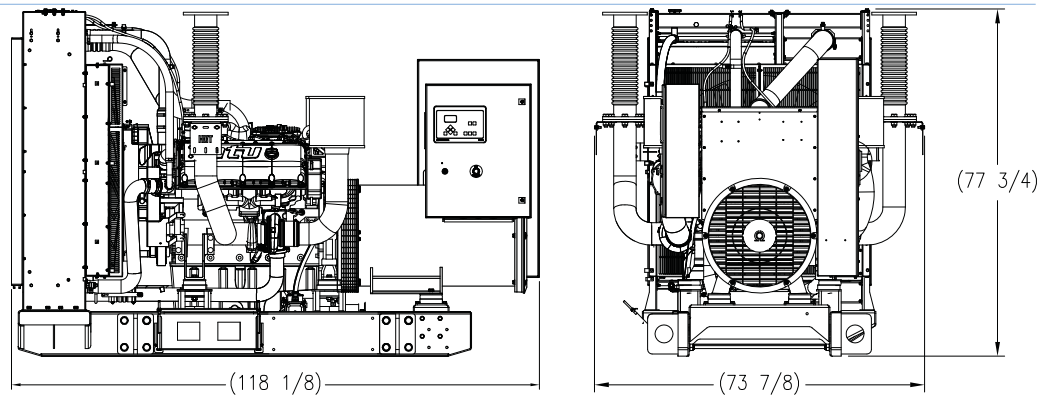
	STANDBY
Aspirating: *m ³ /min (SCFM)	30 (1,060)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	510 (18,010)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	174.7 (6,169)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	478 (892)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	78 (2,755)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (61)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,001 x 1,877 x 1,975 mm (118.13 x 73.88 x 77.75 in)	3,652 kg (8,050 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	88.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.01	0.52	0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

450 kWe / 60 Hz / Standby
208 - 600V

(Reference DP400D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS450D6SPA	DS450D6SJA	DS450D6SVA	DS450D6SWA	DS450D6SRA	DS450D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	450	450	450	450	450	450
kVA	563	563	563	563	563	563
AMPS	1561	1353	855	738	677	541
skVA@30%						
Voltage Dip	900	900	850	900	1090	1040
Generator Model	572RSL4027	572RSL4027	572RSL4029	572RSL4025	572RSL4025	572RSS4270
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110
 - Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 10V1600 Diesel Engine
 - 17.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	10V1600G70S
Type	4-Cycle
Arrangement	10-V
Displacement: L (Cu In)	17.5 (1,068)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kW _m (bhp)	511 (685)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	61 (16)
Engine Jacket Water Capacity: L (gal)	60 (15.9)
System Coolant Capacity: L (gal)	99.3 (26.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	401.3 (106)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	112 (29.6)
At 75% of Power Rating: L/hr (gal/hr)	90 (23.7)
At 50% of Power Rating: L/hr (gal/hr)	65 (17.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	466 (123)
Heat Rejection to Coolant: kW (BTUM)	235 (13,364)
Heat Rejection to After Cooler: kW (BTUM)	118 (6,710)
Heat Radiated to Ambient: kW (BTUM)	58.6 (3,332)

// Air Requirements

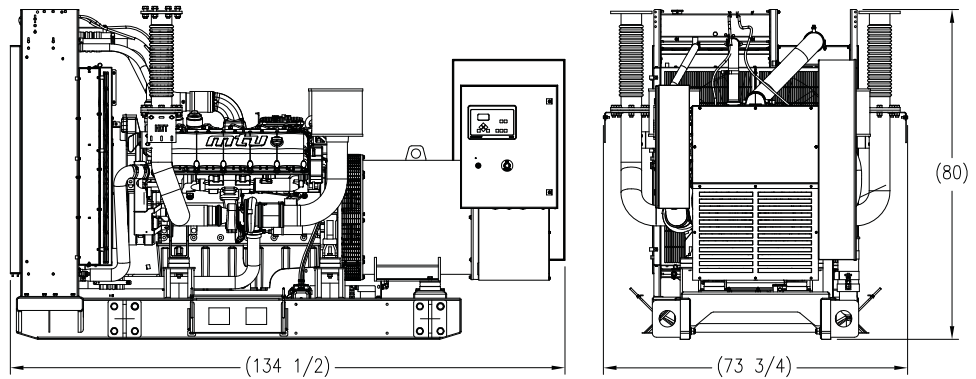
	STANDBY
Aspirating: *m ³ /min (SCFM)	35 (1,250)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	642 (22,672)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	213 (7,516)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	461 (862)
Gas Volume at Stack Temp: m ³ /min (CFM)	103 (3,623)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,416 x 1,873 x 2,032 mm (134.50 x 73.75 x 80 in)	4,525 kg (9,975 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	93.4

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
3.31	0.37	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

500 kWe / 60 Hz / Standby
208 - 600V

(Reference DP450D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS500D6SPA	DS500D6SJA	DS500D6SWA	DS500D6SRA	DS500D6SNA
Voltage (L-L)	208V**	240V**	440V	480V**	600V**
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
kW	500	500	500	500	500
kVA	625	625	625	625	625
AMPS	1735	1504	820	752	601
skVA@30%					
Voltage Dip	1040	1040	1040	1290	1040
Generator Model	572RSL4029	572RSL4029	572RSL4027	572RSL4027	572RSS4270
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 10V1600 Diesel Engine
 - 17.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	10V1600G80S
Type	4-Cycle
Arrangement	10-V
Displacement: L (Cu In)	17.5 (1,068)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kW _m (bhp)	561 (752)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	61 (16)
Engine Jacket Water Capacity: L (gal)	60 (15.9)
System Coolant Capacity: L (gal)	99.3 (26.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	401.3 (106)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	125 (33.1)
At 75% of Power Rating: L/hr (gal/hr)	97 (25.6)
At 50% of Power Rating: L/hr (gal/hr)	74 (19.5)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	466 (123)
Heat Rejection to Coolant: kW (BTUM)	235 (13,364)
Heat Rejection to After Cooler: kW (BTUM)	118 (6,710)
Heat Radiated to Ambient: kW (BTUM)	58.6 (3,332)

// Air Requirements

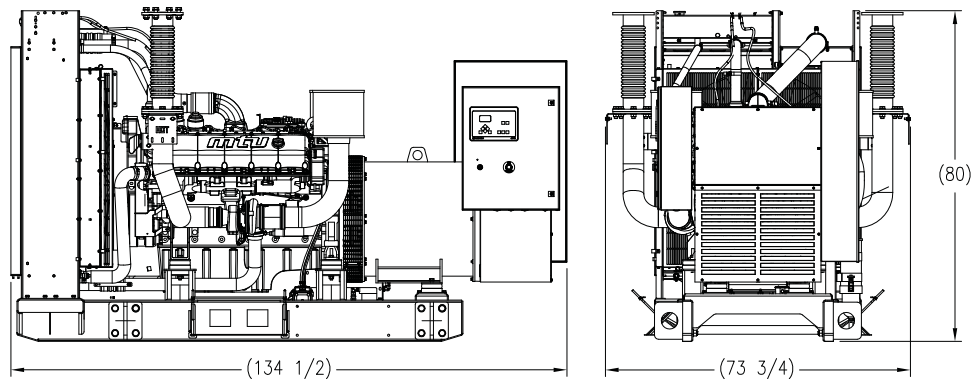
	STANDBY
Aspirating: *m ³ /min (SCFM)	35 (1,250)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	642 (22,672)
Remote Cooled Applications;	
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	213 (7,516)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	461 (862)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	103 (3,623)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,416 x 1,873 x 2,032 mm (134.50 x 73.75 x 80 in)	4,552 kg (10,035 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	93.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
6.9	0.45	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

550 kWe / 60 Hz / Standby
208 - 600V

(Reference DP500D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS550D6SPA	DS550D6SJA	DS550D6SVA	DS550D6SWA	DS550D6SRA	DS550D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	550	550	550	550	550	550
kVA	687	687	687	687	687	687
AMPS	1908	1654	1045	902	827	662
skVA@30%						
Voltage Dip	1200	1200	1230	1160	1500	1430
Generator Model	573RSL4033	573RSL4033	573RSL4033	572RSL4031	572RSL4029	572RSS4272
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 12V1600 Diesel Engine
 - 21.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V1600G70S
Type	4-Cycle
Arrangement	12-V
Displacement: L (Cu In)	21 (1,281)
Bore: cm (in)	12 (4.72)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	613 (821)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	73 (19.3)
Engine Jacket Water Capacity: L (gal)	65 (17.2)
System Coolant Capacity: L (gal)	106 (28.1)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106.2)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	140.4 (37.1)
At 75% of Power Rating: L/hr (gal/hr)	106 (28)
At 50% of Power Rating: L/hr (gal/hr)	75.3 (19.9)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	517 (137)
Heat Rejection to Coolant: kW (BTUM)	242 (13,762)
Heat Rejection to After Cooler: kW (BTUM)	150 (8,530)
Heat Radiated to Ambient: kW (BTUM)	62.2 (3,537)

// Air Requirements

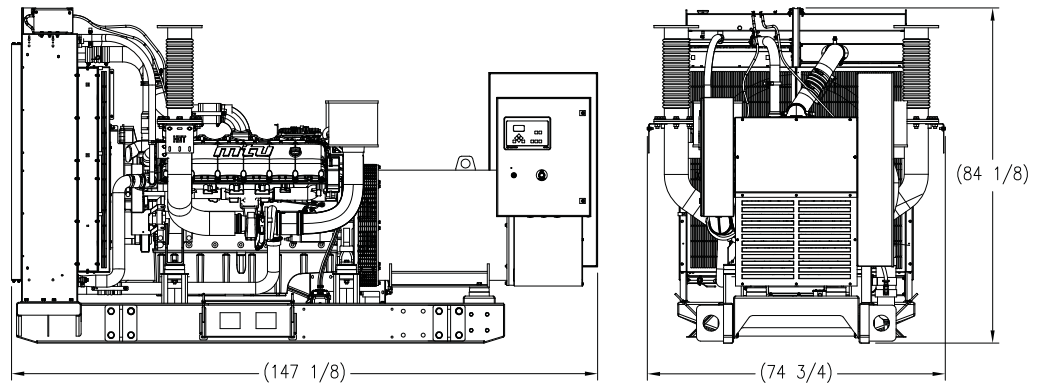
	STANDBY
Aspirating: *m ³ /min (SCFM)	52 (1,844)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	756 (26,700)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	226 (7,977)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	413 (775)
Gas Volume at Stack Temp: m ³ /min (CFM)	126 (4,450)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,737 x 1,899 x 2,137 mm (147.13 x 74.75 x 84.13 in)

Weight (dry/less tank)

4,936 kg (10,880 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Standby Full Load

91.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.97

CO

0.26

PM

0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

600 kWe / 60 Hz / Standby
208 - 600V

(Reference DP550D6S for Prime Rating Technical Data)



SYSTEM RATINGS

Standby	DS600D6SPA	DS600D6SJA	DS600D6SVA	DS600D6SWA	DS600D6SRA	DS600D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	600	600	600	600	600	600
kVA	750	750	750	750	750	750
AMPS	2082	1804	1140	984	902	722
skVA@30%						
Voltage Dip	1200	1200	1200	1400	1430	1430
Generator Model	573RSL4033	573RSL4033	573RSL4035	573RSL4033	572RSL4031	572RSS4272
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 12V1600 Diesel Engine
 - 21.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V1600G80S
Type	4-Cycle
Arrangement	12-V
Displacement: L (Cu In)	21 (1,281)
Bore: cm (in)	12 (4.72)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kW _m (bhp)	668 (896)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	73 (19.3)
Engine Jacket Water Capacity: L (gal)	65 (17.2)
System Coolant Capacity: L (gal)	106 (28.1)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106.2)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	151.4 (40)
At 75% of Power Rating: L/hr (gal/hr)	114.3 (30.2)
At 50% of Power Rating: L/hr (gal/hr)	80.2 (21.2)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	517 (137)
Heat Rejection to Coolant: kW (BTUM)	270 (15,354)
Heat Rejection to After Cooler: kW (BTUM)	170 (9,667)
Heat Radiated to Ambient: kW (BTUM)	67.1 (3,816)

// Air Requirements

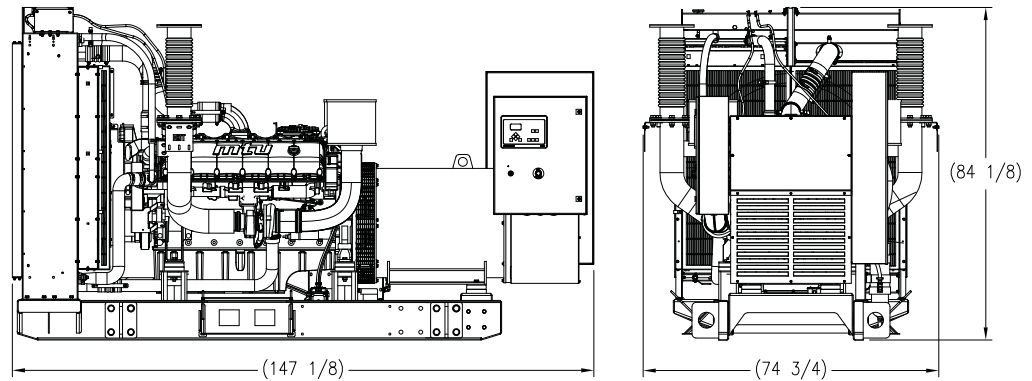
	STANDBY
Aspirating: *m ³ /min (SCFM)	54 (1,907)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	756 (26,700)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	244 (8,606)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	425 (797)
Gas Volume at Stack Temp: m ³ /min (CFM)	132 (4,662)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,737 x 1,899 x 2,137 mm (147.13 x 74.75 x 84.13 in)	4,967 kg (10,950 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	91.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.37	0.3	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL POWER MODULE

AIR CHARGE-AIR COOLING

Voltages:

1180 kWe / 60 Hz / Standby - 480V



SYSTEM RATINGS

Standby	DS1200D6S
Voltage (L-L)	480V
Phase	3
PF	0.8
Hz	60
kW	1180
kVA	1475
AMPS	1776
skVA@30%	
Voltage Dip	3200
Generator Model	740RSL4046
Temp Rise	130 °C/40 °C
Connection	4 LEAD WYE

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 18V2000 Diesel Engine
 - 35.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set - Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan and Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Rack & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine
 60 Hz

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	18V2000G85TD
Type	4-Cycle
Arrangement	18-V
Displacement: L (Cu In)	35.8 (2,186)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM: 60 Hz	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: 110% kW _m (bhp)	1,310 (1,755)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	130 (34.3)
Engine Jacket Water Capacity: L (gal)	120 (31.7)
System Coolant Capacity: L (gal)	209 (56)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: 60 Hz L/hr (gal/hr)	480 (146)

// Fuel Consumption

At 100% of Power Rating: L/hr (gal/hr)	315 (83)
At 75% of Power Rating: L/hr (gal/hr)	245 (65)
At 50% of Power Rating: L/hr (gal/hr)	165 (44)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	40 (104)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	867 (229)
Heat Rejection to Coolant: kW (BTUM)	510 (29,003)
Heat Rejection to After Cooler: kW (BTUM)	360 (20,473)
Heat Radiated to Ambient: kW (BTUM)	50 (2,841)

// Air Requirements

Aspirating: *(m ³ /min) SCFM	108 (3,814)
Air Flow Required for Rad. Cooled Unit: *(m ³ /min) SCFM	1,716 (60,600)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *(m ³ /min) SCFM	N/A

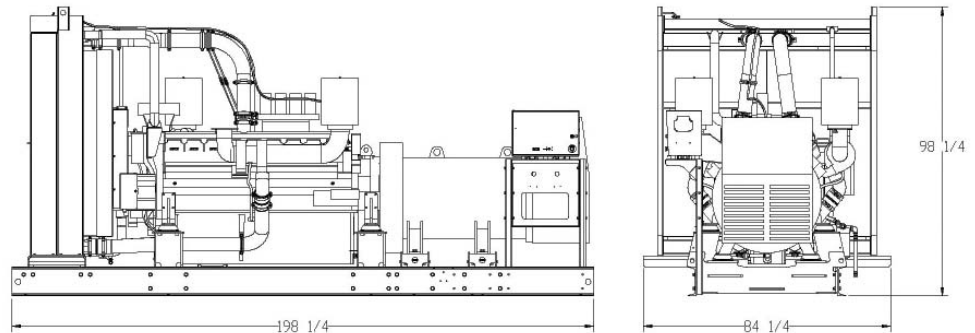
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	530 (986)
Gas Volume at Stack Temp: m ³ /min (CFM)	264 (9,323)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	9 (34)

N/A = Not applicable to this system

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (wet/no fuel)
OPU	5,036 x 2,140 x 2,496 mm (198.25 x 84.25 x 98.25 in)	9,135 kg (20,139 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Full Load
Level 0: Open Power Unit (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.110	0.448	0.022

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO-3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

650-XC6DT2

650 kWe / 60 Hz / Standby
208 - 4160V

(Reference 615-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	650	650	650	650	650	650
kVA	812.5	812.5	813	812.5	812.5	812.5
AMPS	2255	1955	1236	977	782	113
skVA@30%						
Voltage Dip	1750	1750	1600	1750	1350	1850
Generator Model*	573RSL4033	573RSL4033	574RSL4037	573RSL4033	573RSS4274	574FSM4358
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G45TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	780 (1,046)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480 (127)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	192.7 (50.9)
At 75% of Power Rating: L/hr (gal/hr)	145 (38.3)
At 50% of Power Rating: L/hr (gal/hr)	98.4 (26)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	270 (15,354)
Heat Rejection to After Cooler: kW (BTUM)	235 (13,364)
Heat Radiated to Ambient: kW (BTUM)	76.4 (4,345)

// Air Requirements

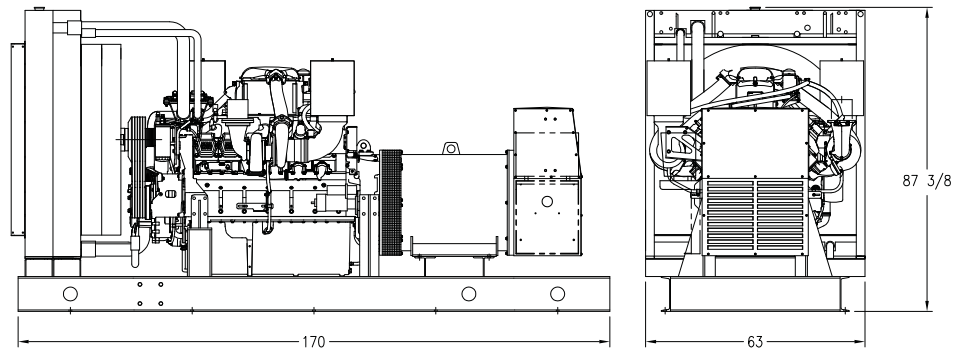
	STANDBY
Aspirating: *m ³ /min (SCFM)	63 (2,225)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,132 (39,977)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	277 (9,798)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	550 (1,022)
Gas Volume at Stack Temp: m ³ /min (CFM)	159 (5,615)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,320 x 1,600 x 2,219 mm (170 x 63 x 87.4 in)	5,492 kg (12,108 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	92.0

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.46	0.35	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

750-XC6DT2

750 kWe / 60 Hz / Standby
208 - 4160V

(Reference 680-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	750	750	750	750	750	750
kVA	937.5	937.5	938	937.5	937.5	937.5
AMPS	2602	2255	1426	1128	902	130
skVA@30%						
Voltage Dip	2600	2600	1850	2120	3050	1850
Generator Model*	574RSL4037	574RSL4037	575RSL4044	573RSL4035	574RSS4278	574FSM4358
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G85TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	890 (1,193)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	218.8 (57.8)
At 75% of Power Rating: L/hr (gal/hr)	164.6 (43.5)
At 50% of Power Rating: L/hr (gal/hr)	111.3 (29.4)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	315 (17,913)
Heat Rejection to After Cooler: kW (BTUM)	270 (15,354)
Heat Radiated to Ambient: kW (BTUM)	84.5 (4,805)

// Air Requirements

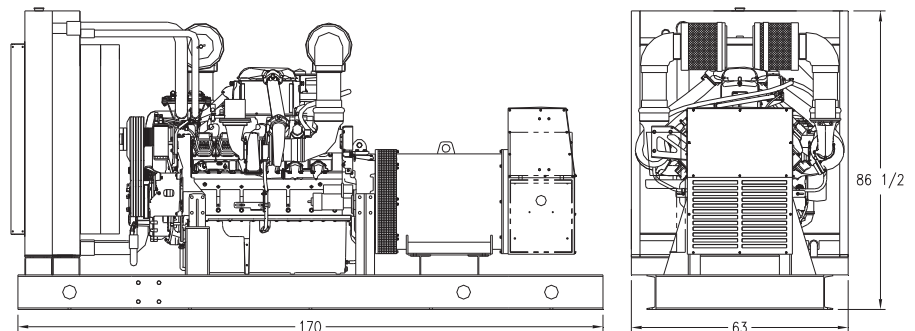
	STANDBY
Aspirating: *m ³ /min (SCFM)	66 (2,331)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,132 (39,997)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	307 (10,840)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	580 (1,076)
Gas Volume at Stack Temp: m ³ /min (CFM)	174 (6,145)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,320 x 1,600 x 2,200 mm (170 x 63 x 86.5 in)	5,592 kg (12,328 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	92

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.68	0.44	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

800-XC6DT2

800 kWe / 60 Hz / Standby
208 - 4160V

(Reference 725-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	800	800	800	800	800	800
kVA	1000	1000	1000	1000	1000	1000
AMPS	2779	2408	1521	1204	963	138
skVA@30%						
Voltage Dip	1800	1800	1850	2500	2825	2600
Generator Model*	741RSL4045	741RSL4045	575RSL4044	574RSL4038	574RSS4280	742FSM4364
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	4 LEAD WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G85TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	890 (1,193)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	316 (83.5)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#12 JIC 37° Female 3/4" NPT Adapter Provided
Fuel Return Connection Size	#4 JIC 37° Female 1/4" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	218.8 (57.8)
At 75% of Power Rating: L/hr (gal/hr)	164.6 (43.5)
At 50% of Power Rating: L/hr (gal/hr)	111.3 (29.4)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	315 (17,913)
Heat Rejection to After Cooler: kW (BTUM)	270 (15,354)
Heat Radiated to Ambient: kW (BTUM)	84.5 (4,805)

// Air Requirements

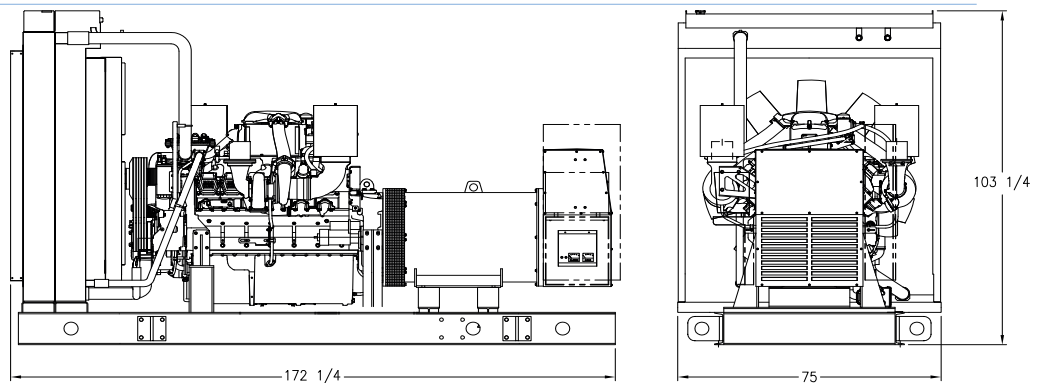
	STANDBY
Aspirating: *m ³ /min (SCFM)	66 (2,331)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,120 (39,554)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	307 (10,840)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	580 (1,076)
Gas Volume at Stack Temp: m ³ /min (CFM)	174 (6,145)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,375 x 1,905 x 2,623 mm (172.25 x 75 x 103.25 in)	5,737 kg (12,648 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	88.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.68	0.44	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

900-XC6DT2

900 kWe / 60 Hz / Standby
208 - 4160V

(Reference 800-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	900	900	895	900	900	900
kVA	1125	1125	1119	1125	1125	1125
AMPS	3123	2706	1702	1353	1083	156
skVA@30%						
Voltage Dip	2600	2600	1850	2500	2850	1950
Generator Model*	741RSL4045	741RSL4045	740RSL4046	574RSL4038	574RSS4280	741FSM4360
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	4 LEAD WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 2000 Diesel Engine
 - 31.8 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V2000G45TB
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	31.8 (1,943)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,010 (1,354)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	102 (26.9)
Engine Jacket Water Capacity: L (gal)	130 (34.3)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	415 (110)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	243.4 (64.3)
At 75% of Power Rating: L/hr (gal/hr)	186.2 (49.2)
At 50% of Power Rating: L/hr (gal/hr)	126.4 (33.4)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	355 (20,188)
Heat Rejection to After Cooler: kW (BTUM)	290 (16,491)
Heat Radiated to Ambient: kW (BTUM)	97.4 (5,539)

// Air Requirements

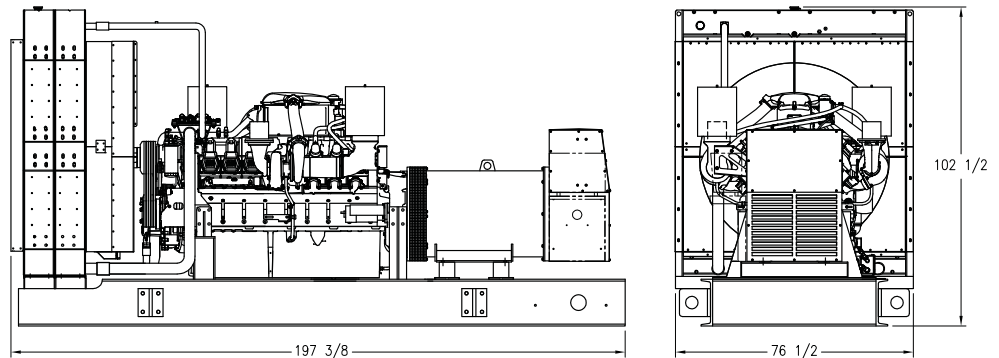
	STANDBY
Aspirating: *m ³ /min (SCFM)	84 (2,966)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,133 (40,013)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	354 (12,490)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	530 (986)
Gas Volume at Stack Temp: m ³ /min (CFM)	210 (7,416)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	5,010 x 1,940 x 2,600 mm (197.4 x 76.5 x 102.5 in)	7,733 kg (17,047 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	92.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
4.36	0.35	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1000-XC6DT2

1000 kWe / 60 Hz / Standby
208 - 4160V

(Reference 900-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	1000	1000	995	1000	1000	1000
kVA	1250	1250	1244	1250	1250	1250
AMPS	3470	3007	1892	1504	1203	173
skVA@30%						
Voltage Dip	2600	2600	1850	3200	1550	2600
Generator Model*	741RSL4045	741RSL4045	742RSL4048	575RSL4044	741RSS4282	742FSM4364
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 2000 Diesel Engine
 - 31.8 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V2000G85TB
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	31.8 (1,943)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,115 (1,495)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	102 (26.9)
Engine Jacket Water Capacity: L (gal)	130 (34.3)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	415 (110)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	268.7 (71)
At 75% of Power Rating: L/hr (gal/hr)	203.6 (53.8)
At 50% of Power Rating: L/hr (gal/hr)	138.9 (36.7)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	400 (22,747)
Heat Rejection to After Cooler: kW (BTUM)	320 (18,197)
Heat Radiated to Ambient: kW (BTUM)	95.4 (5,425)

// Air Requirements

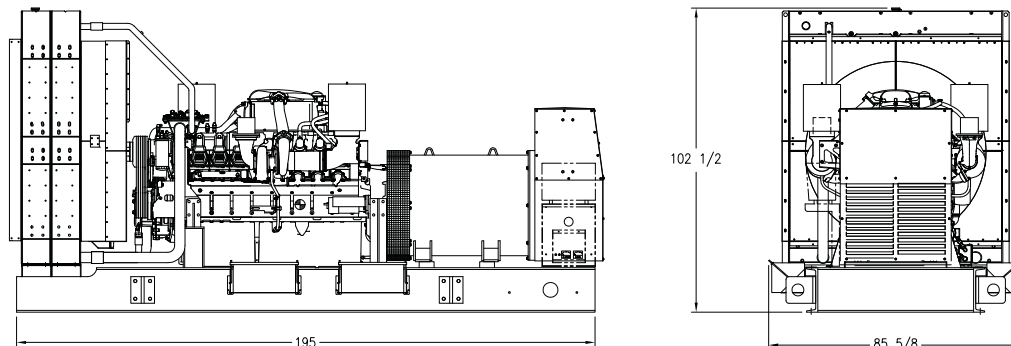
	STANDBY
Aspirating: *m ³ /min (SCFM)	87 (3,072)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,200 (42,360)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	346 (12,240)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	550 (1,022)
Gas Volume at Stack Temp: m ³ /min (CFM)	222 (7,840)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,953 x 2,175 x 2,603 mm (195 x 85.63 x 102.5 in)	8,077 kg (17,807 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	97.7

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.59	0.35	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1250-XC6DT2

1250 kWe / 60 Hz / Standby
380 - 4160V

(Reference 1125-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1250	1250	1250	1250
kVA	1563	1562.5	1562.5	1562.5
AMPS	2377	1879	1504	217
skVA@30%				
Voltage Dip	2700	3100	4650	3100
Generator Model*	743RSL4052	742RSL4048	743RSS4288	742FSM4366
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G43 (T1238A34)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,736 (2,328)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	341 (90)
At 75% of Power Rating: L/hr (gal/hr)	268 (70.8)
At 50% of Power Rating: L/hr (gal/hr)	192 (50.7)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	599 (34,088)
Heat Rejection to After Cooler: kW (BTUM)	436 (24,773)
Heat Radiated to Ambient: kW (BTUM)	144 (8,165)

// Air Requirements

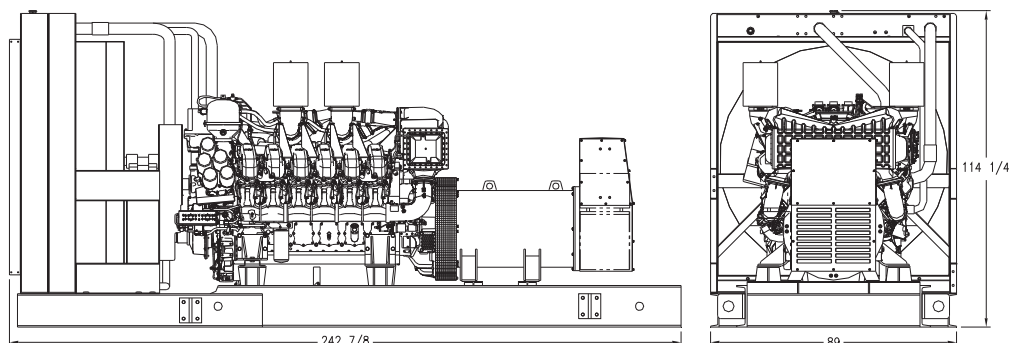
	STANDBY
Aspirating: *m ³ /min (SCFM)	138 (4,873)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,518 (53,611)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	525 (18,414)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	425 (797)
Gas Volume at Stack Temp: m ³ /min (CFM)	336 (11,866)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	13,786 kg (30,392 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	91.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.35	0.5	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1500-XC6DT2

1500 kWe / 60 Hz / Standby
380 - 4160V

(Reference 1400-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1500	1500	1500	1500
kVA	1875	1875	1875	1875
AMPS	2852	2255	1804	260
skVA@30%				
Voltage Dip	3350	3500	4800	3900
Generator Model*	744RSL4054	742RSL4050	743RSS4290	743FSM4368
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G43 (T1238A34)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,736 (2,328)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	420 (111)
At 75% of Power Rating: L/hr (gal/hr)	323 (85.3)
At 50% of Power Rating: L/hr (gal/hr)	226 (59.6)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	666 (37,875)
Heat Rejection to After Cooler: kW (BTUM)	484 (27,525)
Heat Radiated to Ambient: kW (BTUM)	154 (8,755)

// Air Requirements

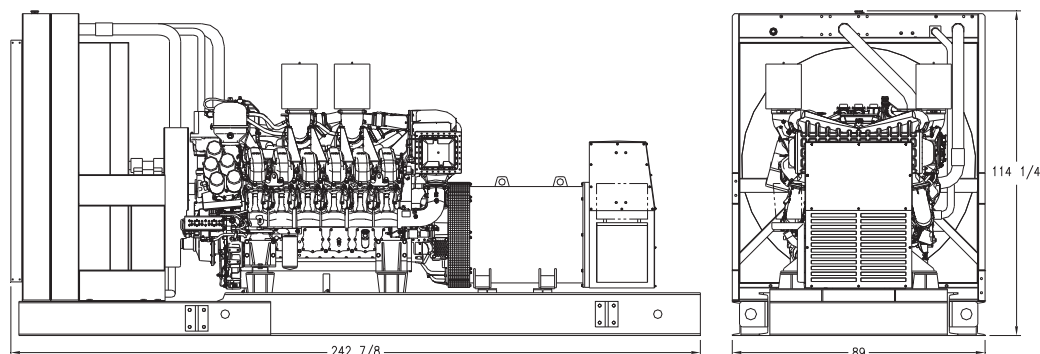
	STANDBY
Aspirating: *m ³ /min (SCFM)	144 (5,085)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,518 (53,611)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	563 (19,745)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	435 (815)
Gas Volume at Stack Temp: m ³ /min (CFM)	342 (12,078)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	14,207 kg (31,322 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	92.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.35	0.5	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1750-XC6DT2

1750 kWe / 60 Hz / Standby
380 - 4160V

(Reference 1600-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1750	1750	1750	1750
kVA	2188	2187.5	2187.5	2187.5
AMPS	3328	2631	2105	304
skVA@30%				
Voltage Dip	4200	4700	3600	4000
Generator Model*	744RSL4056	743RSL4052	744RSS4292	743FSM4370
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G83 (T1238A36)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,910 (2,561)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	466 (123)
At 75% of Power Rating: L/hr (gal/hr)	352 (93)
At 50% of Power Rating: L/hr (gal/hr)	246 (65)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	728 (41,401)
Heat Rejection to After Cooler: kW (BTUM)	550 (31,279)
Heat Radiated to Ambient: kW (BTUM)	157 (8,955)

// Air Requirements

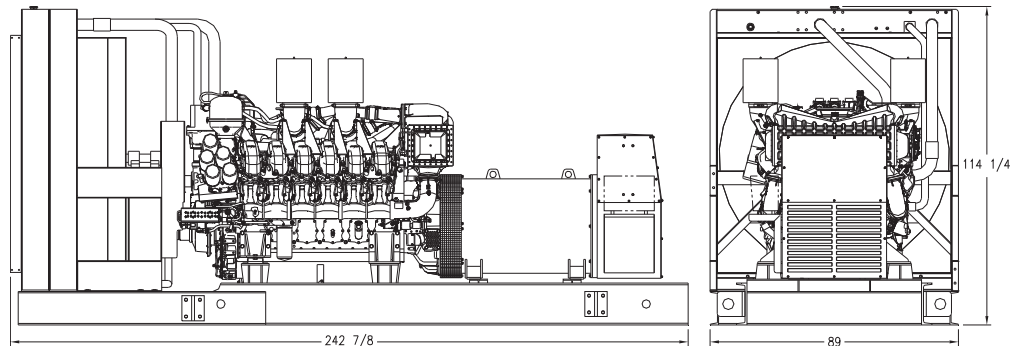
	STANDBY
Aspirating: *m ³ /min (SCFM)	144 (5,085)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,702 (60,120)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	575 (20,196)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	465 (869)
Gas Volume at Stack Temp: m ³ /min (CFM)	366 (12,925)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	14,511 kg (31,992 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	93.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.09	0.64	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2000-XC6DT2

2000 kWe / 60 Hz / Standby
380 - 13.8kV

(Reference 1800-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2000	2000	2000	2000	2000	2000	2000
kVA	2500	2500	2500	2500	2500	2500	2500
AMPS	3803	3007	2406	347	116	109	105
skVA@30%							
Voltage Dip Generator	4300	5800	3600	5100	C/F	C/F	C/F
Model*	744RSL4176	744RSL4054	744RSS4292	744FSM4374	1020FDH5582	1020FDH5582	1020FDH5582
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V4000G43 (T1638A36)
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	76.3 (4,656)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,280 (3,058)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Engine Jacket Water Capacity: L (gal)	175 (46.2)
After Cooler Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	651 (172)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	558 (147.3)
At 75% of Power Rating: L/hr (gal/hr)	426 (112.6)
At 50% of Power Rating: L/hr (gal/hr)	299 (78.9)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.25 (1)
Water Pump Capacity: L/min (gpm)	1,350 (357)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	874 (49,704)
Heat Rejection to After Cooler: kW (BTUM)	671 (38,160)
Heat Radiated to Ambient: kW (BTUM)	184 (10,478)

// Air Requirements

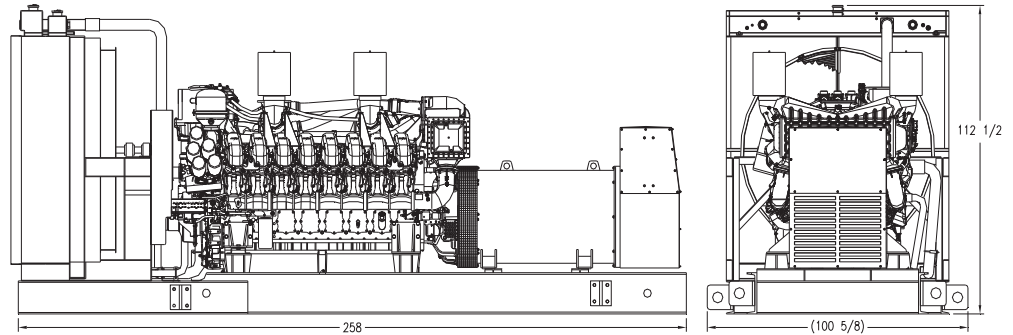
	STANDBY
Aspirating: *m ³ /min (SCFM)	186 (6,569)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	2,270 (80,160)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	673 (23,631)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	480 (896)
Gas Volume at Stack Temp: m ³ /min (CFM)	456 (16,103)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (LxWxH)	Weight (less tank)
OPU	6,550 x 2,560 x 2,860 mm (258 x 100.6 x 112.5 in)	16,477 kg (36,326 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	94.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.27	0.6	0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2250-XC6DT2

2250 kWe / 60 Hz / Standby
380 - 13.8kV

(Reference 2045-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2250	2250	2250	2250	2250	2250	2250
kVA	2813	2812.5	2812.5	2812.5	2812.5	2812.5	2812.5
AMPS	4278	3383	2706	390	130	123	118
skVA@30%							
Voltage Dip Generator	3625	8400	3900	5000	C/F	C/F	C/F
Model*	1020FDL1102	744RSL4058	1020FDS1013	744FSM4376	1020FDH5584	1020FDH5584	1020FDH5584
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	4 BAR WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 Listed – Optional**

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V 4000 G83 (T1638A36)
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	76.3 (4,656)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,500 (3,351)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Engine Jacket Water Capacity: L (gal)	175 (46.2)
After Cooler Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	651 (172)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	617 (163)
At 75% of Power Rating: L/hr (gal/hr)	467 (123)
At 50% of Power Rating: L/hr (gal/hr)	325 (86)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.25 (1)
Water Pump Capacity: L/min (gpm)	1,350 (357)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	967 (54,993)
Heat Rejection to After Cooler: kW (BTUM)	748 (42,539)
Heat Radiated to Ambient: kW (BTUM)	206 (11,711)

// Air Requirements

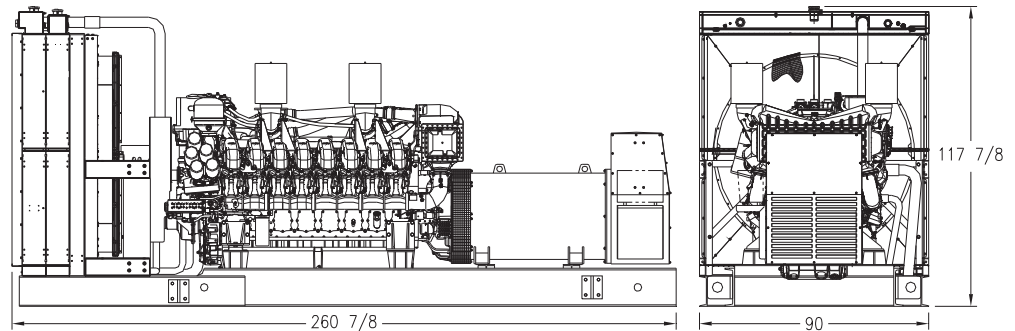
	STANDBY
Aspirating: *m ³ /min (SCFM)	192 (6,780)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	2,520 (89,005)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	752 (26,412)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	505 (941)
Gas Volume at Stack Temp: m ³ /min (CFM)	504 (17,799)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,630 x 2,290 x 2,990 mm (260.88 x 90 x 117.88 in)	16,994 kg (37,466 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	93.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.44	0.7	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2500-XC6DT2 (16V4000)

2500 kWe / 60 Hz / Standby
380 - 13.8kV



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2500	2500	2500	2500	2500	2500	2500
kVA	3125	3125	3125	3125	3125	3125	3125
AMPS	4754	3759	3007	434	145	137	131
skVA@30%							
Voltage Dip Generator	3400	4625	5200	5800	4300	4750	5350
Model*	1020FDL1104	1020FDL1102	1020FDS1122	1020FDM1180	1020FDH1248	1020FDH1248	1030FDH1250
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 2 Bearings, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V4000G83L
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	76.3 (4,656)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,740 (3,673)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Engine Jacket Water Capacity: L (gal)	458 (121)
After Cooler Water Capacity: L (gal)	254 (67)
System Coolant Capacity: L (gal)	712 (188)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	693 (183)
At 75% of Power Rating: L/hr (gal/hr)	515 (136)
At 50% of Power Rating: L/hr (gal/hr)	356 (94)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	43 (110)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,350 (357)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	1,115 (63,408)
Heat Rejection to After Cooler: kW (BTUM)	750 (42,653)
Heat Radiated to Ambient: kW (BTUM)	90 (5,118)

// Air Requirements

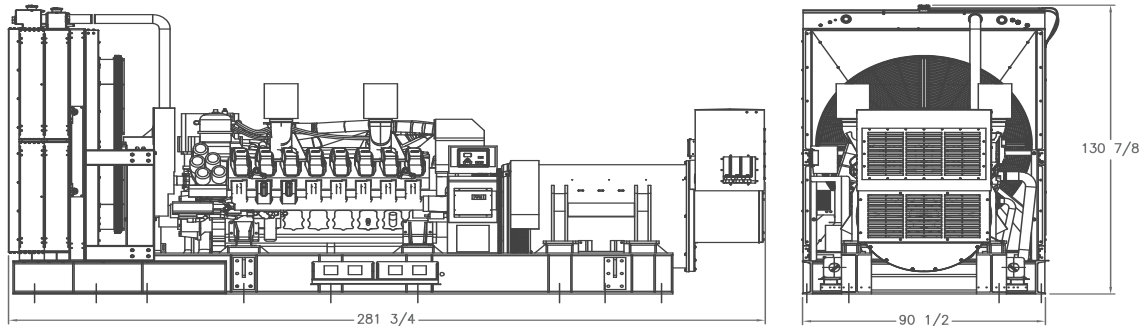
	STANDBY
Aspirating: *m ³ /min (SCFM)	222 (7,840)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	2,457 (86,760)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	725 (25,601)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	515 (959)
Gas Volume at Stack Temp: m ³ /min (CFM)	600 (21,189)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,156 x 2,299 x 3,324 mm (281.75 x 90.5 x 130.88 in)	22,045 kg (48,600 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	93.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
4.98	0.7	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2500-XC6DT2 (20V4000)

2500 kWe / 60 Hz / Standby
380 - 13.8kV

(Reference 2250-XC6DT2 (20V4000) for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2500	2500	2500	2500	2500	2500	2500
kVA	3125	3125	3125	3125	3125	3125	3125
AMPS	4754	3759	3007	434	145	137	131
skVA@30%							
Voltage Dip Generator	3400	4625	5200	5800	4300	4750	5350
Model*	1020FDL1104	1020FDL1102	1020FDS1122	1020FDM1180	1020FDH1248	1020FDH1248	1030FDH1250
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 2 Bearings, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G43 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,740 (3,673)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	814 (215)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	636 (168)
At 75% of Power Rating: L/hr (gal/hr)	507 (134)
At 50% of Power Rating: L/hr (gal/hr)	363 (96)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	54 (129)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	940 (53,456)
Heat Rejection to After Cooler: kW (BTUM)	630 (35,827)
Heat Radiated to Ambient: kW (BTUM)	209 (11,895)

// Air Requirements

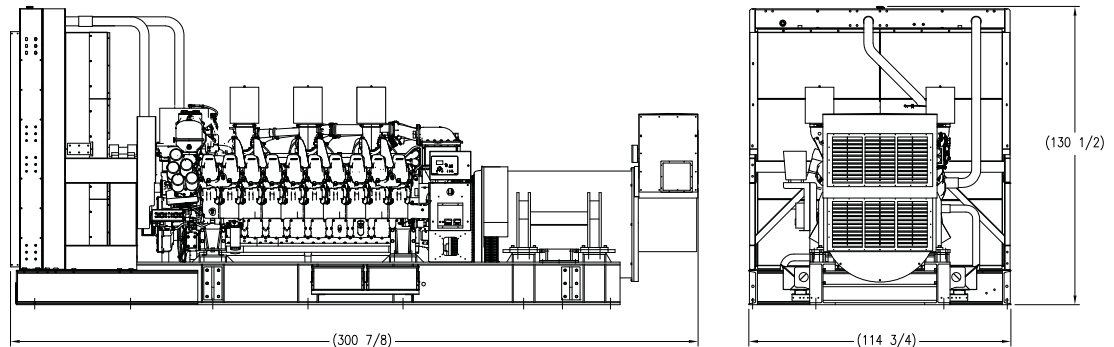
	STANDBY
Aspirating: *m ³ /min (SCFM)	225 (7,946)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,340 (117,959)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	784 (27,686)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	455 (851)
Gas Volume at Stack Temp: m ³ /min (CFM)	540 (19,070)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,640 x 2,915 x 3,310 mm (300.88 x 114.75 x 130.5 in)	26,941 kg (59,394 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	97.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
6.71	0.34	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2800-XC6DT2

2800 kWe / 60 Hz / Standby
380 - 13.8kV

(Reference 2500-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2800	2800	2800	2800	2800	2800	2800
kVA	3500	3500	3500	3500	3500	3500	3500
AMPS	5324	4210	3368	486	162	153	146
skVA@30%							
Voltage Dip Generator	4000	5400	5875	5250	5125	4875	6000
Model*	1030FDL1110	1020FDL1106	1020FDS1124	1020FDM1182	1030FDH1254	1030FDH1252	1030FDH1254
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V 4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 2 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G83 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	3,010 (4,035)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	860 (227)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	704 (186)
At 75% of Power Rating: L/hr (gal/hr)	553 (146)
At 50% of Power Rating: L/hr (gal/hr)	394 (104)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	48 (118)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	1,040 (59,143)
Heat Rejection to After Cooler: kW (BTUM)	740 (42,083)
Heat Radiated to Ambient: kW (BTUM)	237 (13,475)

// Air Requirements

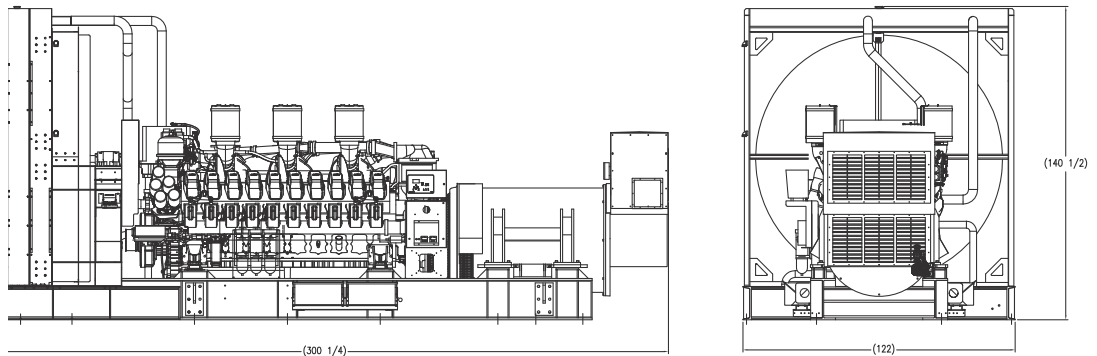
	STANDBY
Aspirating: *m ³ /min (SCFM)	240 (8,476)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,082 (108,843)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	843 (29,603)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	470 (878)
Gas Volume at Stack Temp: m ³ /min (CFM)	594 (20,977)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,626 x 3,099 x 3,569 mm (300.25 x 122 x 140.5 in)	28,149 kg (62,056 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	97.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
6.57	0.39	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

3000-XC6DT2

3000 kWe / 60 Hz / Standby
380 - 13.8kV

(Reference 2800-XC6DT2 for Prime Rating Technical Data)



SYSTEM RATINGS

Standby

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	3000	3000	3000	3000	3000	3000	3000
kVA	3750	3750	3750	3750	3750	3750	3750
AMPS	5704	4511	3609	520	174	164	157
skVA@30%							
Voltage Dip Generator	4000	5400	6125	5250	5125	5625	6000
Model*	1030FDL1110	1030FDL1108	1030FDS1126	1020FDM1184	1030FDH1254	1030FDH1254	1030FDH1254
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V 4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 2 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G83L 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	3,490 (4,678)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	860 (227)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	784 (207)
At 75% of Power Rating: L/hr (gal/hr)	594 (157)
At 50% of Power Rating: L/hr (gal/hr)	413 (109)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	47 (117)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	1,300 (73,929)
Heat Rejection to After Cooler: kW (BTUM)	970 (55,162)
Heat Radiated to Ambient: kW (BTUM)	230 (13,080)

// Air Requirements

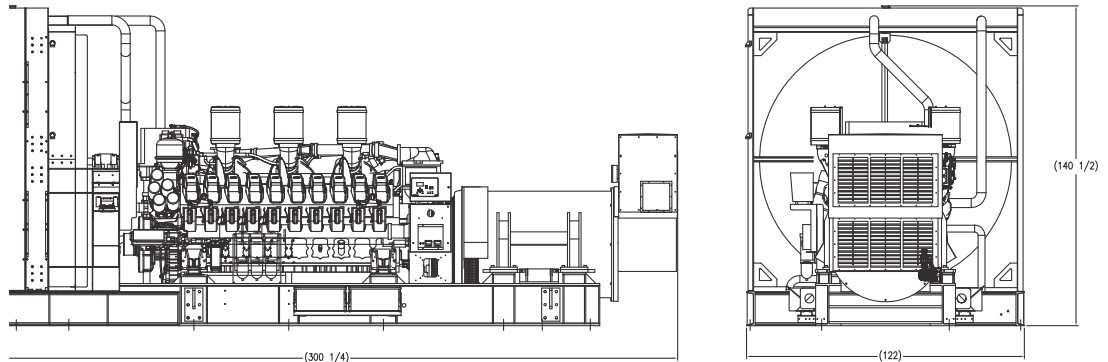
	STANDBY
Aspirating: *m ³ /min (SCFM)	264 (9,323)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,082 (108,843)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	888 (31,359)

* Air density = 1.184 kg/m (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	525 (977)
Gas Volume at Stack Temp: m ³ /min (CFM)	702 (24,791)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,626 x 3,099 x 3,569 mm (300.25 x 122 x 140.5 in)	28,357 kg (62,515 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	94.6

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.1	0.6	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

3250-XC6DT2

3250 kW / 60 Hz / Standby
480 - 13.8kV



SYSTEM RATINGS

Standby

Voltage (L-L)	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	3250	3250	3250	3250	3250	3250
kVA	4062.5	4062.5	4062.5	4062.5	4062.5	4062.5
AMPS	4887	3909	564	185	175	167
skVA@30%						
Voltage Dip	5500	6125	6300	6300	6850	7400
Generator Model*	1030FDL1110	1030FDS1128	1030FDM1188	1040FDH1256	1040FDH1256	1040FDH1256
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 Listed – Optional**

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V 4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 130 °C Maximum Standby Temperature Rise
 2 Bearings, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G83L 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	3,490 (4,678)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	860 (227)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	844 (223)
At 75% of Power Rating: L/hr (gal/hr)	644 (170)
At 50% of Power Rating: L/hr (gal/hr)	447 (118)

// Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	43 (108)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	1,300 (73,929)
Heat Rejection to After Cooler: kW (BTUM)	970 (55,163)
Heat Radiated to Ambient: kW (BTUM)	237 (13,472)

// Air Requirements

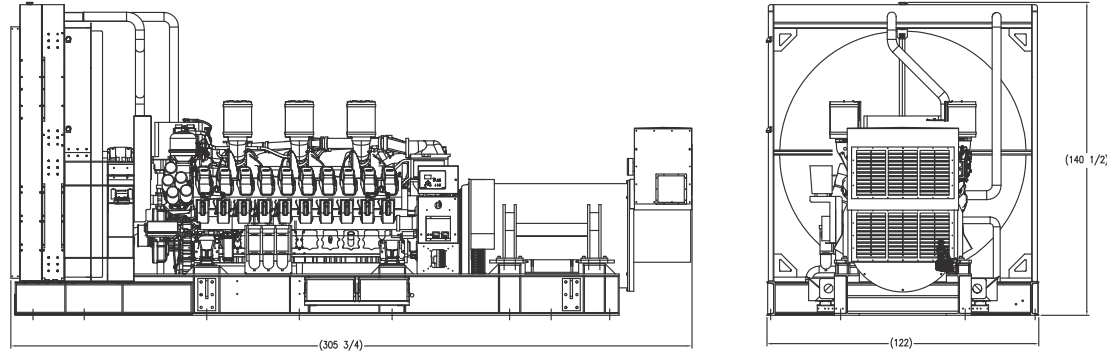
	STANDBY
Aspirating: *m ³ /min (SCFM)	264 (9,323)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,082 (108,843)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	866 (30,384)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	525 (977)
Gas Volume at Stack Temp: m ³ /min (CFM)	702 (24,791)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (LxWxH)	Weight (less tank)
OPU	7,766 x 3,099 x 3,569 mm (305.75 x 122 x 140.5 in)	29,651 kg (65,369 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Standby Full Load
Level 0: Open Power Unit (dBA)	95.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.1	0.6	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

TURBO CHARGE

27 kWe / 60 Hz / Prime
208 - 600V

(Reference DS30D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP27D6SGT	DP27D6SDT	DP27D6SPT	DP27D6SJT	DP27D6SRT	DP27D6SNT
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	27	27	27	27	27	27
kVA	27	27	33.75	33.75	33.75	33.75
AMPS	112.5	112.5	94	81	41	33
skVA@30%						
Voltage Dip	63	85	106	106	123	122
Generator Model	361CSL1601	283PSL1718	284PSL1708	284PSL1708	283PSL1707	284PSL1752
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 4 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024TF281 Diesel Engine
 - 2.4 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG 1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024TF281
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	20.5:1
Rated RPM	1,800
Engine Governor	Electric Isochronous
Maximum Power: kWm (bhp)	32 (43)
Speed Regulation	±1%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	8 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.675)
System Coolant Capacity: L (gal)	8.7 (2.29)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	100 (26.4)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	9.5 (2.5)
At 75% of Power Rating: L/hr (gal/hr)	7.2 (1.9)
At 50% of Power Rating: L/hr (gal/hr)	4.5 (1.2)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	91 (24)
Heat Rejection to Coolant: kW (BTUM)	23 (1,303)
Heat Radiated to Ambient: kW (BTUM)	4.8 (274)

// Air Requirements

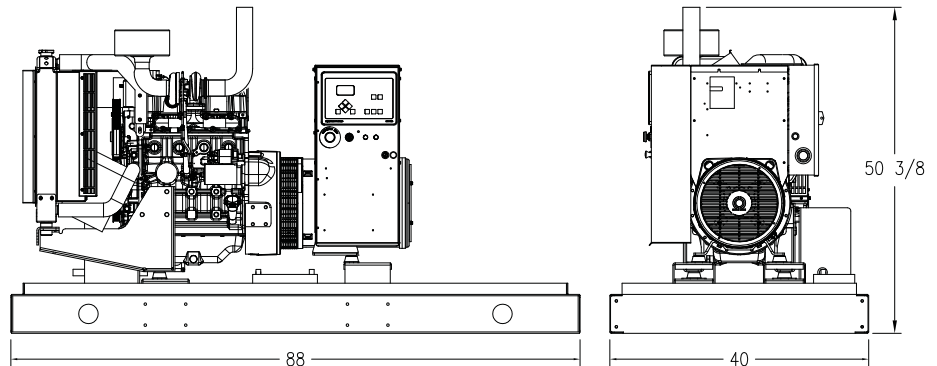
	PRIME
Aspirating: *m ³ /min (SCFM)	2.8 (99)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	62 (2,199)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	18 (618)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	517 (963)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	7.4 (261)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,279 mm (88 x 40 x 50.375 in)	679 kg (1,497 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	71.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
4.9	0.0	0.12

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

35 kWe / 60 Hz / Prime
208 - 600V

(Reference DS35D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP35D6SGA	DP35D6SDA	DP35D6SPA	DP35D6SJA	DP35D6SRA	DP35D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	35	35	35	35	35	35
kVA	35	35	43.75	43.75	43.75	43.75
AMPS	146	146	122	105	53	42
skVA@30%						
Voltage Dip	62	102	125	125	167	92
Generator Model	361CSL1601	284PSL1750	284PSL1742	284PSL1742	284PSL1742	361PSL1632
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	55 (74)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	12.1 (3.2)
At 75% of Power Rating: L/hr (gal/hr)	8.3 (2.2)
At 50% of Power Rating: L/hr (gal/hr)	4.5 (1.2)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	19.8 (1,127)
Heat Rejection to Air to Air: kW (BTUM)	6.2 (350)
Heat Radiated to Ambient: kW (BTUM)	5.6 (318)

// Air Requirements

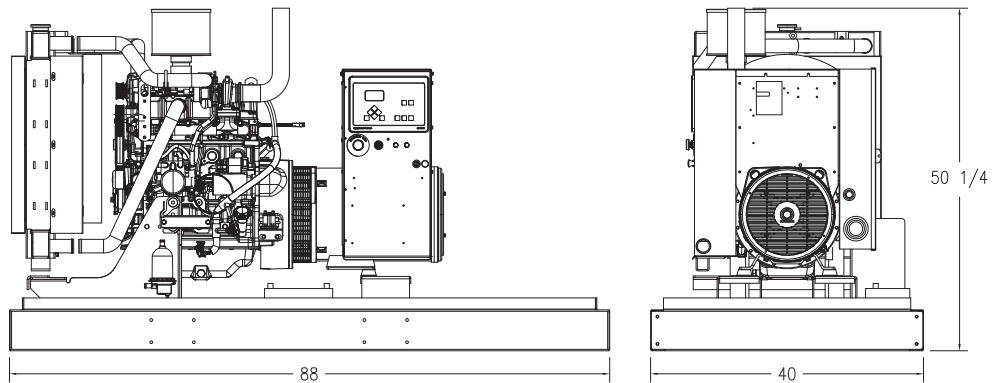
	PRIME
Aspirating: *m ³ /min (SCFM)	3.6 (126)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	20 (716)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	531 (988)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	9.2 (326)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System Open Power Unit (OPU)	Dimensions (L x W x H) 2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	Weight (dry/less tank) 716 kg (1,579 lb)
--	--	--

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type Level 0: Open Power Unit (dBA)	Prime Full Load 79.4
--	--------------------------------

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC 3.2	CO 0.8	PM 0.15
-------------------------------------	------------------	-------------------

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

40 kWe / 60 Hz / Prime
208 - 600V

(Reference DS40D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP40D6SGA	DP40D6SDA	DP40D6SPA	DP40D6SJA	DP40D6SRA	DP40D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	40	40	40	40	40	40
kVA	40	40	50	50	50	50
AMPS	167	167	139	120	60	48
skVA@30%						
Voltage Dip	63	115	105	105	140	92
Generator Model	361CSL1601	361CSL1612	361CSL1600	361CSL1600	361CSL1600	361PSL1632
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	55 (74)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	14 (3.7)
At 75% of Power Rating: L/hr (gal/hr)	10.6 (2.8)
At 50% of Power Rating: L/hr (gal/hr)	7.2 (1.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	23.3 (1,326)
Heat Rejection to Air to Air: kW (BTUM)	7.2 (412)
Heat Radiated to Ambient: kW (BTUM)	5.9 (336)

// Air Requirements

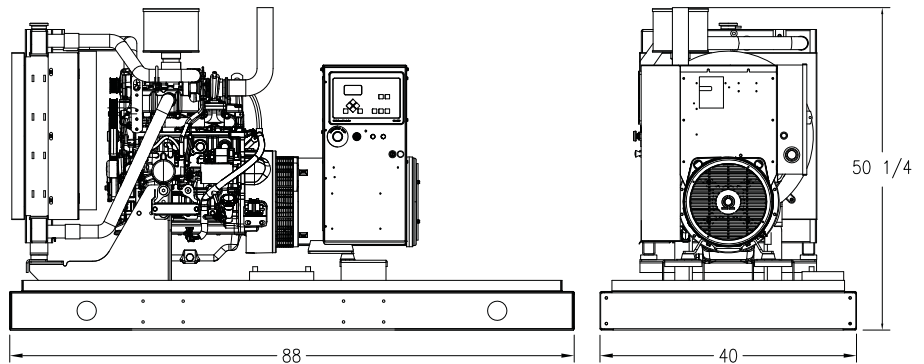
	PRIME
Aspirating: *m ³ /min (SCFM)	3.8 (133)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	22 (757)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	542 (1,008)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	10 (354)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	742 kg (1,636 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	79.4

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
3.2	0.8	0.15

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

45 kWe / 60 Hz / Prime
208 - 600V

(Reference DS50D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP45D6SGA	DP45D6SDA	DP45D6SPA	DP45D6SJA	DP45D6SRA	DP45D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	45	45	45	45	45	45
kVA	45	45	56.25	56.25	56.25	56.25
AMPS	188	188	156	135	68	54
skVA@30%						
Voltage Dip	127	130	129	129	172	138
Generator Model	362CSL1606	361CSL1613	361CSL1601	361CSL1601	361CSL1601	361PSL1633
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4024HF285 Diesel Engine
 - 2.4 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4024HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	2.4 (146)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kW _m (bhp)	55 (74)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	7.9 (2.1)
Engine Jacket Water Capacity: L (gal)	2.6 (0.68)
System Coolant Capacity: L (gal)	11.4 (3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	14 (3.7)
At 75% of Power Rating: L/hr (gal/hr)	11 (2.9)
At 50% of Power Rating: L/hr (gal/hr)	7.6 (2)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	27.4 (1,560)
Heat Rejection to Air to Air: kW (BTUM)	8.5 (484)
Heat Radiated to Ambient: kW (BTUM)	7.4 (420)

// Air Requirements

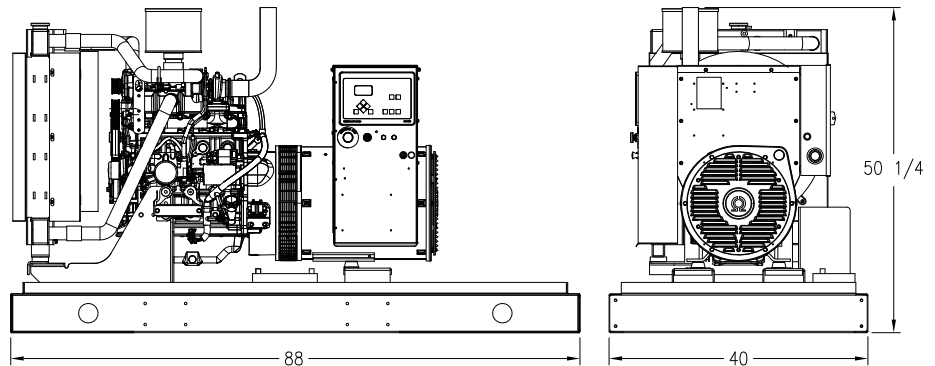
	PRIME
Aspirating: *m ³ /min (SCFM)	4 (140)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	156 (5,506)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	27 (948)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	554 (1,029)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	10.9 (385)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System Open Power Unit (OPU)	Dimensions (L x W x H) 2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	Weight (dry/less tank) 842 kg (1,857 lb)
--	--	--

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type Level 0: Open Power Unit (dBA)	Prime Full Load 79.4
--	--------------------------------

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC 3.2	CO 0.8	PM 0.15
-------------------------------------	------------------	-------------------

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
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Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

51 kWe / 60 Hz / Prime
208 - 600V

(Reference DS60D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP51D6SGA	DP51D6SDA	DP51D6SPA	DP51D6SJA	DP51D6SRA	DP51D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	51	51	51	51	51	51
kVA	51	51	63.75	63.75	63.75	63.75
AMPS	212.5	212.5	177	153	77	61
skVA@30%						
Voltage Dip	119	232	200	200	266	138
Generator Model	362CSL1604	362CSL1615	361CSL1602	361CSL1602	361CSL1602	361PSL1634
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 5030HF285 Diesel Engine
 - 3.0 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	5030HF285
Type	4-Cycle
Arrangement	5-Inline
Displacement: L (in ³)	3.05 (186)
Bore: cm (in)	8.6 (3.4)
Stroke: cm (in)	10.5 (4.1)
Compression Ratio	18.2:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	65 (87)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	11.2 (2.96)
Engine Jacket Water Capacity: L (gal)	2.9 (0.78)
System Coolant Capacity: L (gal)	15.4 (4.08)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	82 (21.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	17.4 (4.6)
At 75% of Power Rating: L/hr (gal/hr)	12.9 (3.4)
At 50% of Power Rating: L/hr (gal/hr)	8.3 (2.3)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	100 (26)
Heat Rejection to Coolant: kW (BTUM)	42.7 (2,430)
Heat Rejection to Air to Air: kW (BTUM)	10.52 (598)
Heat Radiated to Ambient: kW (BTUM)	10.46 (595)

// Air Requirements

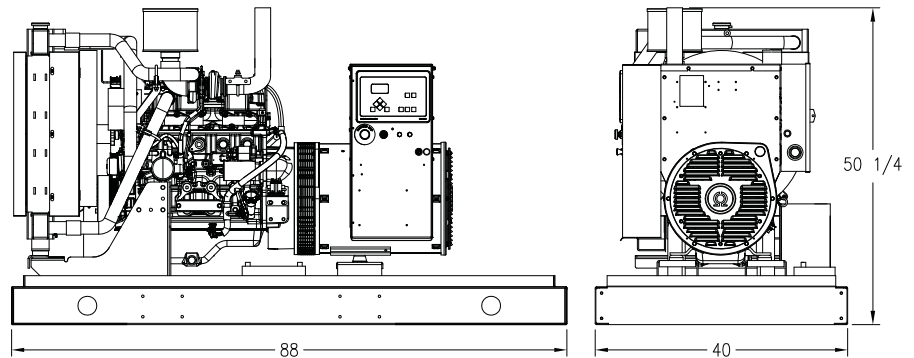
	PRIME
Aspirating: *m ³ /min (SCFM)	5.1 (179)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	158 (5,570)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	38 (1,341)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	505 (941)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	13 (459)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)
Minimum Allowable	
Back Pressure: kPa (in. H ₂ O)	4 (16)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	2,235 x 1,016 x 1,276 mm (88 x 40 x 50.25 in)	883 kg (1,947 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	79.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
3.4	0.8	0.15

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

80 kWe / 60 Hz / Prime
208 - 600V

(Reference DS80D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP80D6SGA	DP80D6SDA	DP80D6SPA	DP80D6SJA	DP80D6SRA	DP80D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	80	80	80	80	80	80
kVA	80	80	100	100	100	100
AMPS	333	333	278	241	120	96
skVA@30%						
Voltage Dip	157	310	258	258	288	235
Generator Model	363CSL1607	363CSL1617	362CSL1606	362CSL1606	362CSL1604	362PSL1635
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.5 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	107 (144)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	12 (3.2)
Engine Jacket Water Capacity: L (gal)	12.5 (3.3)
System Coolant Capacity: L (gal)	20.1 (5.3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	74.6 (19.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	23.1 (6.1)
At 75% of Power Rating: L/hr (gal/hr)	18.5 (4.9)
At 50% of Power Rating: L/hr (gal/hr)	13.2 (3.5)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	56 (3,190)
Heat Rejection to Air to Air: kW (BTUM)	17.6 (1,002)
Heat Radiated to Ambient: kW (BTUM)	10.5 (596)

// Air Requirements

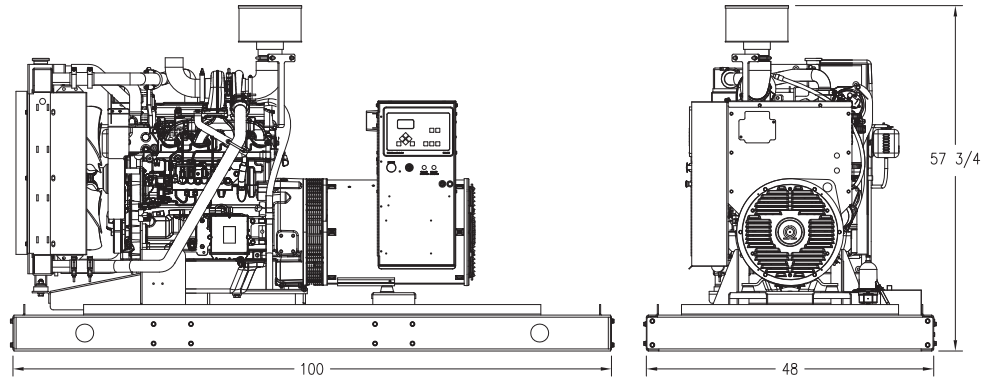
	PRIME
Aspirating: *m ³ /min (SCFM)	7.7 (273)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	187 (6,587)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	38 (1,343)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	560 (1,040)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	21.2 (750)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,467 mm (100 x 48 x 57.75 in)	867 kg (1,912 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	83.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

90 kWe / 60 Hz / Prime
208 - 600V

(Reference DS100D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP90D6SGA	DP90D6SDA	DP90D6SPA	DP90D6SJA	DP90D6SRA	DP90D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	90	90	90	90	90	90
kVA	90	90	112.5	112.5	112.5	112.5
AMPS	375	375	312	271	135	108
skVA@30%						
Voltage Dip	136	193	323	323	430	333
Generator Model	431CSL6204	431PSL6224	363CSL1607	363CSL1607	363CSL1607	363PSL1658
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.5 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
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 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (8)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	107 (144)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	12 (3.2)
Engine Jacket Water Capacity: L (gal)	12.5 (3.3)
System Coolant Capacity: L (gal)	20.1 (5.3)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	74.6 (19.7)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	28 (7.4)
At 75% of Power Rating: L/hr (gal/hr)	22.3 (5.9)
At 50% of Power Rating: L/hr (gal/hr)	15.9 (4.2)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	56 (3,190)
Heat Rejection to Air to Air: kW (BTUM)	17.6 (1,002)
Heat Radiated to Ambient: kW (BTUM)	13.8 (785)

// Air Requirements

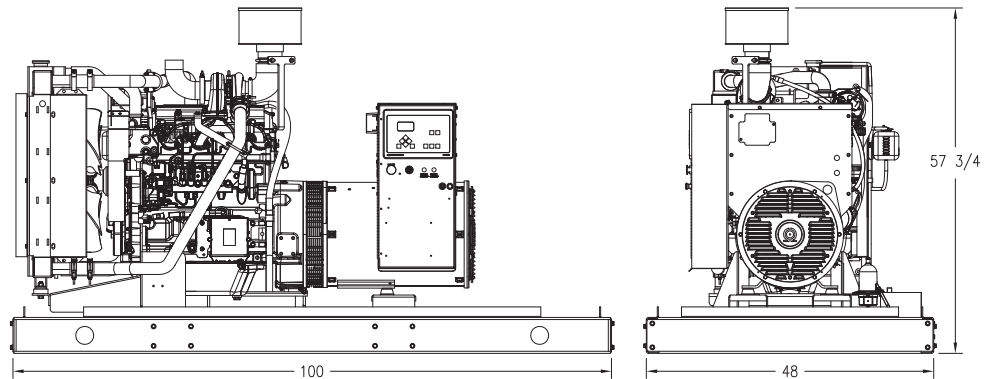
	PRIME
Aspirating: *m ³ /min (SCFM)	7.7 (273)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	187 (6,587)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	50 (1,771)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	560 (1,040)
Gas Volume at Stack Temp: m ³ /min (CFM)	21.2 (750)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,473 mm (100 x 48 x 58 in)	908 kg (2,002 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	83.3

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
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 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

111 kWe / 60 Hz / Prime
208 - 600V

(Reference DS125D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP111D6SGA	DP111D6SDA	DP111D6SPA	DP111D6SJA	DP111D6SRA	DP111D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	111	111	111	111	111	111
kVA	111	111	138.75	138.75	138.75	138.75
AMPS	463	463	385	334	167	134
skVA@30%						
Voltage Dip	187	192	296	296	430	333
Generator Model	431PSL6206	431PSL6224	431CSL6202	431CSL6202	363PSL1607	363PSL1658
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 4045HF285 Diesel Engine
 - 4.58 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG 1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
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 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	4045HF285
Type	4-Cycle
Arrangement	4-Inline
Displacement: L (in ³)	4.5 (275)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	134 (180)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	13 (3.4)
Engine Jacket Water Capacity: L (gal)	8.5 (2.2)
System Coolant Capacity: L (gal)	24 (6.2)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	90.1 (23.8)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	34.6 (9.2)
At 75% of Power Rating: L/hr (gal/hr)	26.9 (7.1)
At 50% of Power Rating: L/hr (gal/hr)	21.2 (5.6)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	64.1 (3,643)
Heat Rejection to Air to Air: kW (BTUM)	22.8 (1,295)
Heat Radiated to Ambient: kW (BTUM)	17.1 (972)

// Air Requirements

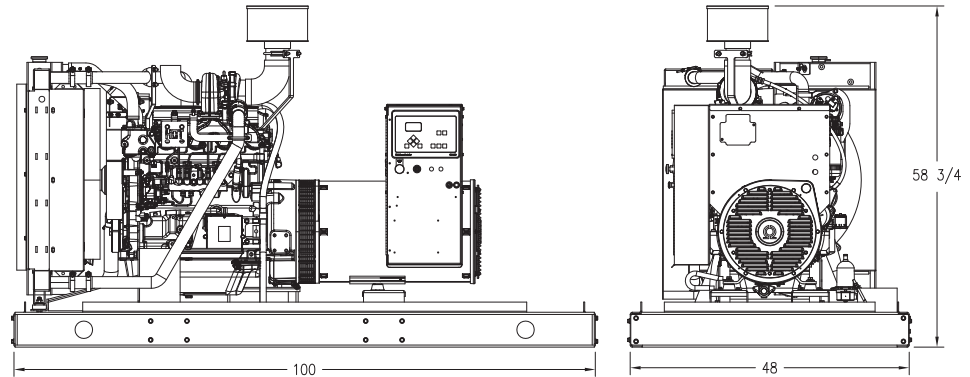
	PRIME
Aspirating: *m ³ /min (SCFM)	8.8 (311)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	433 (15,303)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	61 (2,159)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	572 (1,062)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	24.6 (869)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,540 x 1,219 x 1,499 mm (100 x 48 x 59 in)	971 kg (2,140 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	86.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.9	1.3	0.14

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

135 kWe / 60 Hz / Prime
208 - 600V

(Reference DS 150D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP135D6SGA	DP135D6SDA	DP135D6SPA	DP135D6SJA	DP135D6SRA	DP135D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	1	1	3	3	3	3
PF	1.0	1.0	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	135	135	135	135	135	135
kVA	135	135	168.75	168.75	168.75	168.75
AMPS	563	563	468	406	203	162
skVA@30%						
Voltage Dip	267	310	339	339	451	375
Generator Model	432CSL6210	431PSL6226	431CSL6204	431CSL6204	431CSL6204	431PSL6242
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD ZIG-ZAG	4 LEAD	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6068HF285 Diesel Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 $\pm 1\%$ Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	6068HF285
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	10.6 (4.19)
Stroke: cm (in)	12.7 (5)
Compression Ratio	19:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	161 (216)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	20 (5.28)
Engine Jacket Water Capacity: L (gal)	12.3 (3.25)
System Coolant Capacity: L (gal)	22.7 (6)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	107.2 (28.3)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	40.1 (10.6)
At 75% of Power Rating: L/hr (gal/hr)	31.4 (8.3)
At 50% of Power Rating: L/hr (gal/hr)	22.7 (6)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	180 (48)
Heat Rejection to Coolant: kW (BTUM)	84.3 (4,792)
Heat Rejection to Air to Air: kW (BTUM)	30 (1,702)
Heat Radiated to Ambient: kW (BTUM)	21.8 (1,239)

// Air Requirements

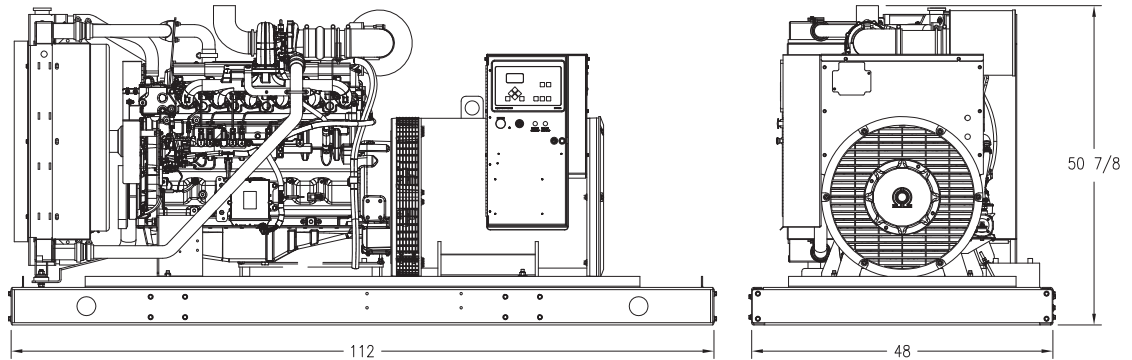
	PRIME
Aspirating: *m ³ /min (SCFM)	13.3 (470)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	304 (10,732)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	80 (2,794)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	491 (916)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	33 (1,165)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	7.5 (30)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,845 x 1,219 x 1,283 mm (112 x 48 x 50.5 in)	1,592 kg (3,510 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	86.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.6	0.8	0.09

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

180 kWe / 60 Hz / Prime
208 - 600V

(Reference DS180D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP180D6SGA	DP180D6SDA	DP180D6SPA	DP180D6SJA	DP180D6SRA	DP180D6SNA
Voltage (L-L)	240V**	240V**	208V**	240V**	480V**	600V**
Phase	C/F	C/F	3	3	3	3
PF	C/F	C/F	0.8	0.8	0.8	0.8
Hz	C/F	C/F	60	60	60	60
kW	C/F	C/F	180	180	180	180
kVA	C/F	C/F	225	225	225	225
AMPS	C/F	C/F	625	541	271	217
skVA@30%						
Voltage Dip	C/F	C/F	454	454	577	510
Generator Model	C/F	C/F	431CSL6208	431CSL6208	431CSL6206	431PSL6243
Temp Rise	C/F	C/F	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	C/F	C/F	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **Seismic Certification – Optional**
 - IBC Certification
 - OSHPD Pre-Approval
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 6068HFG85 Diesel Engine
 - 6.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Fuel Filter with Water Separator
 Jacket Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 12V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 12V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Solid State, Volts-per-Hertz Regulator
 ±1% Voltage Regulation No Load to Full Load
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field

105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	John Deere
Model	6068HFG85
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (in ³)	6.8 (415)
Bore: cm (in)	10.6 (4.2)
Stroke: cm (in)	12.7 (5)
Compression Ratio	17:1
Rated RPM	1,800
Engine Governor	JDEC
Maximum Power: kWm (bhp)	214 (286)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	32.2 (8.5)
Engine Jacket Water Capacity: L (gal)	11.9 (3.3)
System Coolant Capacity: L (gal)	29.3 (7.75)

// Electrical

Electric Volts DC	12
Cold Cranking Amps Under -17.8 °C (0 °F)	925

// Fuel System

Fuel Supply Connection Size	3/8" NPT
Fuel Return Connection Size	3/8" NPT
Maximum Fuel Lift: m (ft)	2 (6.7)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	93 (24.5)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	51.9 (13.5)
At 75% of Power Rating: L/hr (gal/hr)	40.5 (10.7)
At 50% of Power Rating: L/hr (gal/hr)	27.6 (7.3)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	265 (70)
Heat Rejection to Coolant: kW (BTUM)	83.7 (4,766)
Heat Rejection to Air to Air: kW (BTUM)	40 (2,298)
Heat Radiated to Ambient: kW (BTUM)	25.5 (1,453)

// Air Requirements

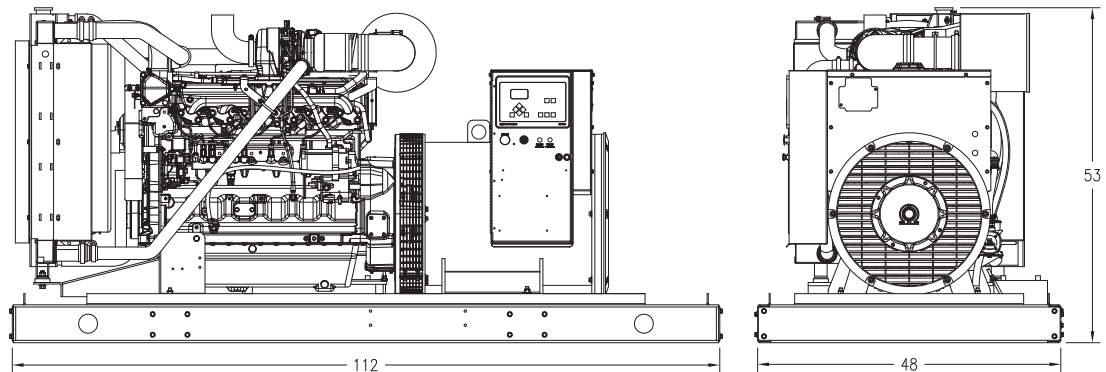
	PRIME
Aspirating: *m ³ /min (SCFM)	14.7 (520)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	412 (14,537)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	93 (3,277)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	528 (982)
Gas Volume at Stack Temp: m ³ /min (CFM)	38.8 (1,371)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	10 (40)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	2,845 x 1,219 x 1,346 mm (112 x 48 x 53 in)	1,751 kg (3,860 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	87.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
2.8	0.4	0.04

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, overload power in accordance with ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

210 kWe / 60 Hz / Prime
208 - 600V

(Reference DS230D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP210D6SPA	DP210D6SJA	DP210D6SVA	DP210D6SWA	DP210D6SRA	DP210D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	210	210	210	210	210	210
kVA	262	262	262	262	262	262
AMPS	729	631	399	344	316	253
skVA@30%						
Voltage Dip	608	608	430	580	604	510
Generator Model	432CSL6210	432CSL6210	432CSL6210	431CSL6208	431CSL6208	431PSL6243
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**
- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G10S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kW _m (bhp)	284 (381)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	62 (16.4)
At 75% of Power Rating: L/hr (gal/hr)	49 (12.9)
At 50% of Power Rating: L/hr (gal/hr)	35 (9.3)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	129 (7,336)
Heat Rejection to After Cooler: kW (BTUM)	76 (4,322)
Heat Radiated to Ambient: kW (BTUM)	30.2 (1,717)

// Air Requirements

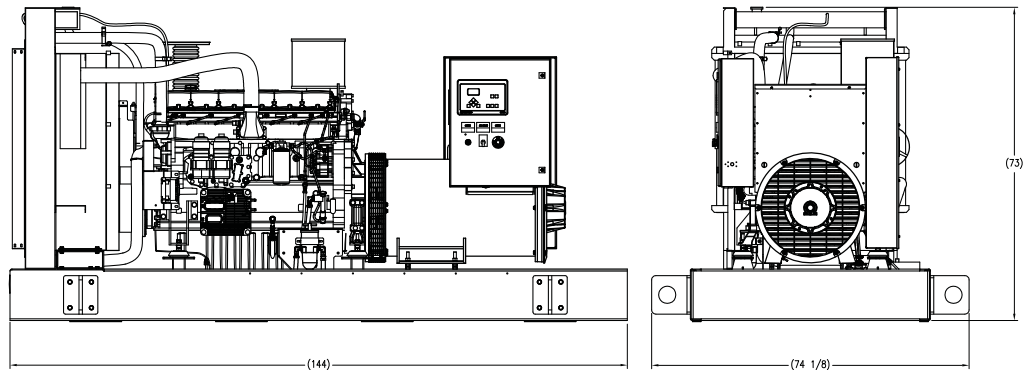
	PRIME
Aspirating: *m ³ /min (SCFM)	30 (1,059)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	109.7 (3,873)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	440 (824)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

230 kWe / 60 Hz / Prime
208 - 600V

(Reference DS250D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP230D6SPA	DP230D6SJA	DP230D6SVA	DP230D6SWA	DP230D6SRA	DP230D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	230	230	230	230	230	230
kVA	287	287	287	287	287	287
AMPS	798	692	437	377	346	277
skVA@30%						
Voltage Dip	608	608	430	580	809	740
Generator Model	432CSL6210	432CSL6210	432CSL6210	432CSL6210	432CSL6210	432PSL6246
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G10S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	284 (382)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	67 (17.7)
At 75% of Power Rating: L/hr (gal/hr)	53 (14)
At 50% of Power Rating: L/hr (gal/hr)	38 (10)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	129 (7,336)
Heat Rejection to After Cooler: kW (BTUM)	76 (4,322)
Heat Radiated to Ambient: kW (BTUM)	30.2 (1,717)

// Air Requirements

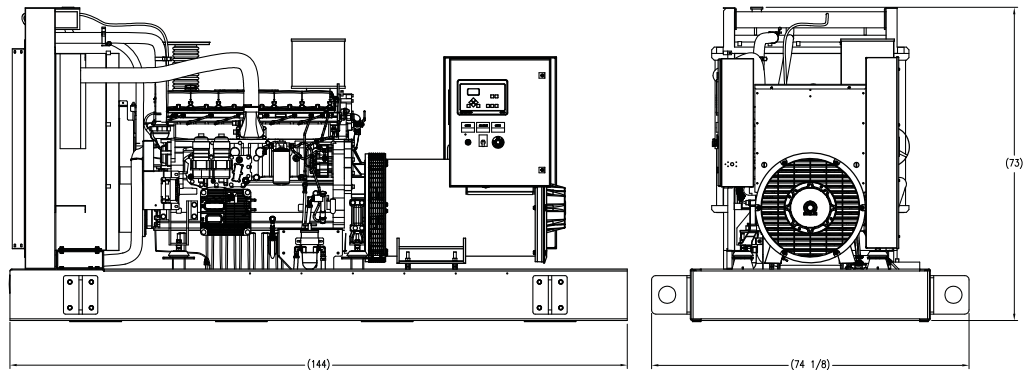
	PRIME
Aspirating: *m ³ /min (SCFM)	30 (1,059)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	109.7 (3,873)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	440 (824)
Gas Volume at Stack Temp: m ³ /min (CFM)	72 (2,542)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

250 kWe / 60 Hz / Prime
208 - 600V

(Reference DS275D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP250D6SPA	DP250D6SJA	DP250D6SVA	DP250D6SWA	DP250D6SRA	DP250D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	250	250	250	250	250	250
kVA	312	312	312	312	312	312
AMPS	867	752	475	410	376	301
skVA@30%						
Voltage Dip	930	930	640	860	809	720
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	432CSL6210	432PSL6246
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 6R1600 Diesel Engine
 - 10.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
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 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105°C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
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 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G10S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	284 (381)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	72 (19.1)
At 75% of Power Rating: L/hr (gal/hr)	56 (14.8)
At 50% of Power Rating: L/hr (gal/hr)	41 (10.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	129 (7,336)
Heat Rejection to After Cooler: kW (BTUM)	76 (4,322)
Heat Radiated to Ambient: kW (BTUM)	30.2 (1,717)

// Air Requirements

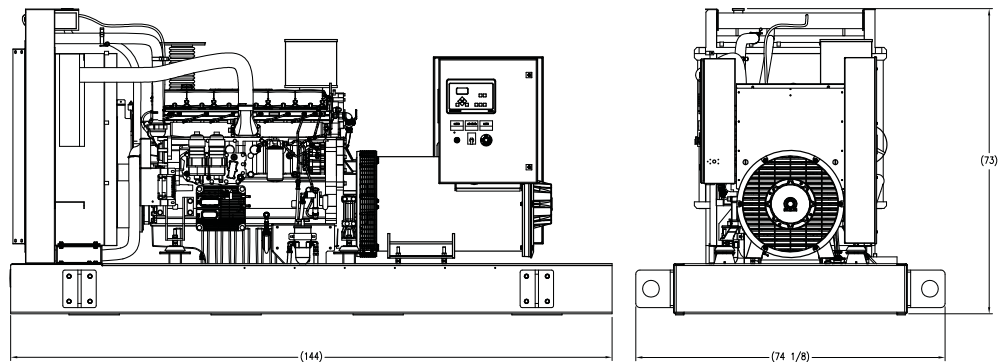
	PRIME
Aspirating: *m ³ /min (SCFM)	18 (635.7)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	109.7 (3,873)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	390 (734)
Gas Volume at Stack Temp: m ³ /min (CFM)	60 (2,118.9)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



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System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

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SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.71

CO

0.61

PM

0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

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Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

275 kWe / 60 Hz / Prime
208 - 600V

(Reference DS300D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP275D6SPA	DP275D6SJA	DP275D6SVA	DP275D6SWA	DP275D6SRA	DP275D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	275	275	275	275	275	275
kVA	343	343	343	343	343	343
AMPS	954	827	522	451	413	331
skVA@30%						
Voltage Dip	930	930	640	860	1238	720
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	432CSL6216	432PSL6246
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
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// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
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 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with Optional PMG
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
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 Base - Formed Steel
 SAE Flywheel & Bell Housing
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 Battery Box & Cables
 Flexible Fuel Connectors
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 EPA Certified Engine

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 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
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 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
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 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±1% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	6R1600G20S
Type	4-Cycle
Arrangement	6-Inline
Displacement: L (Cu In)	10.5 (641)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	ECU 8
Max Power: kWm (bhp)	312 (418)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	45 (11.9)
System Coolant Capacity: L (gal)	82 (21.7)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	950

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	198 (60.4)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	76 (20.2)
At 75% of Power Rating: L/hr (gal/hr)	59 (15.7)
At 50% of Power Rating: L/hr (gal/hr)	45.5 (12)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	277 (73.1)
Heat Rejection to Coolant: kW (BTUM)	154 (8,758)
Heat Rejection to After Cooler: kW (BTUM)	84 (4,777)
Heat Radiated to Ambient: kW (BTUM)	33.1 (1,882)

// Air Requirements

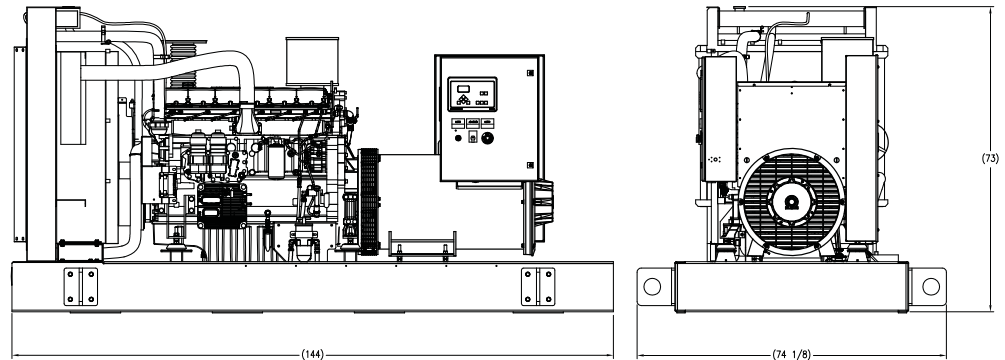
	PRIME
Aspirating: *m ³ /min (SCFM)	24 (847.6)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	396 (13,985)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	120.2 (4,245)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	430 (806)
Gas Volume at Stack Temp: m ³ /min (CFM)	66 (2,330.8)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,658 x 1,883 x 1,855 mm (144 x 74.13 x 73 in)

Weight (dry/less tank)

3,078 kg (6,785 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.16

CO

0.5

PM

0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

325 kWe / 60 Hz / Prime
208 - 600V

(Reference DS350D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP325D6SPA	DP325D6SJA	DP325D6SVA	DP325D6SWA	DP325D6SRA	DP325D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	325	325	325	325	325	325
kVA	407	407	407	407	407	407
AMPS	1128	977	617	533	489	391
skVA@30%						
Voltage Dip	930	930	635	850	1238	1100
Generator Model	433CSL6216	433CSL6216	433CSL6216	433CSL6216	433CSL6216	433PSL6248
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 3 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110
 - Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 8V1600 Diesel Engine
 - 14.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation (570 frame)
 ±1% Voltage Regulation (430 frame)
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	8V1600G10S
Type	4-Cycle
Arrangement	8-V
Displacement: L (Cu In)	14 (854)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	371 (497)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	80.3 (21.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	93 (24.5)
At 75% of Power Rating: L/hr (gal/hr)	78 (20.6)
At 50% of Power Rating: L/hr (gal/hr)	55 (14.5)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	362 (95)
Heat Rejection to Coolant: kW (BTUM)	190 (10,805)
Heat Rejection to After Cooler: kW (BTUM)	95 (5,403)
Heat Radiated to Ambient: kW (BTUM)	40.5 (2,303)

// Air Requirements

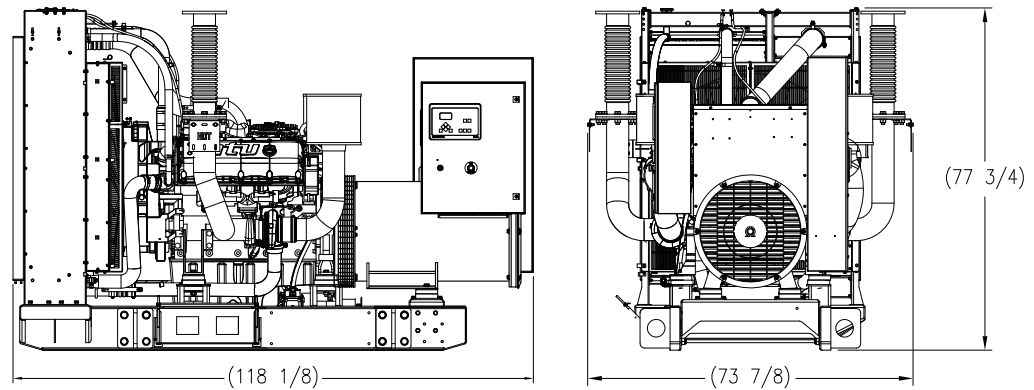
	PRIME
Aspirating: *m ³ /min (SCFM)	30 (1,060)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	510 (18,010)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	147.1 (5,194)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	460 (860)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	84 (2,966)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (61)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,001 x 1,877 x 1,975 mm (118.13 x 73.88 x 77.75 in)	3,652 kg (8,050 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
4.06	0.52	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

365 kWe / 60 Hz / Prime
208 - 600V

(Reference DS400D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP365D6SPA	DP365D6SJA	DP365D6SVA	DP365D6SWA	DP365D6SRA	DP365D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	365	365	365	365	365	365
kVA	457	457	457	457	457	457
AMPS	1266	1098	693	599	549	439
skVA@30%						
Voltage Dip	800	800	640	920	1277	1100
Generator Model	572RSL4025	572RSL4025	572RSL4025	433CSL6220	433CSL6220	433CSL6248
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 8V1600 Diesel Engine
 - 14.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - 300% Short Circuit Capability with PMG
 - o PMG Standard for 570 frame and larger
 - o PMG Optional for 430 frame and smaller
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation (570 frame)
 ±1% Voltage Regulation (430 frame)
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	8V1600G20S
Type	4-Cycle
Arrangement	8-V
Displacement: L (Cu In)	14 (854)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kW _m (bhp)	408 (547)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	46 (12.2)
Engine Jacket Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	80.3 (21.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	99 (26.1)
At 75% of Power Rating: L/hr (gal/hr)	80 (21.2)
At 50% of Power Rating: L/hr (gal/hr)	60 (15.8)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	362 (95)
Heat Rejection to Coolant: kW (BTUM)	180 (10,237)
Heat Rejection to After Cooler: kW (BTUM)	81 (4,606)
Heat Radiated to Ambient: kW (BTUM)	44.5 (2,531)

// Air Requirements

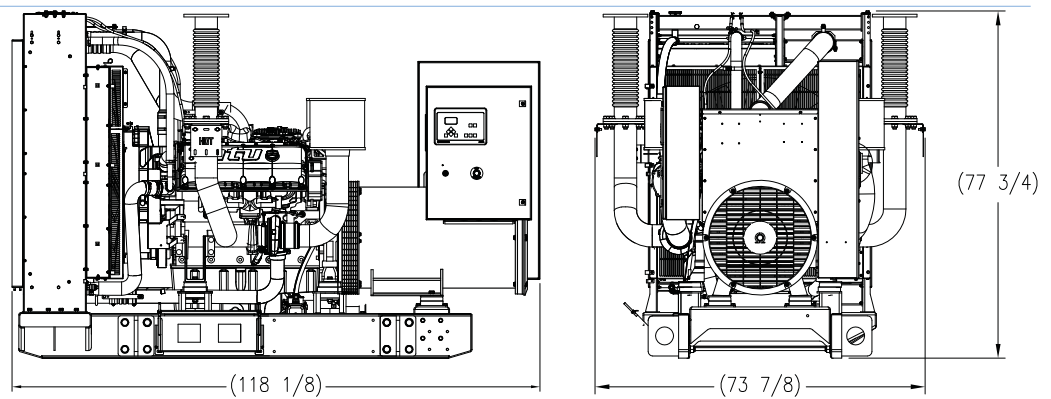
	PRIME
Aspirating: *m ³ /min (SCFM)	31.2 (1,103)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	510 (18,010)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	161.6 (5,708)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	460 (860)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	84 (2,966)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (61)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,001 x 1,877 x 1,975 mm (118.13 x 73.88 x 77.75 in)

Weight (dry/less tank)

3,652 kg (8,050 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

5.01

CO

0.52

PM

0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

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Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

400 kWe / 60 Hz / Prime
208 - 600V

(Reference DS450D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP400D6SPA	DP400D6SJA	DP400D6SVA	DP400D6SWA	DP400D6SRA	DP400D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	400	400	400	400	400	400
kVA	500	500	500	500	500	500
AMPS	1388	1203	760	656	601	481
skVA@30%						
Voltage Dip	790	790	650	900	1090	1040
Generator Model	572RSL4025	572RSL4025	572RSL4025	572RSL4025	572RSL4025	572RSS4270
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 3 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 10V1600 Diesel Engine
 - 17.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	10V1600G70S
Type	4-Cycle
Arrangement	10-V
Displacement: L (Cu In)	17.5 (1,068)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	511 (685)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	61 (16)
Engine Jacket Water Capacity: L (gal)	60 (15.9)
System Coolant Capacity: L (gal)	99.3 (26.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	401.3 (106)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	102 (27)
At 75% of Power Rating: L/hr (gal/hr)	82 (21.7)
At 50% of Power Rating: L/hr (gal/hr)	59 (15.7)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	466 (123)
Heat Rejection to Coolant: kW (BTUM)	225 (12,795)
Heat Rejection to After Cooler: kW (BTUM)	101 (5,744)
Heat Radiated to Ambient: kW (BTUM)	51.8 (2,946)

// Air Requirements

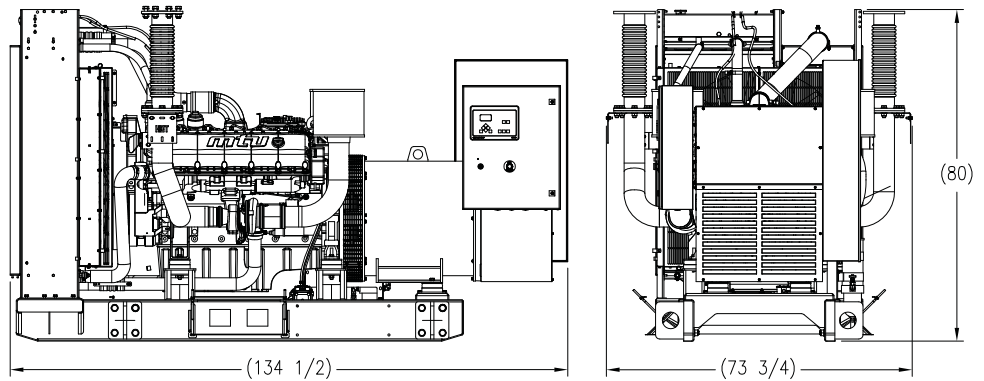
	PRIME
Aspirating: *m ³ /min (SCFM)	34 (1,187)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	642 (22,672)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	188 (6,643)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	459 (858)
Gas Volume at Stack Temp: m ³ /min (CFM)	95 (3,369)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,416 x 1,873 x 2,032 mm (134.50 x 73.75 x 80 in)

Weight (dry/less tank)

4,525 kg (9,975 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

91.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

3.31

CO

0.37

PM

0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

450 kWe / 60 Hz / Prime
208 - 600V

(Reference DS500D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP450D6SPA	DP450D6SJA	DP450D6SVA	DP450D6SWA	DP450D6SRA	DP450D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	450	450	450	450	450	450
kVA	563	563	563	563	563	563
AMPS	1561	1353	855	738	677	541
skVA@30%						
Voltage Dip	790	790	660	900	1090	1040
Generator Model	572RSL4029	572RSL4029	572RSL4029	572RSL4025	572RSL4025	572RSS4270
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 10V1600 Diesel Engine
 - 17.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	10V1600G20S
Type	4-Cycle
Arrangement	10-V
Displacement: L (Cu In)	17.5 (1,068)
Bore: cm (in)	12.2 (4.8)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	511 (685)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	61 (16)
Engine Jacket Water Capacity: L (gal)	60 (15.9)
System Coolant Capacity: L (gal)	99.3 (26.2)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	401.3 (106)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	115 (30.5)
At 75% of Power Rating: L/hr (gal/hr)	91 (24)
At 50% of Power Rating: L/hr (gal/hr)	68 (17.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	466 (123)
Heat Rejection to Coolant: kW (BTUM)	225 (12,795)
Heat Rejection to After Cooler: kW (BTUM)	101 (5,744)
Heat Radiated to Ambient: kW (BTUM)	51.8 (2,946)

// Air Requirements

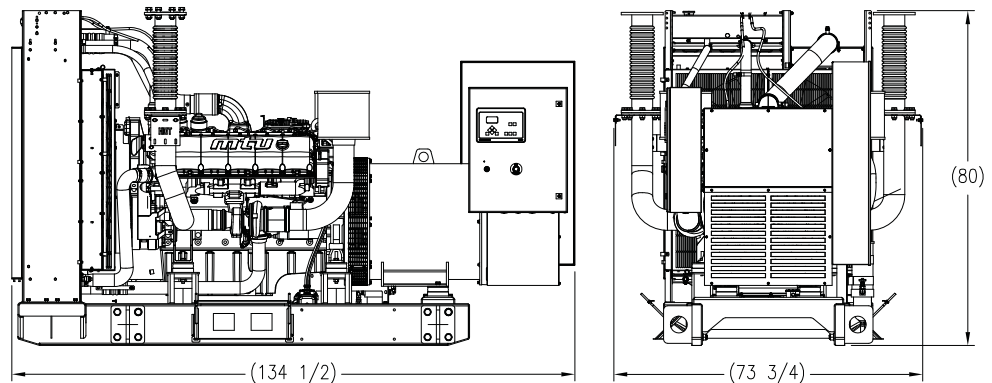
	PRIME
Aspirating: *m ³ /min (SCFM)	34 (1,187)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	642 (22,672)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	188 (6,643)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	459 (858)
Gas Volume at Stack Temp: m ³ /min (CFM)	95 (3,369)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Open Power Unit (OPU)

Dimensions (L x W x H)

3,416 x 1,873 x 2,032 mm (134.50 x 73.75 x 80 in)

Weight (dry/less tank)

4,525 kg (9,975 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit (dBA)

Prime Full Load

93.4

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

6.9

CO

0.45

PM

0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

500 kWe / 60 Hz / Prime
208 - 600V

(Reference DS550D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP500D6SPA	DP500D6SJA	DP500D6SVA	DP500D6SWA	DP500D6SRA	DP500D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	500	500	500	500	500	500
kVA	625	625	625	625	625	625
AMPS	1735	1504	950	820	752	601
skVA@30%						
Voltage Dip	1040	1040	960	1160	1500	1430
Generator Model	572RSL4033	572RSL4033	573RSL4033	572RSL4031	572RSL4029	572RSS4272
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // 2 Year Standard Warranty
- // 12V1600 Diesel Engine
 - 21.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-generator resilient mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
- // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V1600G10S
Type	4-Cycle
Arrangement	12-V
Displacement: L (Cu In)	21 (1,281)
Bore: cm (in)	12 (4.72)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	561 (752)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	73 (19.3)
Engine Jacket Water Capacity: L (gal)	65 (17.2)
System Coolant Capacity: L (gal)	106 (28.1)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106.2)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	132.5 (35)
At 75% of Power Rating: L/hr (gal/hr)	101.8 (26.9)
At 50% of Power Rating: L/hr (gal/hr)	70.4 (18.6)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	517 (137)
Heat Rejection to Coolant: kW (BTUM)	223 (12,681)
Heat Rejection to After Cooler: kW (BTUM)	124 (7,051)
Heat Radiated to Ambient: kW (BTUM)	56.9 (3,236)

// Air Requirements

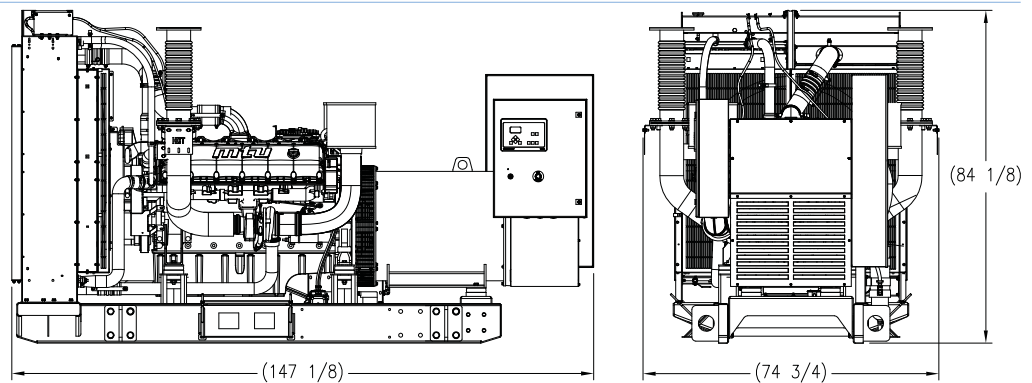
	PRIME
Aspirating: *m ³ /min (SCFM)	47 (1,653)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	756 (26,700)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	207 (7,298)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	401 (754)
Gas Volume at Stack Temp: m ³ /min (CFM)	114 (4,026)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,737 x 1,899 x 2,137 mm (147.13 x 74.75 x 84.13 in)	4,936 kg (10,880 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	90.1

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
4.97	0.26	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

550 kWe / 60 Hz / Prime
208 - 600V

(Reference DS600D6S for Standby Rating Technical Data)



SYSTEM RATINGS

Prime	DP550D6SPA	DP550D6SJA	DP550D6SVA	DP550D6SWA	DP550D6SRA	DP550D6SNA
Voltage (L-L)	208V**	240V**	380V	440V	480V**	600V**
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	550	550	550	550	550	550
kVA	687	687	687	687	687	687
AMPS	1908	1654	1045	902	827	662
skVA@30%						
Voltage Dip	1200	1200	1225	1400	1440	1325
Generator Model	573RSL4033	573RSL4033	573RSL4035	573RSL4033	573RSL4033	573RSS4274
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

- // **Emissions** – EPA Tier 2 Certified
- // **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**
- // **UL 2200 / CSA – Optional**
 - UL 2200 Listed
 - CSA Certified
- // **Performance Assurance Certification (PAC)**
 - Engine-Generator Set Tested to ISO 8528-5 for Transient Response
 - Verified product design, quality and performance integrity
 - All engine systems are prototype and factory tested
- // **Power Rating**
 - Accepts Rated Load in One Step Per NFPA 110
 - Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
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 - // 2 Year Standard Warranty
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 - 21.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V1600G20S
Type	4-Cycle
Arrangement	12-V
Displacement: L (Cu In)	21 (1,281)
Bore: cm (in)	12 (4.72)
Stroke: cm (in)	15 (5.91)
Compression Ratio	17.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: kWm (bhp)	608 (815)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	73 (19.3)
Engine Jacket Water Capacity: L (gal)	65 (17.2)
System Coolant Capacity: L (gal)	106 (28.1)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	#10 JIC 37° Female M20 x 1.5 Male Adapter Provided
Fuel Return Connection Size	#6 JIC 37° Female M14 x 1.5 Male Adapter Provided
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	402 (106.2)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	140 (37)
At 75% of Power Rating: L/hr (gal/hr)	106 (28)
At 50% of Power Rating: L/hr (gal/hr)	75 (19.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	517 (136.5)
Heat Rejection to Coolant: kW (BTUM)	242 (13,762)
Heat Rejection to After Cooler: kW (BTUM)	150 (8,530)
Heat Radiated to Ambient: kW (BTUM)	59.7 (3,395)

// Air Requirements

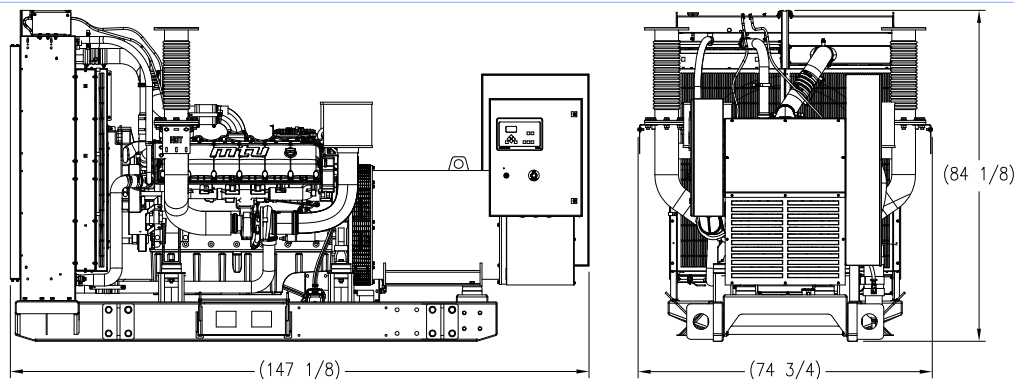
	PRIME
Aspirating: *m ³ /min (SCFM)	53 (1,865)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	756 (26,700)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	217 (7,657)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	414 (777)
Gas Volume at Stack Temp: m ³ /min (CFM)	126 (4,450)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	3,737 x 1,899 x 2,137 mm (147.13 x 74.75 x 84.13 in)	5,118 kg (11,282 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	91.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.37	0.3	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

615-XC6DT2

615 kWe / 60 Hz / Prime
208 - 4160V

(Reference 650-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	615	615	615	615	615	615
kVA	768.75	768.75	769	768.75	768.75	768.75
AMPS	2134	1849	1169	925	740	107
skVA@30%						
Voltage Dip	1750	1750	1600	1750	1350	1850
Generator Model*	573RSL4033	573RSL4033	574RSL4037	573RSL4033	573RSS4274	574FSM4358
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G45TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	710 (952)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480 (127)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	176 (46.5)
At 75% of Power Rating: L/hr (gal/hr)	132.9 (35.1)
At 50% of Power Rating: L/hr (gal/hr)	90.5 (23.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	245 (13,932)
Heat Rejection to After Cooler: kW (BTUM)	215 (12,226)
Heat Radiated to Ambient: kW (BTUM)	73.1 (4,157)

// Air Requirements

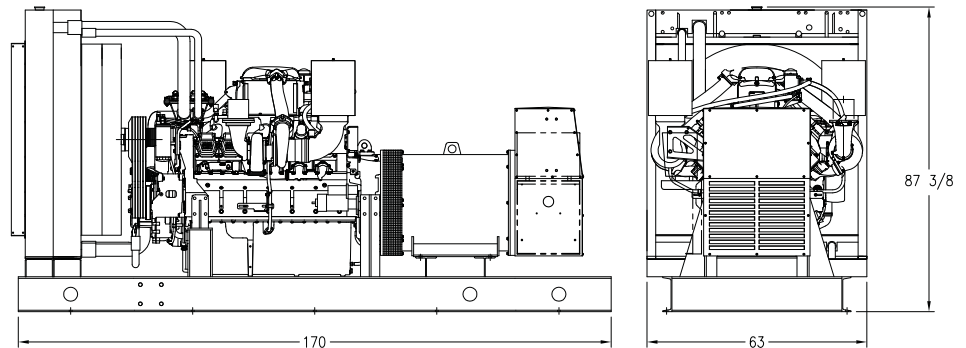
	PRIME
Aspirating: *m ³ /min (SCFM)	60 (2,119)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,132 (39,977)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	265 (9,375)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	535 (995)
Gas Volume at Stack Temp: m ³ /min (CFM)	150 (5,297)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,320 x 1,600 x 2,219 mm (170 x 63 x 87.4 in)	5,492 kg (12,108 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	92.0

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.46	0.35	0.02

All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

680-XC6DT2

680 kWe / 60 Hz / Prime
208 - 4160V

(Reference 750-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	680	680	680	680	680	680
kVA	850	850	850	850	850	850
AMPS	2359	2045	1293	1022	818	118
skVA@30%						
Voltage Dip	2600	2600	1850	2120	3050	1850
Generator Model*	574RSL4037	574RSL4037	575RSL4044	573RSL4035	574RSS4278	574FSM4358
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G85TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	810 (1,086)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	199.1 (52.6)
At 75% of Power Rating: L/hr (gal/hr)	149.9 (39.6)
At 50% of Power Rating: L/hr (gal/hr)	101.4 (26.8)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	280 (15,923)
Heat Rejection to After Cooler: kW (BTUM)	245 (13,932)
Heat Radiated to Ambient: kW (BTUM)	76.5 (4,350)

// Air Requirements

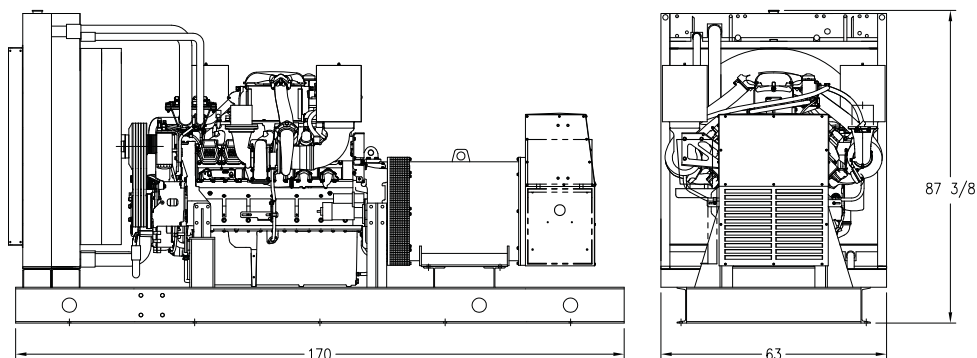
	PRIME
Aspirating: *m ³ /min (SCFM)	2,225 (63)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,132 (39,997)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	278 (9,811)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	560 (1,040)
Gas Volume at Stack Temp: m ³ /min (CFM)	160 (5,721)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,320 x 1,600 x 2,219 mm (170 x 63 x 87.4 in)	5,592 kg (12,328 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	91.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.68	0.44	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

725-XC6DT2

725 kWe / 60 Hz / Prime
208 - 4160V

(Reference 800-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	725	725	725	725	725	725
kVA	906	906	906	906	906	906
AMPS	2518	2182	1379	1091	873	125
skVA@30%						
Voltage Dip	1800	1800	1850	2500	2825	2600
Generator Model*	741RSL4045	741RSL4045	575RSL4044	574RSL4038	574RSS4280	742FSM4364
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	4 LEAD WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 2000 Diesel Engine
 - 23.9 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V2000G85TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	810 (1,086)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	316 (83.5)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#12 JIC 37° Female 3/4" NPT Adapter Provided
Fuel Return Connection Size	#4 JIC 37° Female 1/4" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	199.1 (52.6)
At 75% of Power Rating: L/hr (gal/hr)	149.9 (39.6)
At 50% of Power Rating: L/hr (gal/hr)	101.4 (26.8)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	280 (15,923)
Heat Rejection to After Cooler: kW (BTUM)	245 (13,932)
Heat Radiated to Ambient: kW (BTUM)	76.5 (4,350)

// Air Requirements

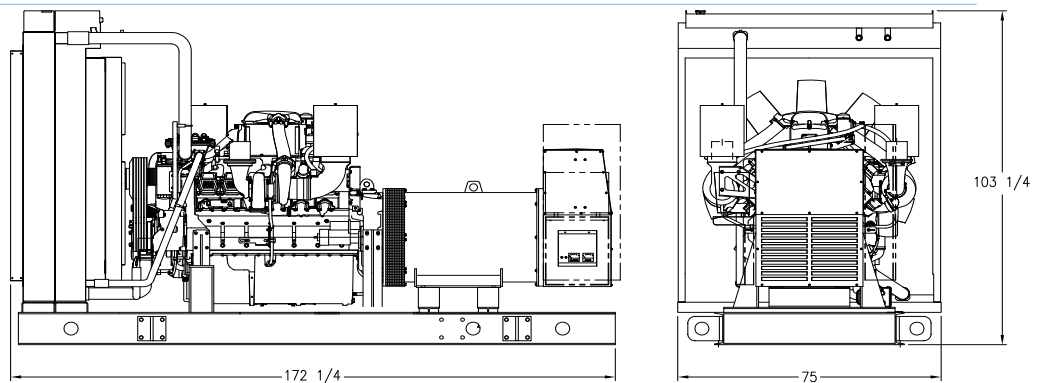
	PRIME
Aspirating: *m ³ /min (SCFM)	63 (2,225)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,120 (39,554)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	278 (9,811)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	560 (1,040)
Gas Volume at Stack Temp: m ³ /min (CFM)	160 (5,721)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,320 x 1,600 x 2,200 mm (170 x 63 x 86.5 in)	5,737 kg (12,648 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	88.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.68	0.44	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

800-XC6DT2

800 kWe / 60 Hz / Prime
208 - 4160V

(Reference 900-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	800	800	800	800	800	800
kVA	1000	1000	1000	1000	1000	1000
AMPS	2776	2406	1521	1203	962	139
skVA@30%						
Voltage Dip	2600	2600	1850	2500	2850	1950
Generator Model*	741RSL4045	741RSL4045	740RSL4046	574RSL4037	574RSS4280	741FSM4360
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 2000 Diesel Engine
 - 31.8 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V2000G45TB
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	31.8 (1,943)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	915 (1,227)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	102 (26.9)
Engine Jacket Water Capacity: L (gal)	130 (34.3)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	415 (110)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	221.4 (58.5)
At 75% of Power Rating: L/hr (gal/hr)	169.2 (44.7)
At 50% of Power Rating: L/hr (gal/hr)	15.4 (30.5)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	320 (18,197)
Heat Rejection to After Cooler: kW (BTUM)	265 (15,070)
Heat Radiated to Ambient: kW (BTUM)	92.5 (5,260)

// Air Requirements

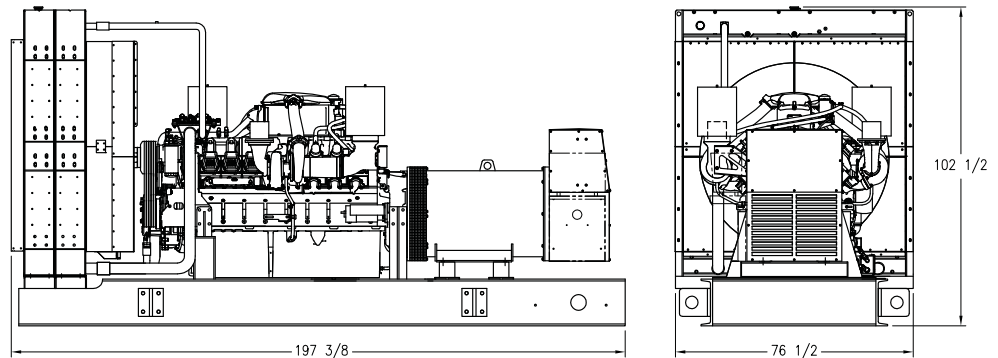
	PRIME
Aspirating: *m ³ /min (SCFM)	81 (2,860)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,133 (40,013)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	336 (11,863)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	520 (968)
Gas Volume at Stack Temp: m ³ /min (CFM)	190 (6,780)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	5,010 x 1,940 x 2,600 mm (197.4 x 76.5 x 102.5 in)	7,733 kg (17,047 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	92.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.36	0.35	0.03

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

900-XC6DT2

900 kWe / 60 Hz / Prime
208 - 4160V

(Reference 1000-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	208V**	240V**	380V	480V**	600V**	4160V
Phase	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60
kW	900	900	900	900	900	900
kVA	1125	1125	1125	1125	1125	1125
AMPS	3123	2706	1711	1353	1083	156
skVA@30%						
Voltage Dip	2600	2600	1850	3200	1550	2600
Generator Model*	741RSL4045	741RSL4045	742RSL4048	575RSL4044	741RSS4282	742FSM4364
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 2000 Diesel Engine
 - 31.8 Liter Displacement
 - Electronic Unit Pump Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V2000G85TB
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	31.8 (1,943)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,010 (1,354)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	102 (26.9)
Engine Jacket Water Capacity: L (gal)	130 (34.3)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	415 (110)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480.7 (127)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	243.4 (64.3)
At 75% of Power Rating: L/hr (gal/hr)	186.2 (49.2)
At 50% of Power Rating: L/hr (gal/hr)	126.4 (33.4)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	355 (20,188)
Heat Rejection to After Cooler: kW (BTUM)	290 (16,491)
Heat Radiated to Ambient: kW (BTUM)	87.4 (4,970)

// Air Requirements

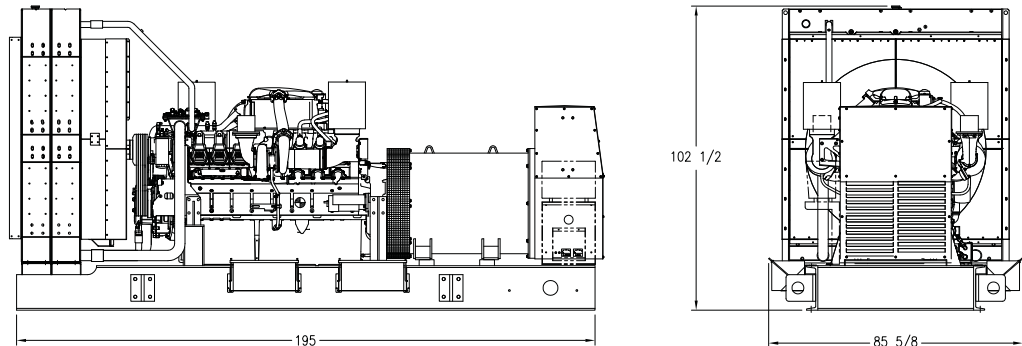
	PRIME
Aspirating: *m ³ /min (SCFM)	84 (2,966)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,133 (40,013)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	317 (11,209)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	530 (986)
Gas Volume at Stack Temp: m ³ /min (CFM)	210 (7,416)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	4,953 x 2,175 x 2,603 mm (195 x 85.63 x 102.5 in)	8,077 kg (17,807 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	97.7

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
4.59	0.35	0.02

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1125-XC6DT2

1125 kWe / 60 Hz / Prime
380 - 4160V

(Reference 1250-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1125	1125	1125	1125
kVA	1406	1406.25	1406.25	1406.25
AMPS	2139	1692	1353	195
skVA@30%				
Voltage Dip	2700	3100	4650	3100
Generator Model*	743RSL4052	742RSL4048	743RSS4288	742FSM4366
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostat
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G43 (T1238A34)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,520 (2,038)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	309 (81.5)
At 75% of Power Rating: L/hr (gal/hr)	238 (62.9)
At 50% of Power Rating: L/hr (gal/hr)	176 (46.4)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	524 (29,788)
Heat Rejection to After Cooler: kW (BTUM)	366 (20,831)
Heat Radiated to Ambient: kW (BTUM)	133 (7,562)

// Air Requirements

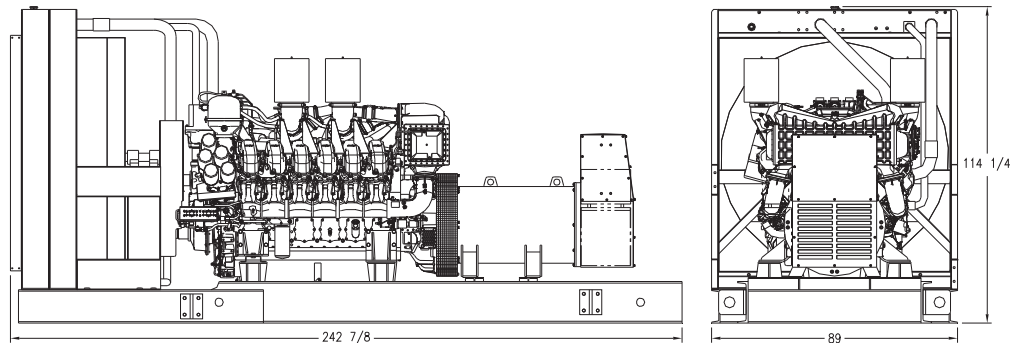
	PRIME
Aspirating: *m ³ /min (SCFM)	126 (4,450)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,518 (53,611)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	486 (17,054)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	400 (752)
Gas Volume at Stack Temp: m ³ /min (CFM)	306 (10,806)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	13,786 kg (30,392 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	91.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.35	0.5	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1400-XC6DT2

1400 kWe / 60 Hz / Prime
380 - 4160V

(Reference 1500-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1400	1400	1400	1400
kVA	1750	1750	1750	1750
AMPS	2662	2105	1684	243
skVA@30%				
Voltage Dip	3350	3500	4800	3900
Generator Model*	744RSL4054	742RSL4050	743RSS4290	743FSM4368
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	12 LEAD HI WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G43 (T1238A34)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,520 (2,038)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	372 (98.2)
At 75% of Power Rating: L/hr (gal/hr)	285 (75.4)
At 50% of Power Rating: L/hr (gal/hr)	200 (52.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	582 (33,098)
Heat Rejection to After Cooler: kW (BTUM)	407 (23,146)
Heat Radiated to Ambient: kW (BTUM)	144 (8,192)

// Air Requirements

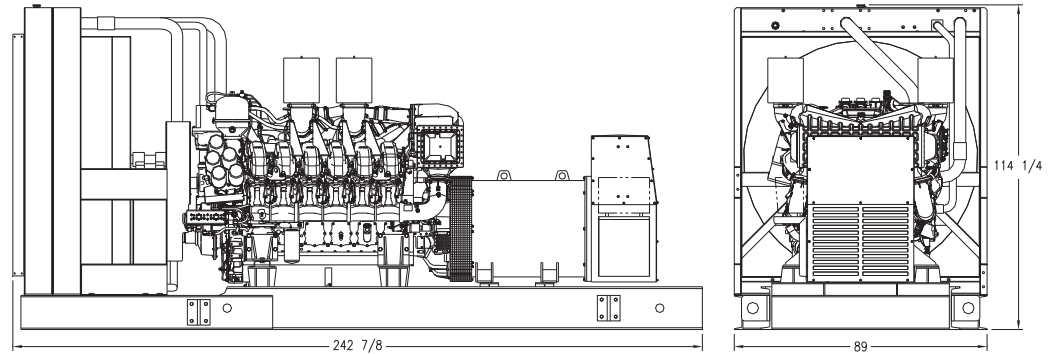
	PRIME
Aspirating: *m ³ /min (SCFM)	132 (4,662)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,518 (53,611)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	526 (18,475)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	410 (770)
Gas Volume at Stack Temp: m ³ /min (CFM)	312 (11,018)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	14,207 kg (31,322 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	92.2

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.35	0.5	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1600-XC6DT2

1600 kWe / 60 Hz / Prime
380 - 4160V

(Reference 1750-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V**	4160V
Phase	3	3	3	3
PF	0.8	0.8	0.8	0.8
Hz	60	60	60	60
kW	1600	1600	1600	1600
kVA	2000	2000	2000	2000
AMPS	3042	2406	1925	278
skVA@30%				
Voltage Dip	4200	4700	3600	4000
Generator Model*	744RSL4056	743RSL4052	744RSS4292	743FSM4370
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V 4000 Diesel Engine
 - 57.2 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	12V4000G83 (T1238A36)
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	57.2 (3,491)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	1,736 (2,328)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	260 (68.7)
Engine Jacket Water Capacity: L (gal)	160 (42.3)
After Cooler Water Capacity: L (gal)	40 (10.6)
System Coolant Capacity: L (gal)	583 (154)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	960 (254)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	420 (111)
At 75% of Power Rating: L/hr (gal/hr)	322 (85)
At 50% of Power Rating: L/hr (gal/hr)	227 (60)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,117 (295)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	666 (37,875)
Heat Rejection to After Cooler: kW (BTUM)	484 (27,525)
Heat Radiated to Ambient: kW (BTUM)	145.1 (8,254)

// Air Requirements

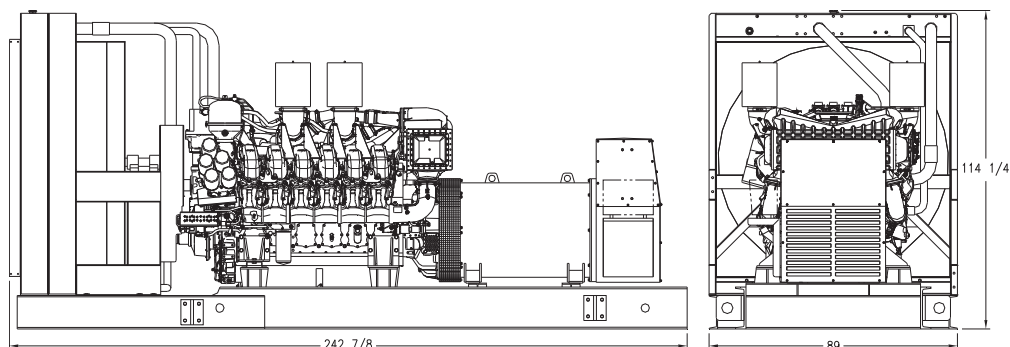
	PRIME
Aspirating: *m ³ /min (SCFM)	138 (4,873)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	1,702 (60,120)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	530 (18,616)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	435 (815)
Gas Volume at Stack Temp: m ³ /min (CFM)	342 (12,078)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)	14,511 kg (31,992 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	92.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.09	0.64	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

1800-XC6DT2

1800 kWe / 60 Hz / Prime
380 - 13.8kV

(Reference 2000-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	1800	1800	1800	1800	1800	1800	1800
kVA	2250	2250	2250	2250	2250	2250	2250
AMPS	3423	2710	2168	312	104	99	94
skVA@30%							
Voltage Dip Generator	4300	5800	3600	5100	C/F	C/F	C/F
Model*	744RSL4176	744RSL4054	744RSS4292	744FSM4374	1020FDH5582	1020FDH5582	1020FDH5582
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE	4 BAR WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Seismic Certification – Optional**

- IBC Certification
- OSHPD Pre-Approval

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA 110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V4000G43 (T1638A36)
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	76.3 (4,656)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,020 (2,709)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Engine Jacket Water Capacity: L (gal)	175 (46.2)
After Cooler Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	651 (172)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	487 (128.6)
At 75% of Power Rating: L/hr (gal/hr)	381 (100.7)
At 50% of Power Rating: L/hr (gal/hr)	265 (69.9)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.25 (1)
Water Pump Capacity: L/min (gpm)	1,350 (357)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	770 (43,790)
Heat Rejection to After Cooler: kW (BTUM)	572 (32,530)
Heat Radiated to Ambient: kW (BTUM)	173.6 (9,871)

// Air Requirements

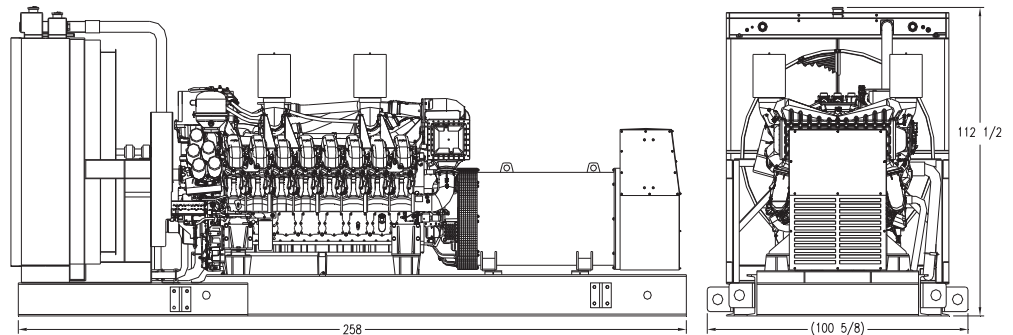
	PRIME
Aspirating: *m ³ /min (SCFM)	180 (6,357)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	2,270 (80,160)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	634 (22,262)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	435 (815)
Gas Volume at Stack Temp: m ³ /min (CFM)	426 (15,044)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (LxWxH)	Weight (less tank)
OPU	6,550 x 2,560 x 2,860 mm (258 x 100.6 x 112.5 in)	16,477 kg (36,326 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	94.7

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.27	0.6	0.06

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2045-XC6DT2

2045 kWe / 60 Hz / Prime
380 - 13.8kV

(Reference 2250-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2045	2045	2045	2045	2045	2045	2045
kVA	2556	2556	2556	2556	2556	2556	2556
AMPS	3888	3078	2463	355	118	112	107
skVA@30%							
Voltage Dip Generator	3625	8400	3900	5000	C/F	C/F	C/F
Model*	1020FDL1102	744RSL4058	1020FDS1013	744FSM4376	1020FDH5584	1020FDH5584	1020FDH5584
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	6 LEAD WYE	4 BAR WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// Seismic Certification – Optional

- IBC Certification
- OSHPD Pre-Approval

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 16V 4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	16V4000G83 (T1638A36)
Type	4-Cycle
Arrangement	16-V
Displacement: L (in ³)	76.3 (4,656)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.5:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,280 (3,056)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Engine Jacket Water Capacity: L (gal)	175 (46.2)
After Cooler Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	651 (172)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,800

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	558 (147)
At 75% of Power Rating: L/hr (gal/hr)	426 (113)
At 50% of Power Rating: L/hr (gal/hr)	299 (79)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	40 (104)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.25 (1)
Water Pump Capacity: L/min (gpm)	1,350 (357)
After Cooler Pump Capacity: L/min (gpm)	583 (154)
Heat Rejection to Coolant: kW (BTUM)	874 (49,704)
Heat Rejection to After Cooler: kW (BTUM)	671 (38,160)
Heat Radiated to Ambient: kW (BTUM)	186.7 (10,615)

// Air Requirements

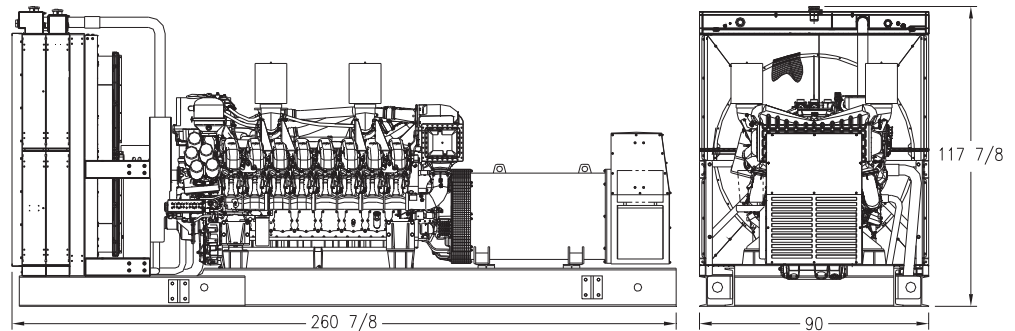
	PRIME
Aspirating: *m ³ /min (SCFM)	180 (6,357)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	2,520 (89,005)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	682 (23,940)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	480 (896)
Gas Volume at Stack Temp: m ³ /min (CFM)	456 (16,103)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	6,630 x 2,290 x 2,990 mm (260.88 x 90 x 117.88 in)	16,994 kg (37,466 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	93.9

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.44	0.7	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2250-XC6DT2 (20V4000)

2250 kWe / 60 Hz / Prime
380 - 13.8kV

(Reference 2500-XC6DT2 (20V4000) for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2250	2250	2250	2250	2250	2250	2250
kVA	2813	2843.75	2843.75	2843.75	2843.75	2843.75	2843.75
AMPS	4278	3383	2706	395	132	124	119
skVA@30%							
Voltage Dip Generator	3400	4675	5200	5750	4300	4750	5100
Model*	1020FDL1104	1020RSL1102	1020FDS1122	1020FDM1180	1020FDH1248	1020FDH1248	1020FDH1250
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 2 Bearings, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G43 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,490 (3,338)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	814 (215)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	587 (155)
At 75% of Power Rating: L/hr (gal/hr)	462 (122)
At 50% of Power Rating: L/hr (gal/hr)	337 (89)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	54 (129)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	890 (50,613)
Heat Rejection to After Cooler: kW (BTUM)	580 (32,984)
Heat Radiated to Ambient: kW (BTUM)	203.6 (11,581)

// Air Requirements

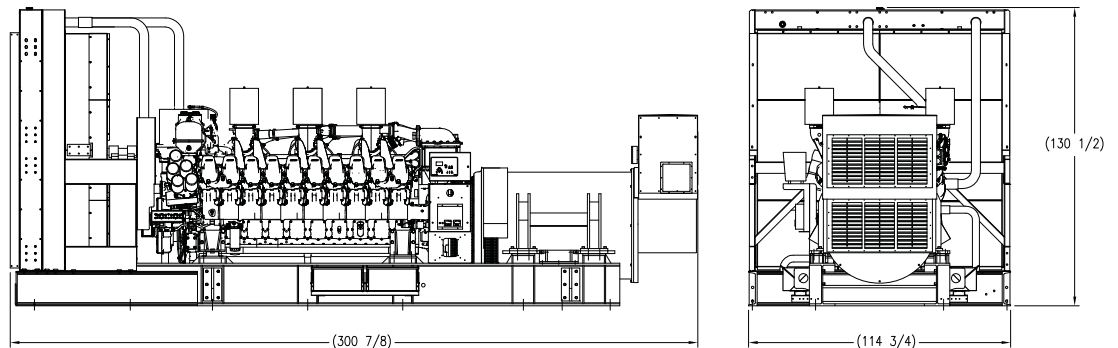
	PRIME
Aspirating: *m ³ /min (SCFM)	228 (8,052)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,340 (117,959)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	744 (26,119)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	455 (851)
Gas Volume at Stack Temp: m ³ /min (CFM)	534 (18,858)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,640 x 2,915 x 3,310 mm (300.88 x 114.75 x 130.5 in)	26,941 kg (59,394 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	97.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.29	0.47	0.05

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2500-XC6DT2

2500 kWe / 60 Hz / Prime
380 - 13.8kV

(Reference 2800-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2500	2500	2500	2500	2500	2500	2500
kVA	3125	3125	3125	3125	3125	3125	3125
AMPS	4754	3864	3091	446	149	141	134
skVA@30%							
Voltage Dip Generator	4000	4650	5875	5250	4600	5000	5250
Model*	1030FDL1110	1020FDL1104	1020FDS1124	1020FDM1182	1030FDH1250	1030FDH1250	1030FDH1252
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 Listed** – Optional

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V 4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 2 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G83 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	2,740 (3,673)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	860 (227)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	647 (171)
At 75% of Power Rating: L/hr (gal/hr)	511 (135)
At 50% of Power Rating: L/hr (gal/hr)	367 (97)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	48 (118)
Maximum Allowable Static	
Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	970 (55,162)
Heat Rejection to After Cooler: kW (BTUM)	670 (38,102)
Heat Radiated to Ambient: kW (BTUM)	217.3 (12,360)

// Air Requirements

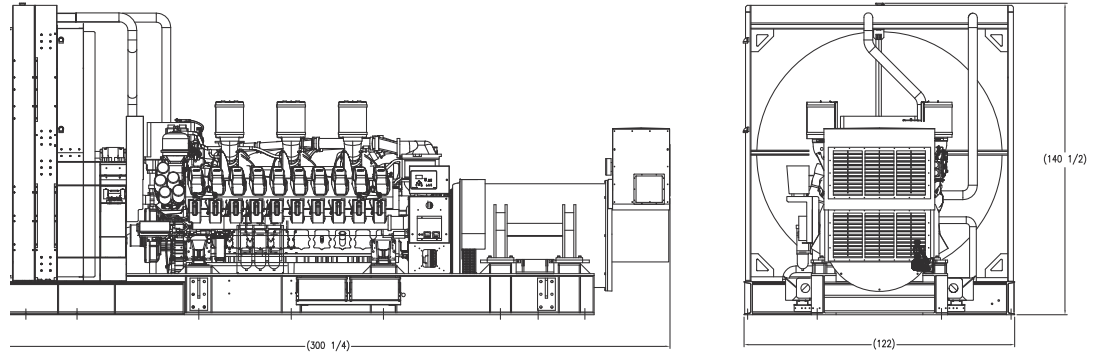
	PRIME
Aspirating: *m ³ /min (SCFM)	240 (8,476)
Air Flow Required for Rad.	
Cooled Unit: *m ³ /min (SCFM)	3,082 (108,843)
Remote Cooled Applications;	
Air Flow Required for Dissipation	
of Radiated Gen-set Heat for a	
Max of 25 °F Rise: *m ³ /min (SCFM)	794 (27,875)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	465 (869)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	576 (20,341)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,626 x 3,099 x 3,569 mm (300.25 x 122 x 140.5 in)	28,149 kg (62,056 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	97.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.45	0.5	0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL ENGINE-GENERATOR SET

2800-XC6DT2

2800 kWe / 60 Hz / Prime
380 - 13.8kV

(Reference 3000-XC6DT2 for Standby Rating Technical Data)



SYSTEM RATINGS

Prime

Voltage (L-L)	380V	480V**	600V	4160V	12470V	13200V	13800V
Phase	3	3	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60	60	60
kW	2800	2800	2800	2800	2800	2800	2800
kVA	3500	3500	3500	3500	3500	3500	3500
AMPS	5324	4210	3368	486	162	153	146
skVA@30%							
Voltage Dip Generator	4000	5400	6125	5250	6350	5625	6000
Model*	1030FDL1110	1020FDL1108	1030FDS1126	1020FDM1184	1040FDH1256	1030FDH1254	1030FDH1254
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE	6 LEAD WYE

* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// UL 2200 Listed – Optional

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 20V 4000 Diesel Engine
 - 95.4 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Inter Cooler Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Structural Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 2 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	20V4000G83L 6ECT
Type	4-Cycle
Arrangement	20-V
Displacement: L (in ³)	95.4 (5,822)
Bore: cm (in)	17 (6.69)
Stroke: cm (in)	21 (8.27)
Compression Ratio	16.4:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	3,010 (4,035)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	390 (103)
Engine Jacket Water Capacity: L (gal)	205 (54.2)
After Cooler Water Capacity: L (gal)	30 (7.9)
System Coolant Capacity: L (gal)	860 (227)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	4,200

// Fuel System

Fuel Supply Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Fuel Return Connection Size	#16 JIC 37° Female 1" NPT Adapter Provided
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,620 (428)

// Fuel Consumption

	PRIME
At 100% of Power Rating: L/hr (gal/hr)	712 (188)
At 75% of Power Rating: L/hr (gal/hr)	553 (146)
At 50% of Power Rating: L/hr (gal/hr)	390 (103)

// Cooling - Radiator System

	PRIME
Ambient Capacity of Radiator: °C (°F)	47 (117)
Maximum Allowable Static Pressure on Rad. Exhaust: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	1,567 (414)
After Cooler Pump Capacity: L/min (gpm)	567 (150)
Heat Rejection to Coolant: kW (BTUM)	1,040 (59,143)
Heat Rejection to After Cooler: kW (BTUM)	770 (43,789)
Heat Radiated to Ambient: kW (BTUM)	221.7 (12,606)

// Air Requirements

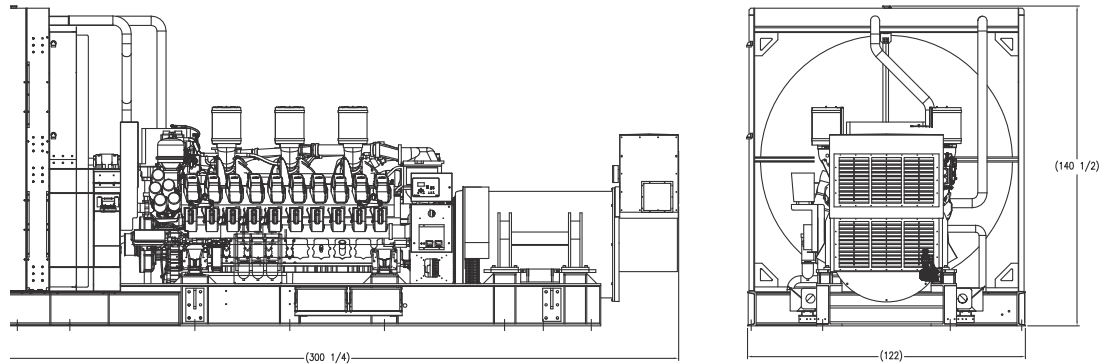
	PRIME
Aspirating: *m ³ /min (SCFM)	252 (8,900)
Air Flow Required for Rad. Cooled Unit: *m ³ /min (SCFM)	3,082 (108,843)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	799 (28,041)

* Air density = 1.184 kg/m (0.0739 lbm/ft³)

// Exhaust System

	PRIME
Gas Temp. (Stack): °C (°F)	480 (896)
Gas Volume at Stack Temp: m ³ /min (CFM)	624 (22,036)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (less tank)
OPU	7,626 x 3,099 x 3,569 mm (300.25 x 122 x 140.5 in)	28,357 kg (62,515 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	97.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC	CO	PM
5.95	0.37	0.04

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL POWER MODULE

AIR CHARGE-AIR COOLING

Voltages:

550 kWe / 60 Hz / Prime - 208V, 480V

550 kWe / 60 Hz / Prime - 600V

650 kVA / 50 Hz / Prime - 400V



SYSTEM RATINGS

60 Hz	DP550D6SPA	DP550D6SRA	DP550D6SNA	50 Hz *	DP650D5SVA
Voltage (L-L)	208V	480V	600V**	Voltage (L-L)	400V
Phase	3	3	3	Phase	3
PF	0.8	0.8	0.8	PF	0.8
Hz	60	60	60	Hz	50
kW	550	550	550	kW	520
kVA	688	688	668	kVA	650
AMPS	1908	827	662	AMPS	938
skVA@30%				skVA@30%	
Voltage Dip	1500	2120	2380	Voltage Dip	1600
Generator Model	573RSL4035	573RSL4035	573RSS4276	Generator Model	573RSL4035
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	Temp Rise	105 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI WYE	4 LEAD WYE	Connection	12 LEAD HI WYE

* Prime 50 Hz technical data is for a Fuel-Optimized Prime unit.

CERTIFICATIONS AND STANDARDS

// Emissions

- EPA Tier 2 Certified (60 Hz)
- Fuel Optimized (50 Hz)

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// Performance Assurance Certification (PAC)

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 12V1600 Diesel Engine
 - 21.0 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - Link board (208V, 480V and 400V units only)
 - Voltage Adjust Toggle Switch
 - // Digital Control Panel
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine (60 Hz)
 Fuel Optimized (50 Hz)

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated and Drip-Proof
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator

No Load to Full Load Regulation
 Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU	
Model 50 Hz	12V1600G20F	
Model 60 Hz	12V1600G20S	
Type	4-Cycle	
Arrangement	12-V	
Displacement: L (Cu In)	21 (1,281)	
Bore: cm (in)	12.2 (4.72)	
Stroke: cm (in)	15 (5.91)	
Compression Ratio	17.5:1	
Rated RPM: 60 Hz	1,800	
Rated RPM: 50 Hz	1,500	
Engine Governor	Electronic Isochronous (ADEC)	
Max Power: 110%	60 Hz: kWm (bhp)	668 (896)
	50 Hz: kWm (bhp)	634 (850)
Max Power: Prime	60 Hz: kWm (bhp)	608 (815)
	50 Hz: kWm (bhp)	576 (772)
Speed Regulation	±0.25%	
Air Cleaner	Dry	

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	73 (19.3)
Engine Jacket Water Capacity: L (gal)	65 (17.2)
System Coolant Capacity: L (gal)	154 (40.7)
Fuel Capacity: L (gal)	3,785 (1,000)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel System

Fuel Supply Connection Size	Quick Disconnect
Fuel Return Connection Size	Quick Disconnect
Maximum Fuel Lift: m (ft)	5 (16)
Recommended Fuel	Diesel #2
Total Fuel Flow: 60 Hz L/hr (gal/hr)	402 (106.2)
50 Hz L/hr (gal/hr)	341.8 (90.3)

// Fuel Consumption

	60 Hz	50Hz
At 100% of Power Rating: L/hr (gal/hr)	140 (37)	129.8 (34.3)
At 75% of Power Rating: L/hr (gal/hr)	106 (28)	99.92 (26.4)
At 50% of Power Rating: L/hr (gal/hr)	75.32 (19.9)	69.64 (18.4)

// Cooling - Radiator System

	60 Hz	50Hz
Ambient Capacity of Radiator: °C (°F)	50 (122)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.2 (0.8)	0.2 (0.8)
Water Pump Capacity: L/min (gpm)	517 (136.5)	433 (115)
Heat Rejection to Coolant: kW (BTUM)	242 (13,762)	236 (13,421)
Heat Rejection to After Cooler: kW (BTUM)	150 (8,530)	104 (5,914)
Heat Radiated to Ambient: kW (BTUM)	59.7 (3,395)	59.4 (3,378)

// Air Requirements

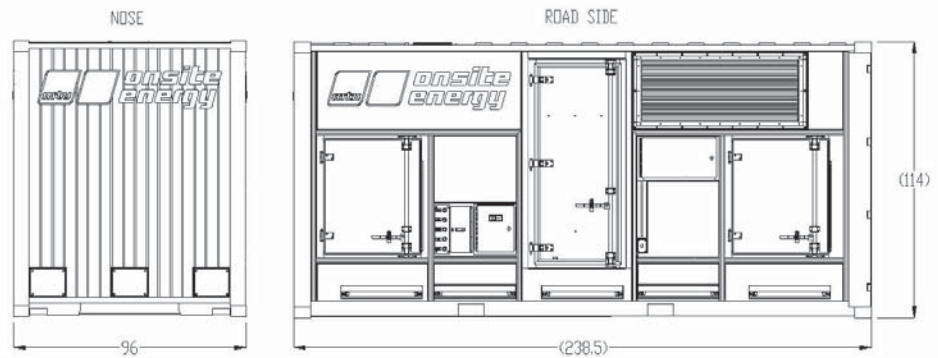
	60 Hz	50Hz
Aspirating: *(m ³ /min) SCFM	53 (1,865)	48 (1,695)
Air Flow Required for Rad.		
Cooled Unit: *(m ³ /min) SCFM	726 (25,638)	612 (21,613)
Remote Cooled Applications;		
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *(m ³ /min) SCFM	217 (7,657)	216 (7,618)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

	60 Hz	50Hz
Gas Temp. (Stack): °C (°F)	414 (777)	483 (901)
Gas Volume at Stack		
Temp: m ³ /min (CFM)	126 (4,450)	126 (4,450)
Maximum Allowable		
Back Pressure: kPa (in. H ₂ O)	15 (60.2)	15 (60.2)

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System

Containerized

Dimensions (L x W x H)

6,058 x 2,439 x 2,896 mm (238.5 x 96 x 114 in)

Weight (wet/no fuel)

16,783 kg (37,000 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type

Containerized - Prime

60 Hz Full Load

76.6

50 Hz Full Load

73.5

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO_x + NMHC

4.79

CO

0.24

PM

0.038

60 Hz Units only:

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

// Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.

// Deration Factor:

Altitude: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

DIESEL POWER MODULE

AIR CHARGE-AIR COOLING

Voltages:

1000 kWe / 60 Hz / Prime - 480V, 600V



SYSTEM RATINGS

Prime	DP1000D6SRA	DP1000D6SNA
Voltage (L-L)	480V	600V
Phase	3	3
PF	0.8	0.8
Hz	60	60
kW	1000	1000
kVA	1250	1250
AMPS	1504	1203
skVA@30%		
Voltage Dip	3200	2600
Generator Model	740RSL4046	741RSS4284
Temp Rise	105 °C/40 °C	105 °C/40 °C
Connection	4 LEAD WYE	4 LEAD WYE

CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **Performance Assurance Certification (PAC)**

- Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 18V2000 Diesel Engine
 - 35.8 Liter Displacement
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - Voltage Adjust Toggle Switch
 - // Digital Control Panel
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Remote Mounted
 - Electrically Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners - Heavy Duty Two Stage
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Radiator - Remote Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Heavy Duty Construction
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Rack & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection
 EPA Certified Engine
 60 Hz

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds
 Self-Ventilated
 Superior Voltage Waveform
 Digital, Solid State, Volts-per-Hertz Regulator
 No Load to Full Load Regulation

Brushless Alternator with Brushless Pilot Exciter
 4 Pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 2 Bearings
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

Manufacturer	MTU
Model	18V2000G85TB
Type	4-Cycle
Arrangement	18-V
Displacement: L (Cu In)	35.8 (2,186)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM: 60 Hz	1,800
Engine Governor	Electronic Isochronous (ADEC)
Max Power: 110% kWm (bhp)	1,310 (1,755)
Max Power: Prime kWm (bhp)	1,191 (1,597)
Speed Regulation	±0.25%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	130 (34.3)
Engine Jacket Water Capacity: L (gal)	120 (31.7)
System Coolant Capacity: L (gal)	583 (154)
Fuel Capacity: L (gal)	3,785 (1,000)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	2,300

// Fuel System

Fuel Supply Connection Size	Quick Disconnect
Fuel Return Connection Size	Quick Disconnect
Maximum Fuel Lift: m (ft)	1 (3)
Recommended Fuel	Diesel #2
Total Fuel Flow: 60 Hz L/hr (gal/hr)	480 (146)

// Fuel Consumption

At 100% of Power Rating: L/hr (gal/hr)	284 (75)
At 75% of Power Rating: L/hr (gal/hr)	219 (58)
At 50% of Power Rating: L/hr (gal/hr)	149 (39)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)
Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.125 (0.5)
Water Pump Capacity: L/min (gpm)	867 (229)
Heat Rejection to Coolant: kW (BTUM)	460 (26,160)
Heat Rejection to After Cooler: kW (BTUM)	320 (18,200)
Heat Radiated to Ambient: kW (BTUM)	50 (2,841)

// Air Requirements

Aspirating: *(m ³ /min) SCFM	102 (3,605)
Air Flow Required for Rad.	
Cooled Unit: *(m ³ /min) SCFM	1,444 (51,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *(m ³ /min) SCFM	N/A

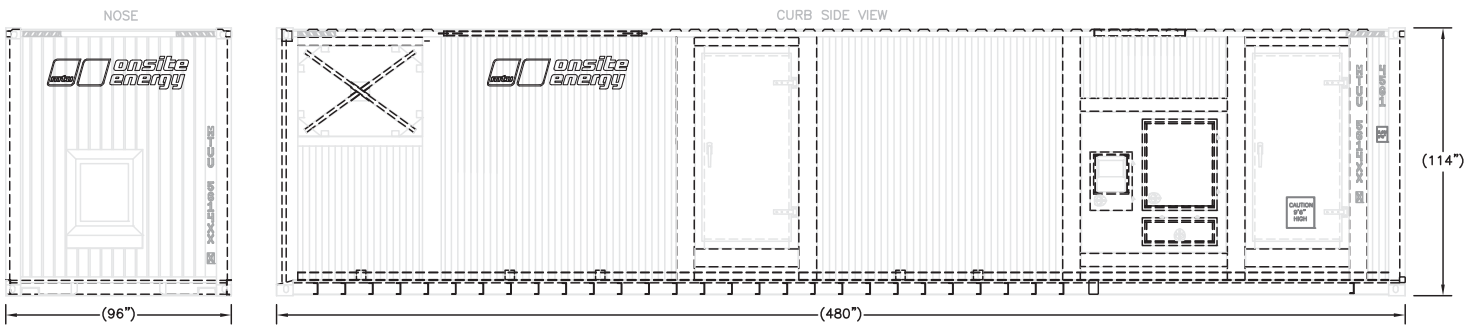
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	510 (950)
Gas Volume at Stack Temp: m ³ /min (CFM)	240 (8,476)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	9 (34)

N/A = Not applicable to this system

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

System	Dimensions (L x W x H)	Weight (wet/no fuel)
Power Module - Prime	12,192 x 2,439 x 2,896 mm (480 x 96 x 114 in)	29,120 kg (64,200 lb)

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific engine-generator set.

SOUND DATA

Unit Type	Full Load
Power Module - Prime	C/F

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

NO _x + NMHC	CO	PM
5.158	0.0425	0.0238

All units are in g/hp-hr and at 100% load.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value (not shown) from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

RATING DEFINITIONS AND CONDITIONS

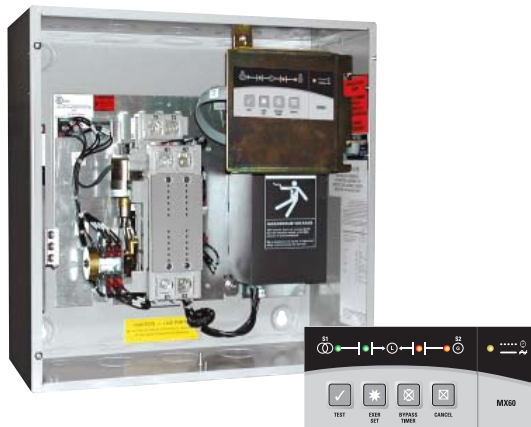
- // Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, AS 2789, and DIN 6271.
- // Deration Factor:
 - Altitude:** Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor

Automatic Transfer Switches (ATS) Product Overview

MTX series



MTG series



MTS series



Small Frame Residential, Commercial & Light Industrial

- Standard Transition
- 40-400 Amp, 120-480 Volt Ratings
- 2, 3 or 4 Pole

General Purpose Commercial & Industrial

- Standard or Delayed Transition for motor, transformer or UPS switching
- Extended ratings up to 3000A & 600VAC (2, 3 or 4 Pole)

Business & Industrial Critical

- Standard, Delayed or Closed Transition for make-before-break source switching
- Extended ratings up to 4000A & 600VAC (2, 3 or 4 Pole)
- Maintenance Bypass available on all frames and transition types



Automatic Transfer Switch MTG/D Options



Option Code	Abbreviated Feature Description	MSTDG (Default)	MEXEG
A1	Auxiliary contact SPDT - Normal (Source 1) Failure	OPT	OPT
A1E	Auxiliary contact SPDT - Emergency (Source 2) Failure	OPT	OPT
A3	Emergency (Source 2) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1	2
A4	Normal (Source 1) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1	2
A62	Motor disconnect and staged restart (1 contact)	OPT	OPT
A62T (1-10)	Extra contacts (Individual Timers) each (MTG up to 10 circuits; MTGSE up to 2 circuits)	OPT	OPT
Calibrate	Microprocessor-activated calibration feature	STD	STD
CD/P	Programmable exerciser daily, 7-14-28-365 days user-selectable, with or without load. (Replaces former "D" or C/D 7 and 365 day)	Not Avail	STD
CDT/P	Exerciser no load timer. (Increased functionality no longer requires a jumper.)	STD	Not Avail
CTAPA	Chicago Transfer Alarm Panel mounted in door of Nema 1 Enclosure. Includes 3 auxiliary contacts and fuse.	OPT	OPT
CTAPB	Chicago Transfer Alarm Panel mounted in door of Nema 3R, 4, or 12 type enclosures. Includes 3 auxiliary contacts and	OPT	OPT
DS	Disconnect switch. Disconnects source voltage to transfer power panel on ATS. (ON MTG, STD 800A and above, ON MTS, STD 600A and above, ON MTGSE STD ALL)	OPT	OPT
DT	Time delay from Neutral switch Position to Normal on Retransfer. (This option disables the ability to have the R50.)	STD (DELAY)	STD (DELAY)
DW	Time Delay from Neutral Switch Position to Emergency on Retransfer. (This option disables the ability to have the R50.)	STD (DELAY)	STD (DELAY)
E	Engine start relay (SPDT)	STD	STD
EL/P	Event log of last 16 events	STD	STD
GB1	Mechanical Lugs (3) #8-1/0 cables - 40-1200A	OPT	OPT
GB2	Mechanical Lugs (6) #8-1/0 cables - 40-1200A	OPT	OPT
GB3	Mechanical Lugs (6) #6-250MCM cables - 600-1200A	OPT	OPT
GB4	Mechanical Lugs (12) #6-250MCM cables - 600-1200A	OPT	OPT
GB5	Mechanical Lugs (8) #2-600MCM cables - 600-1200A	OPT	OPT
GB6	Mechanical Lugs (12) #2-600MCM cables - 600-3000A	OPT	OPT
GB7	Mechanical Lugs (24) #2-600MCM cables - 1600-3000A	OPT	OPT
GB8	Mechanical Lugs (36) #2-600MCM cables - 1600-3000A	OPT	OPT
HT1	Heater and thermostat 208/240V - mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT
HT2	Heater and thermostat 380/600 - mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT
J1E	Adjustable under frequency sensor (Source 2 or Emergency)	STD	STD
K/P	Frequency indication (on the controller)	STD	STD

Automatic Transfer Switch

MTG/D Options



Option Code	Abbreviated Feature Description	MSTDG (Default)	MEXEG
L1	LED Source 2 (Emergency) position indication	STD	STD
L2	LED Source 1 (Normal) position indication	STD	STD
L3	LED Source 1 (Normal) source availability indication	STD	STD
L4	LED Source 2 (or Emergency) source availability indication	STD	STD
LN/P	Center-off position / LCD indication on microprocessor	STD (DELAY)	STD (DELAY)
M90SAG	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3-phase. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection) (Nema 1 only, include OCVR option for outdoor environment)	OPT	OPT
M90LAG	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3-phase. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection) (Nema 1 only, include OCVR option for outdoor environment)	OPT	OPT
M90ASAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP2000 and ATS Communications Card.	OPT	OPT
M90ALAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP2000 and ATS Communications Card.	OPT	OPT
M90BSAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP2000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT	OPT
M90BLAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP2000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT	OPT

Automatic Transfer Switch MTG/D Options



Option Code	Abbreviated Feature Description	MSTDG (Default)	MEXEG
M91SAxxHG (xx = '50' or '60' for Hz)	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency, THD). Revenue Class (0.2%) Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. 3 Line LED Display. Front IrDA Port Laptop Connection. 1 or 3-phase. Standard Modbus RTU RS485 or DNP 3.0 communications capability. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection) (Nema 1 only, include OCVR option for outdoor environment)	OPT	OPT
M91LAxxHG (xx = '50' or '60' for Hz)	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency, THD). Revenue Class (0.2%) Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. 3 Line LED Display. Front IrDA Port Laptop Connection. 1 or 3-phase. Standard Modbus RTU RS485 or DNP 3.0 communications capability. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection) (Nema 1 only, include OCVR option for outdoor environment)	OPT	OPT
M91ASAxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card.	OPT	OPT
M91ALAxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card.	OPT	OPT
M91BSAxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT	OPT

Automatic Transfer Switch MTG/D Options



Option Code	Abbreviated Feature Description	MSTDG (Default)	MEXEG
M91BLAxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT	OPT
EVM-VP1	Enervista Viewpoint Monitoring for MTU Onsite Energy ATS. Permits Plug-&-Play Monitoring for up to 32 MTU Onsite Energy Transfer Switches. Requires Modbus Communications cards on ATS. [Note: See "M90/91A" and "M90/91B" meter options for factory supply and pre-wiring for Enervista Monitoring].	OPT	OPT
NEMA1A	Gasketed door on NEMA 1 enclosure "NEMA 1A" (add to enclosure price)	OPT	OPT
OCVR-1SG	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor only (Not NEMA 4)	OPT	OPT
OCVR-1SS	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor selectors and meters (Not NEMA 4)	OPT	OPT
P1	Engine start timer P1 (adjustable up to 6 seconds)	STD	STD
Q2	Peak shave/remote load test/area protection - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	STD	STD
R2E	Under voltage sensing: (Source 2 or Emergency) (1-phase) (STD 3-phase sensing - R17 if U-U application is ordered)	STD	STD
R7	Over voltage sensing (Source 2 or Emergency) 1-phase	Not Avail	Not Avail
R8	Over voltage sensing (Source 2 or Emergency) 3-phase	Not Avail	Not Avail
R15	Load shed provisions to transfer Source 2 or emergency to dead normal (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail	Not Avail
R15D	Load shed provisions to transfer Source 2 or emergency to neutral position (only available on delayed transition units) (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail	Not Avail
R16	Phase rotation sensing of Source 1 and Source 2	Not Avail	Not Avail
R17	Under voltage sensing: Source 2 (Emergency) (3-phase)	Not Avail	Not Avail
R26	Provisions for transfer to dead Source 2 or emergency for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail	Not Avail
R26D	Provisions for transfer to neutral position (only available on delayed transition units) for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail	Not Avail
R50	In Phase Monitor between Source 1 and Source 2 to allow transfer (with enable/disable)	STD	STD

Automatic Transfer Switch MTG/D Options



Option Code	Abbreviated Feature Description	MSTDG (Default)	MEXEG
S13/P	Microprocessor-activated Commit/No Commit on transferring to emergency source (with enable/disable)	STD	STD
T	Retransfer to normal adjustable time delay	STD	STD
T3/W3	Pre-signal contact on transfer to Source 1 (Normal) or Source 2 (Emergency) during test	OPT	OPT
U	Engine stop/cool adjustable cool down timer	STD	STD
UMD	Pre- and post-transfer output adjustable time range. Functions in both directions. Includes 2 circuits. Additional circuits available. (See A62.)	OPT	OPT
VI	Voltage imbalance between phases (applies to 3-phase only)	STD	STD
W	Adjustable time delay on transfer to emergency source	STD	STD
YEN/P	Bypass transfer timers function (soft switch in controller)	STD	STD
ZNETL	Lonworks microprocessor communication module (Consult factory for special quotation on any other ZNET annunciator or communication options)	OPT	OPT
ZNETM	Modbus RTU microprocessor communication module (Consult factory for special quotation on any other ZNET annunciator or communication options)	OPT	OPT
6/P	Microprocessor-activated Test Switch: a momentary test switch	STD	STD
6A	Test Switch (hard-wired) (maintained)	OPT	OPT
6A/P	Test Switch (maintained) Programmable in microprocessor	OPT	OPT
ATSEW-1	Extended warranty for MTS/MTSD 40-400A to 5 years labor	Not Avail	Not Avail
ATSEW-2	Extended warranty for MTS/MTSD 600-1200A to 5 years labor	Not Avail	Not Avail
ATSEW-3	Extended warranty for MTS/MTSD 1600-4000A to 5 years labor	Not Avail	Not Avail
ATSEW-4	Extended warranty for MBTS/MBTSD 100-400A to 5 years labor	Not Avail	Not Avail
ATSEW-5	Extended warranty for MBTS/MBTSD 600-1200A to 5 years labor	Not Avail	Not Avail
ATSEW-6	Extended warranty for MBTS/MBTSD 1600-4000A to 5 years labor	Not Avail	Not Avail
ATSEW-7	Extended warranty for MTSCT 100-400A to 5 years labor	Not Avail	Not Avail
ATSEW-8	Extended warranty for MTSCT 600-1200A to 5 years labor	Not Avail	Not Avail
ATSEW-9	Extended warranty for MTSCT 1600-4000A to 5 years labor	Not Avail	Not Avail
ATSEW-10	Extended warranty for MBTSCT 100-400A to 5 years labor	Not Avail	Not Avail
ATSEW-11	Extended warranty for MBTSCT 600-1200A to 5 years labor	Not Avail	Not Avail
ATSEW-12	Extended warranty for MBTSCT 1600-4000A to 5 years labor	Not Avail	Not Avail

Automatic Transfer Switch

MTGSE/MTGDSE Options



(Standard options available. Refer to MTG/D Options.)

Option Code	Abbreviated Feature Description	MSTDG
A1	Auxiliary contact SPDT - Normal (Source 1) Failure	OPT
A1E	Auxiliary contact SPDT - Emergency (Source 2) Failure	OPT
A3	Emergency (Source 2) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1
A4	Normal (Source 1) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1
A62	Motor disconnect and staged restart (1 contact)	OPT
A62T (1-10)	Extra contacts (Individual Timers) each (MTG up to 10 circuits, MTGSE up to 2 circuits)	OPT
Calibrate	Microprocessor-activated calibration feature	STD
CD/P	Programmable exerciser daily, 7-14-28-365 days user-selectable, with or without load. Replaces former "D" or C/D 7 and 365 day)	Not Avail
CDT/P	Exerciser no load timer (Increased functionality no longer requires a jumper.)	STD
CTAPA	Chicago Transfer Alarm Panel mounted in door of Nema 1 Enclosure. Includes 3 auxiliary contacts and fuse.	OPT
CTAPB	Chicago Transfer Alarm Panel mounted in door of Nema 3R, 4, or 12 type Enclosures. Includes 3 auxiliary contacts and fuse.	OPT
DS	Disconnect switch. Disconnects source voltage to transfer power panel on ATS. (ON MTG, STD 800A and above, ON MTS, STD 600A and above, ON MTGSE STD ALL)	OPT
DT	Time delay from Neutral switch Position to Normal on Retransfer. (This option disables the ability to have the R50.)	STD (DELAY)
DW	Time Delay from Neutral Switch Position to Emergency on Retransfer. (This option disables the ability to have the R50.)	STD (DELAY)
E	Engine start relay (SPDT)	STD
EL/P	Event log of last 16 events	STD
GB1	Mechanical Lugs (3) #8-1/0 cables - 40-1200A	OPT
GB2	Mechanical Lugs (6) #8-1/0 cables - 40-1200A	OPT
GB3	Mechanical Lugs (6) #6-250MCM cables - 600-1200A	OPT
GB4	Mechanical Lugs (12) #6-250MCM cables - 600-1200A	OPT
GB5	Mechanical Lugs (8) #2-600MCM cables - 600-1200A	OPT
GB6	Mechanical Lugs (12) #2-600MCM cables - 600-3000A	OPT
GB7	Mechanical Lugs (24) #2-600MCM cables - 1600-3000A	OPT
GB8	Mechanical Lugs (36) #2-600MCM cables - 1600-3000A	OPT
HT1	Heater and thermostat 208/240V-mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT
HT2	Heater and thermostat 380/600-mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT
J1E	Adjustable under frequency sensor (Source 2 or Emergency)	STD
K/P	Frequency indication (on the controller)	STD
L1	LED Source 2 (Emergency) position indication	STD
L2	LED Source 1 (Normal) position indication	STD
L3	LED Source 1 (Normal) source availability indication	STD
L4	LED Source 2 (or Emergency) source availability indication	STD
LN/P	Center-off position / LCD indication on microprocessor	STD (DELAY)

Automatic Transfer Switch

MTGSE/MTGDSE Options



(Standard options available. Refer to MTG/D Options.)

Option Code	Abbreviated Feature Description	MSTDG
M90SAG	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3-phase. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection) (Nema 1 only (include OCVR option for outdoor environment)).	OPT
M90LAG	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3-phase. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection) (Nema 1 only (include OCVR option for outdoor environment)).	OPT
M90ASAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP2000 & ATS Communications Card.	OPT
M90ALAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP2000 & ATS Communications Card.	OPT
M90BSAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP2000 & ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT
M90BLAG	EPM2000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM2000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP2000 & ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT
M91SAxxHG (xx = '50' or '60' for Hz)	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factory and Frequency, THD). Revenue Class (0.2%) Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. 3 Line LED Display. Front IrDA Port Laptop Connection. 1 or 3-phase. Standard Modbus RTU RS485 or DNP 3.0 communications capability. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection) (Nema 1 only (include OCVR option for outdoor environment)).	OPT

Automatic Transfer Switch

MTGSE/MTGDSE Options



(Standard options available. Refer to MTG/D Options.)

Option Code	Abbreviated Feature Description	MSTDG
M91L AxxHG (xx = '50' or '60' for Hz)	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency, THD). Revenue Class (0.2%) Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. 3 Line LED Display. Front IrDA Port Laptop Connection. 1 or 3-phase. Standard Modbus RTU RS485 or DNP 3.0 communications capability. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection) (Nema 1 only (include OCVR option for outdoor environment).	OPT
M91A SxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card.	OPT
M91A LxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Modbus Serial (RS485) network. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, and factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card.	OPT
M91B SxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 40 - 1200 Amps (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT
M91B LxxHG (xx = '50' or '60' for Hz)	EPM6000 Meter plus factory-supplied equipment and wiring for remote monitoring of ATS using Ethernet TCP/IP Communications. 1600 Amps and above (Need to specify with order open delta or wye type voltage connection). Includes Modbus-capable EPM6000, ATS Modbus Communications card, factory Modbus cabling (RS-485) between EMP6000 and ATS Communications Card, and Multilin 'Multinet' Serial-to-Ethernet Adapter for conversion of RS485 network to Ethernet TCP/IP network.	OPT
EVM-VP1	Enervista Viewpoint Monitoring for MTU Onsite Energy ATS. Permits Plug-&-Play Monitoring for up to 32 MTU Onsite Energy Transfer Switches. Requires Modbus Communications cards on ATS. [Note: See "M90/91A" and "M90/91B" meter options for factory supply and pre-wiring for Enervista Monitoring].	OPT
NEMA1A	Gasketed door on NEMA 1 enclosure "NEMA 1A" (add to enclosure price)	OPT
OCVR-1SG	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor only (Not NEMA 4)	OPT
OCVR-1SS	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor selectors and meters (Not NEMA 4)	OPT
P1	Engine start timer P1 (adjustable up to 6 seconds)	STD
Q2	Peak shave/remote load test/area protection - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	STD

Automatic Transfer Switch

MTGSE/MTGDSE Options



(Standard options available. Refer to MTG/D Options.)

Option Code	Abbreviated Feature Description	MSTDG
R2E	Under voltage sensing: (Source 2 or Emergency) (1-phase) (STD 3-phase sensing - R17 if U-U application is ordered)	STD
R7	Over voltage sensing (Source 2 or Emergency) 1-phase	Not Avail
R8	Over voltage sensing (Source 2 or Emergency) 3-phase	Not Avail
R15	Load shed provisions to transfer Source 2 or emergency to dead normal (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail
R15D	Load shed provisions to transfer Source 2 or emergency to neutral position (only available on delayed transition units) (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail
R16	Phase rotation sensing of Source 1 and Source 2	Not Avail
R17	Under voltage sensing: Source 2 (Emergency) (3-phase)	Not Avail
R26	Provisions for transfer to dead Source 2 or emergency for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail
R26D	Provisions for transfer to neutral position (only available on delayed transition units) for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	Not Avail
R50	In Phase Monitor between Source 1 and Source 2 to allow transfer (with enable/disable)	STD
S13/P	Microprocessor-activated Commit/No Commit on transferring to emergency source (with enable/disable)	STD
T	Retransfer to normal adjustable time delay	STD
T3/W3	Pre-signal contact on transfer to Source 1 (Normal) or Source 2 (Emergency) during test	OPT
U	Engine stop/cool adjustable cool down timer	STD
UMD	Pre- and post-transfer output adjustable time range. Functions in both directions. Includes 2 circuits. Additional circuits available. (See A62.)	OPT
VI	Voltage imbalance between phases (applies to 3-phase only)	STD
W	Adjustable time delay on transfer to emergency source	STD
YEN/P	Bypass transfer timers function (soft switch in controller)	STD
ZNETL	Lonworks microprocessor communication module (Consult factory for special quotation on any other ZNET annunciator or communication options)	OPT
ZNETM	Modbus RTU microprocessor communication module (Consult factory for special quotation on any other ZNET annunciator or communication options)	OPT
6/P	Microprocessor-activated Test Switch: a momentary test switch	STD
6A	Test Switch (hard-wired) (maintained)	OPT
6A/P	Test Switch (maintained) Programmable in microprocessor	OPT
ATSEW-1	Extended warranty for MTS/MTSD 40-400A to 5 years labor	Not Avail
ATSEW-2	Extended warranty for MTS/MTSD 600-1200A to 5 years labor	Not Avail
ATSEW-3	Extended warranty for MTS/MTSD 1600-4000A to 5 years labor	Not Avail
ATSEW-4	Extended warranty for MBTS/MBTSD 100-400A to 5 years labor	Not Avail
ATSEW-5	Extended warranty for MBTS/MBTSD 600-1200A to 5 years labor	Not Avail
ATSEW-6	Extended warranty for MBTS/MBTSD 1600-4000A to 5 years labor	Not Avail
ATSEW-7	Extended warranty for MTSCCT 100-400A to 5 years labor	Not Avail
ATSEW-8	Extended warranty for MTSCCT 600-1200A to 5 years labor	Not Avail
ATSEW-9	Extended warranty for MTSCCT 1600-4000A to 5 years labor	Not Avail

Automatic Transfer Switch

MTGSE/MTGDSE Options



(Standard options available. Refer to MTG/D Options.)

Option Code	Abbreviated Feature Description	MSTDG
ATSEW-10	Extended warranty for MBTSCT 100-400A to 5 years labor	Not Avail
ATSEW-11	Extended warranty for MBTSCT 600-1200A to 5 years labor	Not Avail
ATSEW-12	Extended warranty for MBTSCT 1600-4000A to 5 years labor	Not Avail

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSENS	MSPES	MPSGS
A1	Auxiliary contact SPDT - Normal (Source 1) Failure	OPT	1	1	1	1	1
A1E	Auxiliary contact SPDT - Emergency (Source 2) Failure	OPT	1	1	1	1	1
A3	Emergency (Source 2) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1	2	2	2	2	3
A34N	Auxiliary contact - closed in neutral position (mechanically activated limit switch)	OPT (DELAY)	OPT (DELAY)	OPT (DELAY)	OPT (DELAY)	OPT (DELAY)	OPT (DELAY)
A3DT	Auxiliary contact - closed in emergency (Source 2) position (SPDT) Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary)	OPT	OPT	OPT	OPT	OPT	OPT
A4	Normal (Source 1) position auxiliary contact. Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary) (up to 4 on MTG)	1	2	2	2	2	3
A4DT	Auxiliary contact - closed in normal (Source 1) position (SPDT) Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary)	OPT	OPT	OPT	OPT	OPT	OPT
A6	Motor disconnect (obsolete, replaced by UMD option)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
A62	Motor disconnect and staged restart (1 contact)	OPT	OPT	OPT	OPT	OPT	OPT
A62T(1-10)	Extra contacts (Individual Timers) each (up to 10 circuits)	OPT	OPT	OPT	OPT	OPT	OPT
AB3	Auxiliary contact - closed in bypass emergency (Source 2) (STD up to 400A) Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)
AB4	Auxiliary contact - closed in bypass normal (Source 1) (STD up to 400A) Additional available on MTS and need to be specified with order (up to 10 using limit switches and auxiliary relays, if necessary)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)	OPT (BYP)
B9X	Battery charger for MTX 1.5 amp 12VDC or 24VDC (specify with order)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
Calibrate	Microprocessor-activated calibration feature	STD	STD	STD	STD	STD	STD
CD/P	Programmable exerciser daily, 7-14-28-365 days user-selectable, with or without load. Replaces former "D" or C/D 7 and 365 day)	Not Avail	STD	STD	STD	STD	STD
CDT/P	Exerciser no load timer (Increased functionality no longer requires a jumper.)	STD	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
CTAPA	Chicago Transfer Alarm Panel mounted in door of Nema 1 Enclosure. Includes 3 auxiliary contacts and fuse.	OPT	OPT	OPT	OPT	OPT	OPT

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSSENS	MSPES	MPSGS
CTAPB	Chicago Transfer Alarm Panel mounted in door of Nema 3R, 4, or 12 type Enclosures. Includes 3 auxiliary contacts and fuse.	OPT	OPT	OPT	OPT	OPT	OPT
DS	Disconnect switch. Disconnects source voltage to transfer power panel on ATS. (ON MTG, STD 800A and above, ON MTS, STD 600A and above)	OPT	OPT	OPT	OPT	OPT	OPT
DSA	Auxiliary contact of disconnect switch wired to terminal block for customer use.	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
DT	Time delay from Neutral switch Position to Normal on Retransfer. (This option disables the ability to have the R50.)A6 (UMD) and A62 are now available.)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)
DW	Time Delay from Neutral Switch Position to Emergency on Retransfer. ((This option disables the ability to have the R50) A6 (UMD) and A62 are now available.)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)
E	Engine start relay (SPDT)	STD	STD	STD	STD	STD	STD
EL/P	Event log of last 16 events	STD	STD	STD	STD	STD	STD
F	Fan contact. Closed when engine runs (SPNO)	OPT	OPT	OPT	OPT	OPT	OPT
GB1	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 3 - #8 - 1/0 cables (40-1200A only)	OPT	OPT	OPT	OPT	OPT	OPT
GB2	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 6 - #8 - 1/0 cables (40-1200A only)	OPT	OPT	OPT	OPT	OPT	OPT
GB3	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 6 - #6 - 250MCM cables (600-1200A only)	OPT	OPT	OPT	OPT	OPT	OPT
GB4	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 12 - #6 - 250MCM cables (600-1200A only, but MBTS series 40-4000A)	OPT	OPT	OPT	OPT	OPT	OPT
GB5	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 8 - #2 - 600MCM cables (600-1200A only)	OPT	OPT	OPT	OPT	OPT	OPT
GB6	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 12 - #2 - 600MCM cables (600-4000A)	OPT	OPT	OPT	OPT	OPT	OPT
GB7	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 24 - #2 - 600MCM cables (600-4000A only)	OPT	OPT	OPT	OPT	OPT	OPT

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSSENS	MSPES	MPSGS
GB8	Ground bus - Mechanical Lugs (Consult factory for special quotation if total # of ground cables exceeds 1/3 total # of cables into switch) 36 - #2 - 600MCM cables (600-4000A only)	OPT	OPT	OPT	OPT	OPT	OPT
HH1	Heater and humidistat 208/240V-mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT	OPT	OPT	OPT	OPT
HH2	Heater and humidistat 380/600V- mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT	OPT	OPT	OPT	OPT
HT1	Heater and thermostat 208/240V-mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT	OPT	OPT	OPT	OPT
HT2	Heater and thermostat 380/600-mounted and interwired in transfer switch enclosure (Requires larger enclosure 40-200A)	OPT	OPT	OPT	OPT	OPT	OPT
J1E	Adjustable under frequency sensor (Source 2 or Emergency)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
J1N	Adjustable under frequency sensor (Source 1 or Normal)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
J2E	Adjustable over/under frequency sensor (Source 2 or Emergency)	STD	STD	STD	STD	STD	STD
J2N	Adjustable over/under frequency sensor (Source 1 or	STD	STD	STD	STD	STD	STD
K	Frequency meter door mounted	OPT	OPT	OPT	OPT	OPT	OPT
K/P	Frequency indication (on the controller)	STD	STD	STD	STD	STD	STD
L1	LED Source 2 (Emergency) position indication	STD	STD	STD	STD	STD	STD
L2	LED Source 1 (Normal) position indication	STD	STD	STD	STD	STD	STD
L3	LED Source 1 (Normal) source availability indication	STD	STD	STD	STD	STD	STD
L4	LED Source 2 (or Emergency) source availability indication	STD	STD	STD	STD	STD	STD
LM	Selector switch (S5 or S12) out of automatic position (pilot light only)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
LN/P	Center-off position / LCD indication on microprocessor	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)	STD (DELAY)
M1A	Load side Ammeter - 40-260amps (1-phase) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M1B	Load side Ammeter - 400-1200amps (1-phase) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M1C	Load side Ammeter - 1600-2000amps (1-phase) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M1D	Load side Ammeter - 3000-4000amps (1-phase) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M2A	Load side Ammeter - 40 -260 (3-phase with selector switch) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M2B	Load side Ammeter - 400-1200amps (3-phase with selector switch) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M2C	Load side Ammeter - 1600-2000amps (3-phase with selector switch) 2%	OPT	OPT	OPT	OPT	OPT	OPT
M2D	Load side Ammeter - 3000-4000amps (3-phase with selector switch) 2%	OPT	OPT	OPT	OPT	OPT	OPT

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSSENS	MSPES	MPSGS
EVM-VP1	Enervista Viewpoint Monitoring for MTU Onsite Energy ATS. Permits Plug-&-Play Monitoring for up to 32 MTU Onsite Energy Transfer Switches. Requires Modbus Communications cards on ATS. [Note: See "M90/91A" and "M90/91B" meter options for factory supply and pre-wiring for Enervista Monitoring].	OPT	OPT	OPT	OPT	OPT	OPT
N1	Running time indicator (for engine running) (door-mounted counter) (Note: Digital is available in controller.)	OPT	OPT	OPT	OPT	OPT	OPT
N2	Operation counter (door-mounted counter) (Note: Digital is available in controller.)	OPT	OPT	OPT	OPT	OPT	OPT
NEMA1A	Gasketed door on NEMA 1 enclosure "NEMA 1A" (add to enclosure price)	OPT	OPT	OPT	OPT	OPT	OPT
OCVR-1SG	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor only (Not NEMA 4)	OPT	OPT	OPT	OPT	OPT	OPT
OCVR-1SS	Lockable, see-through cover for NEMA 3R or NEMA 12 Microprocessor selectors and meters (Not NEMA 4)	OPT	OPT	OPT	OPT	OPT	OPT
P1	Engine start timer P1 (adjustable up to 6 seconds)	STD	STD	STD	STD	STD	STD
P2	Engine start timer P2 (adjustable up to 300 seconds)	OPT	OPT	OPT	OPT	OPT	OPT
Q2	Peak shave/remote load test/area protection - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	STD	STD	STD	STD	STD
Q3	Inhibit transfer to emergency (load add relay) - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	STD	OPT	STD	STD
Q7	Inhibit transfer to normal - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	STD	STD	STD	STD
R1-1	Over voltage sensing (Source 1 or Normal) 1-phase	OPT	OPT	OPT	STD	STD	STD
R1-3	Over voltage sensing (Source 1 or Normal) 3-phase	OPT	OPT	OPT	STD	STD	STD
R2E	Under voltage sensing: (Source 2 or Emergency) (1-phase) (STD 3-phase if U-U sensing is ordered)	STD	STD	STD	STD	STD	STD
R7	Over voltage sensing (Source 2 or Emergency) 1-phase	STD	STD	STD	STD	STD	STD
R8	Over voltage sensing (Source 2 or Emergency) 3-phase	STD	STD	STD	STD	STD	STD
R15	Load shed provisions to transfer Source 2 or emergency to dead normal (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	OPT	OPT	OPT	STD
R15D	Load shed provisions to transfer Source 2 or emergency to neutral position (only available on delayed transition units) (includes Q3 load add relay - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	OPT	OPT	OPT	STD
R16	Phase rotation sensing of Source 1 and Source 2	OPT	STD	STD	STD	STD	STD
R17	Under voltage sensing: Source 2 (Emergency) (3-phase)	STD	STD	STD	STD	STD	STD

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSENS	MSPES	MPSGS
R26	Provisions for transfer to dead Source 2 or emergency for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	OPT	OPT	OPT	OPT
R26D	Provisions for transfer to neutral position (only available on delayed transition units) for interruptible power rates - Relay (SPDT) [Need to specify voltage (120VAC, 24VAC, 24VDC) 120V default standard]	OPT	OPT	OPT	OPT	OPT	OPT
R50	In Phase Monitor between Source 1 and Source 2 to allow transfer (with enable/disable)	STD	STD	STD	STD	STD	STD
SW1	Three position engine selector switch (Auto/Test/Off)	OPT	OPT	OPT	OPT	OPT	OPT
SW1K	Three position engine selector key switch (Auto/Test/Off)	OPT	OPT	OPT	OPT	OPT	OPT
SW2	Disconnect switch in series with accessory E to disconnect engine starting circuit	OPT	OPT	OPT	OPT	OPT	OPT
SW2K	Keyed Disconnect switch in series with accessory E to disconnect engine starting circuit	OPT	OPT	OPT	OPT	OPT	OPT
SW3	Prime source selector switch choosing Source 1 or Source 2 as normal source. Consult factory for special quotation on gen-gen systems (requires double P & U timers for proper operation)	OPT	OPT	OPT	OPT	OPT	OPT
SW3K	Keyed Prime source selector switch choosing Source 1 or Source 2 as normal source. Consult factory for special quotation on gen-gen systems (requires double P & U timers for proper operation)	OPT	OPT	OPT	OPT	OPT	OPT
S5/P	Microprocessor-activated auto/manual retransfer selector switch for transferring to normal source (includes Micro activated YN accessory) Consult factory for special quotation on hard-wired options.	OPT (N/A with S12/P)	OPT (N/A with S12/P)	OPT (N/A with S12/P)	Not Avail	STD	Not Avail
S12/P	Microprocessor-activated auto/manual retransfer selector switch for transferring to both Source 1 and Source 2 (includes Micro activated YN & YE accessory) Consult factory for special quotation on hard-wired options.	OPT (N/A with S5/P)	OPT (N/A with S5/P)	OPT (N/A with S5/P)	STD	Not Avail	STD
S13/P	Microprocessor-activated Commit/No Commit on transferring to emergency source (with enable/disable)	STD	STD	STD	STD	STD	STD
S14K	Keyed selector switch for (re-transfer to normal - test - auto)	OPT	OPT	OPT	OPT	OPT	OPT
SSS	SSS - (SSS0000) Safety Shutter System - Horizontal Bypass Switches (MBTS 600 thru 3000 Amp & MBTSCT 100-3000 Amp)	OPT	OPT	OPT	OPT	OPT	OPT
T	Retransfer to normal adjustable time delay	STD	STD	STD	STD	STD	STD
TMS	Transition Mode Selector Switch (only available with Closed Transition)	Optional (Closed Trans only)	Optional (Closed Trans only)	Optional (Closed Trans only)	Optional (Closed Trans only)	Optional (Closed Trans only)	Not Avail
T3/W3	Pre-signal contact on transfer to Source 1 (Normal) or Source 2 (Emergency) during test	OPT	OPT	STD	OPT	STD	STD

Automatic Transfer Switch

MTS/MTSD/MTSCT/MBTS/MBTSD/MBTSCT Options (with MX250 Controller)

Option Code	Abbreviated Feature Description	MSTDS (Default)	MEXES	MCONS	MSSENS	MSPES	MPSGS
U	Engine stop/cool adjustable cool down timer	STD	STD	STD	STD	STD	STD
UMD	Pre- and post-transfer output adjustable time range. Functions in both directions. Includes 2 circuits. Additional circuits available. (See A62.)	OPT	OPT	STD	OPT	STD	STD
VA1120	Remote annunciator connections for L1, L2, YN, TS - Relay (120VAC)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
VA124	Remote annunciator connections for L1, L2, YN, TS - Relay (24VAC)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
VA2	Padlock hasp/chain (padlock supplied by others)	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail	Not Avail
VI	Voltage imbalance between phases (applies to 3-phase only)	STD	STD	STD	STD	STD	STD
W	Adjustable time delay on transfer to emergency source	STD	STD	STD	STD	STD	STD
YEN/P	Bypass transfer timers function (soft switch in controller)	STD	STD	STD	STD	STD	STD
ZNETL	Lonworks microprocessor communication module	OPT	OPT	OPT	OPT	OPT	OPT
ZNETM	Modbus RTU microprocessor communication module	OPT	OPT	OPT	OPT	OPT	OPT
6/P	Microprocessor-activated Test Switch: a momentary test switch	STD	STD	STD	STD	STD	STD
6A	Test Switch (hard-wired) (maintained)	OPT	OPT	OPT	OPT	OPT	OPT
6A/P	Test Switch (maintained) Programmable in microprocessor	OPT	OPT	OPT	OPT	OPT	OPT
6BK	Test Switch (hard-wired) Maintained Auto - Momentary Test (Key Operated)	OPT	OPT	OPT	OPT	OPT	OPT
6CK	Test Switch (hard-wired) Maintained Auto - Maintained Test (Key Operated)	OPT	OPT	OPT	OPT	OPT	OPT

Automatic Transfer Switch Special Lug Options



Switch Size	Std # of Cables per Pole	Option #	Lug Style	Std Compression Lug Size
40 ATS Only (see note 2)	1	18A	Compression	#2
80 ATS Only (see note 2)	1	18B	Compression	1/0
100 ATS/Bypass (see note 2)	1	18C	Compression	1/0
150 AST/Bypass (see note 2)	1	19A	Compression	3/0
225 ATS & Bypass	1	19B	Compression	250 MCM
260 ATS & Bypass	1	19C	Compression	350 MCM
400 ATS & Bypass	1	20	Compression	500 MCM
600 ATS & Bypass	2	21	Compression	500 MCM
800 ATS & Bypass	3	22A	Compression	500 MCM
1000 ATS & Bypass	4	22B	Compression	500 MCM
1200 ATS & Bypass	4	22C	Compression	500 MCM
1600/2000 ATS	4	23	Mechanical	600 MCM
1600/2000 BYP	4	23	Mechanical	600 MCM
1600/2000 ATS	8	24	Mechanical	600 MCM
1600/2000 BYP	8	24	Mechanical	600 MCM
1600/2000 ATS	8	24A	Mechanical	750 MCM
1600/2000 BYP	8	24A	Mechanical	750 MCM
1600/2000 ATS/BYP	4	23A	Compression	500 MCM
1600/2000 ATS/BYP	6	23B	Compression	750 MCM
1600/2000 ATS/BYP	8	23C	Compression	500 MCM
3000 ATS/BYP	8	25A	Compression	500 MCM
3000 ATS/BYP	6	25B	Compression	750 MCM
3000 ATS/BYP	8	25C	Mechanical	600 MCM
3000 ATS/BYP	8	25D	Mechanical	750MCM
4000 ATS/BYP	12	26A	Mechanical	600 MCM
4000 ATS/BYP	12	26B	Mechanical	750 MCM
4000 ATS/BYP	12	27A	Compression	500 MCM
4000 ATS/BYP	12	27B	Compression	750 MCM

Notes:

1. Compression lugs are not available on MTG or MTX Series Product.
2. Compression lugs not available on MTS open transition below 225A.
3. Consult factory for quotation if special lug configurations are required.
4. Compression lugs add an additional 2-6 weeks of delivery time. Consult factory.

REAR BUS CONNECTION (MTS4-120) OPEN STYLE

- MTS 40 - 1200 Amp - Open Style
- MBTS 100 - 1200 Amp - Open Style

SIS WIRING

SIS type wire is available on MTS series products, however, this is normally a spec item written in by competitors. Delivery and cost are *greatly* impacted by this requirement. A minimum of four added weeks of manufacturing time (added to standard lead times) is required.

- MTS and MTSD transfer switch
- MBTS and MBTSD bypass switch
- MTSTCT and MBTSTCT closed transition transfer and/or bypass switch

RING TERMINALS

Ring type terminals are also a specification item written in by others and present a significant additional manufacturing cost and delivery delay. Ring terminals used in place of spade type where possible (not in place of any connection made through control plugs) require a minimum of 4 added weeks of manufacturing time (added to standard lead times) and the following list adders apply to the product:

- MTS and MTSD transfer switch
- MBTS and MBTSD bypass switch
- MTSTCT and MBTSTCT closed transition transfer and/or bypass switch

INVERTED STYLE SWITCH

Wired and marked for emergency at top and normal at bottom
Bypass NOT AVAILABLE in inverted style

- MTS transfer switch only

ZNET SPECIAL ACCESSORIES

Option Code	Abbreviated Feature Description
ZNET10PS	Power Supply (120/240VAC to 24VAC) for annunciator when 24V AC/DC is not available for control power.
ZNET900	Annunciator (Ionworks) up to 8 ATS units. Must also add ZNETL option to order. Must specify with order # of switches and nomenclature for nameplates.
ZNET901	Annunciator (Ionworks) extension up to 6 units (up to 14 total with ZNET 900 & 901). More units will require additional ZNET900 & 901s.

Automatic Transfer Switch

Custom Info



INTEGRAL-MOUNTED BATTERY CHARGER - ALL MTG & MTS TRANSFER SWITCHES	
Option Code	Abbreviated Feature Description
BCI 12 03 LV X XX	12 VDC, 3 Ampere Output, [120VAC 2W, 120/240VAC 3W, 120/208VAC 4W, 120/240VAC 4W], 60Hz
BCI 12 10 LV X XX	12 VDC, 10 Ampere Output, [120VAC 2W, 120/240VAC 3W, 120/208VAC 4W, 120/240VAC 4W], 60Hz
BCI 24 03 LV X XX	24 VDC, 3 Ampere Output, [120VAC 2W, 120/240VAC 3W, 120/208VAC 4W, 120/240VAC 4W], 60Hz
BCI 24 10 LV X XX	24 VDC, 10 Ampere Output, [120VAC 2W, 120/240VAC 3W, 120/208VAC 4W, 120/240VAC 4W], 60Hz
Option 'HV' (BCI xx 03 HV x xx)	PT and Fusing for 480VAC 3 Phase, 4 Wire ATS, 60Hz, 3A Charger
Option 'HV' (BCI xx 10 HV x xx)	PT and Fusing for 480VAC 3 Phase, 4 Wire ATS, 60Hz, 10A Charger
Alarm Option (BCI xx 03 xx A xx)	Alarm Dry Contact Output & Door-Mounted Alarm LED, 3A Charger
Alarm Option (BCI xx 10 xx A xx)	Alarm Dry Contact Output & Door-Mounted Alarm LED, 10A Charger
Enclosure Option S1 (BCI xx xx xx x S1)	36" x 24" x 14" Custom Enclosure for MTG(S) 40-200 Amp ATS
Enclosure Option S1 (BCI xx xx xx x S2)	46" x 24" x 14" Custom Enclosure for MTG 225 Amp ATS
INTEGRAL-MOUNTED TVSS DEVICE - ALL MTG & MTS TRANSFER SWITCHES	
Option Code	Abbreviated Feature Description
TVI ME XXX 065 NC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 65kA per Mode, Standard
TVI ME XXX 080 NC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 80kA per Mode, Standard
TVI ME XXX 100 NC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 100kA per Mode, Standard
TVI ME XXX 065 NF X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 65kA per Mode, With Surge Counter, No Noise Filter
TVI ME XXX 080 NF X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 80kA per Mode, With Surge Counter, No Noise Filter
TVI ME XXX 100 NF X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 100kA per Mode, With Surge Counter, No Noise Filter
TVI ME XXX 065 WC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 65kA per Mode, With Surge Counter and Noise Filter
TVI ME XXX 080 WC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 80kA per Mode, With Surge Counter and Noise Filter
TVI ME XXX 100 WC X XX	Integrally-mounted TVSS, [40-800 Amp MTG(S)], 100kA per Mode, With Surge Counter and Noise Filter
TVI HE XXX 100 NC X XX	Integrally-mounted TVSS, [1000-4000 Amp MTG(S)], 100kA per Mode, With Surge Counter and Noise Filter
TVI HE XXX 150 NC X XX	Integrally-mounted TVSS, [1000-4000 Amp MTG(S)], 150kA per Mode, With Surge Counter and Noise Filter
TVI HE XXX 200 NC X XX	Integrally-mounted TVSS, [1000-4000 Amp MTG(S)], 200kA per Mode, With Surge Counter and Noise Filter
TVI HE XXX 300 NC X XX	Integrally-mounted TVSS, [1000-4000 Amp MTG(S)], 300kA per Mode, With Surge Counter and Noise Filter
Alarm Option 'A'	Customer contact output and Door-mounted Alarm LED
Enclosure Option S1	36" x 24" x 14" Custom Enclosure for MTG(S) 40-200 Amp ATS
Enclosure Option S2	46" x 24" x 14" Custom Enclosure for MTG 225 Amp ATS

Automatic Transfer Switch
Version History



Date	Summary of Updates	Version
1/15/2013	Under Custom Info , branding for the CTS / CTG were updated to reflect MTU Onsite Energy branding.	2013-01 v1

MTG Series

Low-Voltage Automatic Transfer Switches



MTU Onsite Energy MTG Series switches are built for standard applications requiring the dependability and ease of operation found in a power contactor switch.

- Ratings 40 to 3000 amps (2, 3 or 4 poles)
- UL 1008 listed at 480 VAC
- CSA certified at 600 VAC (200-260 amps - 480V)
- NFPA 70, 99, 101 and 110
- IEEE 446 and 241
- NEC 517, 700, 701 and 702
- NEMA ICS2-447
- UL 508 and 50
- ANSI C33.76
- ICS 6
- NEMA 250
- Equipment (*Controls and Power Section*)

Seismic Test Qualified to:

- IBC-2006
- IEEE-693-2005
- Double throw, mechanically interlocked contactor mechanism
- Electrically operated, mechanically held
- Designed for emergency and standby applications
- Available in standard (MTG) or delayed transition (MTGD) models

MTG switches are equipped with the MX150 microprocessor panel, which controls the operation and displays the status of the transfer switch's position, timers and available sources. As an embedded digital controller, the MX150 offers high reliability and ease of unattended operation across a range of applications. The MX150 features include:

- Timer and voltage/frequency settings adjustable without disconnection from the power section
- Built-in diagnostics with an LCD display for immediate troubleshooting
- LED/LCD indicators for ease of viewing and long life
- Nonvolatile memory—clock battery backup not required for standard switch operation
- Processor and digital circuitry isolated from line voltage
- Inputs optoisolated for high electrical immunity to transients and noise
- Communications network interface



Fully Approved

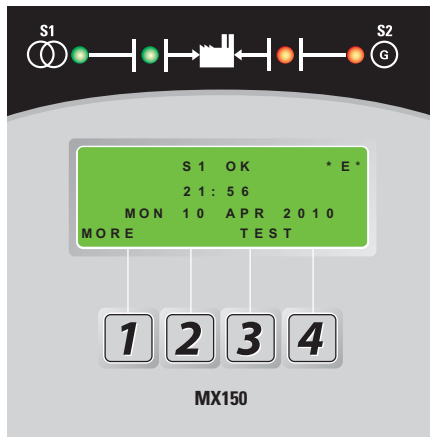
- UL and CSA listed
- NFPA 70, 99 101 and 110
- IEEE 446 and 241
- NEC 517, 700, 701 and 702
- NEMA ICS 2-447
- UL 508 and 50
- ANSI C33.76
- ICS 6
- NEMA 250
- IBC-2006
- IEEE-693-2005
- Ringing wave immunity per IEEE 472 (ANSI C37.90A)

- Conducted and Radiated Emissions per EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
- ESD immunity test per EN61000-4-2 Class B (Level 4)
- Radiated RF, electromagnetic Weld immunity test per EN61000-4-3 (ENV50140) 10v/m
- Electrical fast transient / burst immunity test per EN61000-4-4
- Surge immunity test per EN61000-4-5 IEEE C62.41 (1.2 X 50µs, 0.5 & 4 kV)
- Conducted immunity test per EN61000-4-6 (ENV50141)
- Voltage dips and interruption immunity EN61000-4-11

Design and Construction Features

- Close differential 3 phase under-voltage sensing of Source 1 (normal) – factory standard setting 90% pickup, 80% dropout (adjustable); under-frequency sensing of Source 1 factory setting 95% pickup (adjustable)
- Voltage and frequency sensing of the Source 2 (emergency)—factory standard setting 90% pickup voltage, 95% pickup frequency (adjustable)
- Test switch (fast test/load/no load) to simulate Source 1 (normal) failure – automatically bypassed should the Source 2 (emergency) fail
- NEMA Type 1 enclosure is standard – also available in open style or NEMA Types 3R, 4, 4X or 12

MX150 Control Panel



Standard Features (MSTDG Option Pkg.)

6/P	Test Switch, Momentary
A3	Auxiliary Contact: Closed when the switch is in the Source 2 position (S2)
A4	Auxiliary Contact: Closed when the switch is in the Source 1 position (S1)
CALIBRATE	Capabilities are available for Frequency and AB, BC, CA Phase to Phase voltage for both Sources
CDT	Daily 7, 14, 28 timed exercise (CDT memory backup battery included), pushbutton/timer operation
E	Engine Start Contact
EL/P	Event Log of 16 Events that track date, time, reason and action taken
J1E	Adjustable under frequency sensor for S2
K/P	Voltage and Frequency Indication for S1 and S2
L	Indicating LED Pilot Lights: L1 Indicates switch in S2 position L2 Indicates switch in S1 position L3 Indicates S1 source available L4 Indicates S2 source available
P1	Time Delay to Engine Start
Q2	Peak Shave / Remote Load Test
R50	In-Phase Monitor, self-adjusting
T	Time Delay on Retransfer to Normal: To delay retransfer to S1 (immediate retransfer on S2 failure)
R2E	Under voltage sensing of S2
S13	Microprocessor activated commit / no commit on transferring to S2
U	Time Delay for Engine Cool Down: Allows engine to run unloaded after switch retransfer to S1
W	Time Delay on Transfer to Emergency: To delay transfer to S2 after availability
YEN	Pushbutton Bypass of T & W Timers

When specified for use with a MTGD Series delayed transition switch, the control panel also includes the following:

DT	Time Delay from Neutral Switch Position to S1 on Retransfer
DW	Time Delay from Neutral Switch Position to S2
LN/P	Center-Off position/Off Delay Timing indicating lights

Additional Standard Features (MEXEG Option Pkg.)

CDP	Clock Exerciser Load/No Load (Replaces CDT Exerciser Option)
VI	Voltage Imbalance Monitor (Three Phase)

MTU Onsite Energy MTG Series Ordering Information

MODEL/TYPE	CONTROL PANEL	APPLICATION	AMPERE SIZE	SWITCHED POLES	ENCLOSURE TYPE	OPERATIONAL VOLTAGE	ACCESSORIES
M T G 0 0 0	A 0	0	0 0 4	B	0 1	A B	M S T D
Standard (Open Transition)	Entelli-Switch 150 Microprocessor Control Unit	Utility - Generator	40 amps	2 Poles	Type 1 Enclosure	Consult Table Below	M E X E
M T G D 0 0 0	U	Utility - Utility	0 0 8	E	1 2		M A N O
Delayed Transition	Manual Transfer	80 amps	3 Poles	Type 12 Enclosure	3 R		Then choose additional accessories
		100 amps	4 Poles	Type 3R Enclosure	4 0		6A
		150 amps		Type 4 Enclosure	4 X		6AP
		200 amps		Type 4X Enclosure	0 0		A1
		225 amps		Open Style Unit			A1E
		260 amps					A3
		400 amps					A4
		600 amps					A62
		800 amps				ATGEW-X	
		1000 amps				CTAP	
		1200 amps				DS	
		1600 amps				HT	
		2000 amps				LCM	
		2600 amps				M90	
		3000 amps				M90A	
						M90B	
						M91	
						M91A	
						M91B	
						MCM	
						OCVR-1SG	
						OCVR-1SS	
						T3/W3	
						UMD	
						VI	
						None	

Switch Types

- Standard:** Unless otherwise noted, the standard switch with quick transfer will be supplied.
- Delayed Transition:** When ordered as the MTGD, the delayed transition switch offers time delay during transfer from one position to the other. This is primarily for transfer of large motor or inductive loads. The operation of the delayed transition switch is totally independent of the synchronism of the power sources, eliminating the need for in-phase monitors or extensive motor-disconnect control wiring between the transfer switch and motor control centers.

Examples

MTG000A00040F-ZEC01ZVC40MSTD

This number string shows the correct format for a MTG Series Automatic Transfer Switch with an MX150 microprocessor control unit, Utility - Generator, 400 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3f, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008 Withstand and Closing Ratings

Please refer to MTU Onsite Energy Publication TB-1102.

A	B	Voltage	Phase	ConWg.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	2	110/220	1	3 wire	50
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	5	139/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
6	3	575	1	2 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order. Only the most common voltages are shown above.

Options

6A	Test Switch, Maintained
6AP	Test Switch, Maintained Programmable
A1	Auxiliary Contact, operates on Source 1 line failure
A1E	Auxiliary Contact, operates on Source 2 line failure
A3	Auxiliary Contacts: Closed when the transfer switch is in Source 2 position
A4	Auxiliary Contacts: Closed when the transfer switch is in Source 1 position
A62	Sequential Universal Motor Load Disconnect Circuit. Normally closed Auxiliary contacts for Motor Loads. Open 0-60 seconds prior to transfer, after transfer, or both in either direction then reclose in timed sequence after transfer.
ATGEW-X	Extended annual parts and labor warranty (1-4 years for a total of 5 years max.)
CTAP	Alarm panel on transfer to emergency w/silence button & light
DS	Inhibits transfer in either direction when in inhibit. Allows automatic operation when in Auto (Standard on 800A and above)
HT	Heater and Thermostat
LCM	LonWorks Communication Module
MCM	Modbus rtu Communication Module

M90 Series Power Measurement Meters (Not available in NEMA 4 enclosure)

M90	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability. 40 - 1200 Amps.
M90A	Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications
M90B	Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications
M91	EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency, THD). Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. Front IrDA Port Laptop Connection. Standard Modbus RTU RS485 or DNP 3.0 communications capability.
M91A	Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Modbus RS485 Serial Communications
M91B	Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Ethernet TCP/IP Communications

OCVR-1SG	Lockable see-through microprocessor cover for NEMA 3R or 12
OCVR-1SS	Lockable see-through microprocessor and meters cover for NEMA 3R or 12
T3/W3	Elevator Pre-Signal Auxiliary Contacts: Open 0-60 seconds prior to transfer to either direction, re-closes after transfer.
UMD	Universal Motor Load Disconnect Circuit: Auxiliary Contact opens 0-5 minutes prior to transfer in either direction, re-closes after transfer. Can be configured by end user for Pre-transfer, Post-transfer, or both.
VI	Voltage Imbalance Monitor (Three Phase)

NOTE:

For additional options or other configurations, contact the MTU Onsite Energy factory.

Reference Charts

Testing Standards	
UL and CSA listed	UL 1008, CSA 22.2 No. 178
Ring wave immunity	IEEE 472 (ANSI C37.90A)
Conducted and radiated emissions	EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
ESD immunity test	EN61000-4-2 Class B (Level 4)
Radiated RF, electromagnetic field immunity test	EN61000-4-3 (ENV50140) 10v/m
Electrical fast, transient/burst immunity test	EN61000-4-4
Surge immunity test	EN61000-4-5 IEEE C62.41 1.2 X 50µs, 0.5 to 4 kV
Conducted immunity test	EN61000-4-6 (ENV50141)
Voltage dips and interruption immunity	EN61000-4-11

MTG AL/CU UL Listed Solderless Screw-Type Terminals for External Power Connections *			
Switch Size (Amps)	Normal, Emergency and Load Terminals		
	Cables per Phase & Neutral	Range of Wire Sizes	
40	1	#8 to 3/0	8-85 mm ²
80			
100		#6 to 250 MCM	13-127 mm ²
150			
200, 225			
260			
400	#6 to 350 MCM	13-177 mm ²	
600	#4 to 600 MCM	21-304 mm ²	
800, 1000, 1200	2	#2 to 600 MCM	33-304 mm ²
1600, 2000, 2600, 3000	4	#2 to 600 MCM	33-304 mm ²
	8	#2 to 600 MCM	33-304 mm ²

* For MTGD series data, contact the MTU Onsite Energy factory

Standard MX150 Control Setting Ranges			
	Control Function	Range	Factory Setting
MSTDG	Source 1 Line Sensing - Under-voltage Dropout/Pickup	75-98% 85-100%	80% 90%
	Source 2 Line Sensing - Under-voltage Dropout/Pickup	75-98% 85-100%	80% 90%
	Source 2 Line Sensing - Under-frequency Dropout/Pickup	88-98% 90-100%	90% 95%
	Time Delay - Engine Start (Acc. P1)	0-10 seconds	3 seconds
	Time Delay - Engine Cool Down (Acc. U)	0-60 minutes	5 minutes
	Time Delay - Transfer to Source 2 (Acc. W)	0-5 minutes	1 second
	Time Delay - Retransfer to Source 1 (Acc. T)	0-60 minutes	30 minutes
	Time Delay - Motor Disconnect or Transfer Presignal (Acc. UMD, or T3/W3)	0-60 seconds	20 seconds
	Delayed Transition Time Delays (DT, DW)	0-10 minutes	5 seconds
	Event Exerciser (CDT)	5-60 min.-1,7,14 or 28 days load or no load	20 min. - 7 days no load
MESEG	Programmable Event Exerciser (CDP)	365 day cycle, load or no load	0 min. - 7 days no load
	Voltage Imbalance (VI)	5-20% nominal; 10-30 sec.	10% Fail, 8% Restore; 30 sec.
Options	Elevator Pre-Signal (T3/W3)	0-60 seconds	20 seconds
	Sequential Motor Load Disconnect (A62)	0-5 minutes	20 seconds
	Motor Load Disconnect (UMD)	0-60 seconds	5 seconds

Dimensional and Weight Specifications

MTG and MTGD Model, Dimensions and Weight																	
Model	Ampere Rating	Poles	NEMA 1				Weight		Application Notes								
			Height (A)	Width (B)	Depth (C)	Ref. Figure	Open Type	NEMA 1									
MTG	40, 80 100, 150 200	2, 3	24 (61)	18 (46)	11 (28)	A	14 (6)	69 (31)	1 - 6								
		4					20 (9)	75 (34)									
	225	2, 3	46 (117)	24 (61)	14 (36)		59 (27)	69 (31)	1 - 5								
		4					70 (32)	75 (34)									
	260	2, 3					59 (27)	114 (52)									
		4					70 (32)	125 (57)									
	400	2, 3					59 (27)	168 (76)									
		4					70 (32)	180 (82)									
	600	2, 3				74 (188)	40 (102)	19.5 (50)		B	71 (32)	224 (102)	1 - 5, 7				
		4									81 (37)	214 (97)					
	800	2, 3	190 (86)	460 (209)													
		4	210 (95)	490 (222)													
	1000, 1200	2, 3	190 (86)	475 (216)													
		4	210 (95)	560 (254)													
	1600, 2000	3	90 (229)	35.5 (90)	48 (122)				C		345 (156)	1030 (467)		1 - 5, 7-8			
		4									450 (204)	1180 (535)					
2600, 3000		3				465 (211)	1150 (522)										
		4				670 (304)	1400 (635)										
MTGD	40, 80 100, 150 200, 225	2, 3				46 (117)	24 (61)	14 (36)		A	18 (8)	127 (58)	1 - 6				
		4									24 (11)	133 (60)					
	260, 400	2, 3				66 (168)	24 (61)	19.5 (50)			B	65 (29)	176 (80)		1 - 5		
		4										76 (34)	188 (85)				
	600	2, 3	77 (35)	221 (100)													
		4	87 (39)	230 (104)													
	800, 1000, 1200	2, 3	74 (188)	40 (102)	19.5 (50)				B	210 (95)	475 (215)	1 - 5, 7					
		4								230 (104)	560 (254)						
	1600, 2000	3								90 (229)	35.5 (90)		48 (122)	C	365 (166)	1030 (467)	1 - 5, 7-8
		4													470 (213)	1180 (535)	
	2600, 3000	3				485 (220)	1150 (522)										
		4				690 (313)	1400 (635)										

1. Metric dimensions (cm) and weights (kg) shown in parentheses adjacent to English measurements.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, lights, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
5. Special enclosure (NEMA 3R, 4, 4X, 12, etc.) dimensions and layouts may differ. Consult the MTU Onsite Energy factory for details.
6. A MTG(D) 40-225A, when ordered with the following options, will require a larger enclosure: A62(T), Digital Meter, HT, OCVR-1SG, OCVR-1SS. Contact the MTU Onsite Energy factory for dimensions.
7. Add 3" in height for removable lifting eyes.
8. Ventilation louvers on side and rear of enclosure at 1600-3000 amps. One set of louvers must be clear for airflow with standard cable connections.

Reference Figures



Figure A

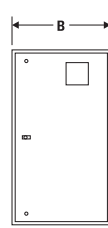


Figure B

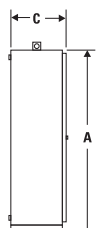


Figure C



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MTGSE/MTGDSE

Service Entrance Rated Automatic Transfer Switches

Introduction

While providing the functionality of an automatic transfer switch (ATS), MTU Onsite Energy's MTGSE Series integrates the utility circuit breaker, optional transient voltage surge suppression and power monitor into one simple coordinated package.

- Suitable for use as Service Entrance equipment
- Ratings 40 to 800 amps (2, 3 or 4 pole) and 1000 - 3000 amps (3 or 4 pole)
- UL 1008 listed at 480 VAC
- UL 891 listed and labeled suitable for use as Service Equipment
- Double throw, mechanically interlocked ATS contactor mechanism
- Electrically operated, mechanically held ATS
- Designed for emergency and standby applications
- Optional integrated load center for multiple loadside connections available up to 240 volts
- Additional options include integrated battery charger, Ground Fault Protection (GFP), shunt trip selector, power monitor and integrated TVSS
- Available with delayed transition feature (MTU Onsite Energy's MTGDSE)

Features and Benefits

MTU Onsite Energy's MTGSE Series switches are equipped with MTU Onsite Energy's MX150 microprocessor panel, which controls the operation and displays the status of the transfer switch's position, timers and available sources.

As an embedded digital controller, the MX150 offers high reliability and ease of unattended operation across a range of applications. The MX150 features include:

- Timer and voltage/frequency settings adjustable without disconnection from the power section
- Built-in diagnostics with an LCD display for immediate troubleshooting
- LED/LCD indicators for ease of viewing and long life
- Nonvolatile memory – clock battery backup not required for standard switch operation
- Processor and digital circuitry isolated from line voltage
- Inputs opto-isolated for high electrical immunity to transients and noise
- Communications network interface (optional)



Fully Approved

- UL 891, UL 1008, CSA 22.2
- Ringing wave immunity per IEEE 472 (ANSI C37.90A)
- Conducted and Radiated Emissions per EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
- ESD immunity test per EN61000-4-2 (Level 4)
- Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
- Electrical fast transient/burst immunity test per EN61000-4-4
- Surge immunity test per EN61000-4-5 IEEE C62.41 (1.2 X 50µs, 0.5 to 4 kV)
- Conducted immunity test per EN61000-4-6 (ENV50141)
- Voltage dips and interruption immunity EN61000-4-11
- NFPA 70, 99, 101, 110

Design and Construction Features

- Includes integrated and pre-wired Source 1 (normal) molded case circuit breaker (2 or 3 pole) for 40-800 amps, insulated case circuit breaker (3 pole) for 1000-3000 amps
- Includes mechanical lug connections for cables
- Close differential 3 phase under-voltage sensing of Source 1 – factory standard setting 90% pickup, 80% dropout (adjustable); under-frequency sensing of Source 1 factory setting 95% pickup (adjustable)
- Voltage and frequency sensing of Source 2 (emergency) – factory standard setting 90% pickup voltage, 95% pickup frequency (adjustable)
- Test switch (fast test/load/no load) to simulate normal source failure – automatically bypassed should Source 2 fail
- NEMA Type 1 enclosure is standard with optional NEMA 3R available
- Ground fault protection (GFP) is standard on 1000 - 3000 Amp and optional on 40 - 800 Amp
- Disconnect link on Neutral and Ground

Key Features



MTU Onsite Energy's MTGSE 1200 Amp, 480V, NEMA 1 Shown

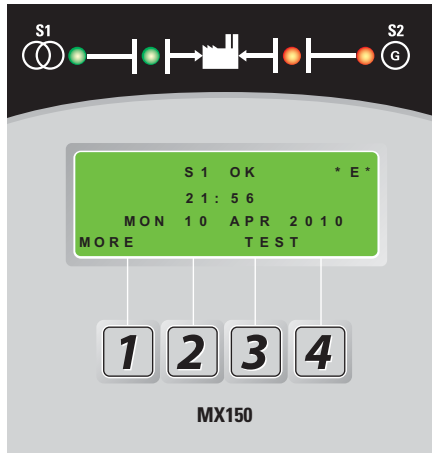
Closed View

1. MX150 Microprocessor Controller
2. Service Disconnect Breaker
3. NEMA 1 Enclosure
4. Service Entrance Rated Label

Open View

1. Power Panel (4-pole shown)
2. MX150 Microprocessor Controller
3. MTU Onsite Energy PowerBreak® II Service Disconnect Breaker
4. Service Disconnect Breaker Customer I/O Connections
5. Service Entrance Rated Label
6. UL 891 Label

MX150 Control Panel



Front View

Standard Features (MSTDG Option Pkg.)

6/P	Test Switch, Momentary
A3	Auxiliary Contact: Closed when the switch is in the Source 2 position (S2)
A4	Auxiliary Contact: Closed when the switch is in the Source 1 position (S1)
CALIBRATE	Capabilities are available for Frequency and AB, BC, CA Phase to Phase voltage for both Sources
CDT/P	Daily 7, 14, 28 timed load/no-load exerciser (cdt memory backup battery included), pushbutton/timer operation
E	Engine Start Contact
EL/P	Event Log of 16 Events that track date, time, reason and action taken
GFP	Ground fault protection, includes electronic trip, long time, short time and instantaneous trip. (Standard for 1000 - 3000 Amps)
J1E	Adjustable under frequency sensor for S2
K/P	Voltage and Frequency Indication for S1 and S2
L	Indicating led Pilot Lights: L1 Indicates switch in S2 position L2 Indicates switch in S1 position L3 Indicates S1 source available L4 Indicates S2 source available
P1	Time Delay to Engine Start
Q2	Peak Shave / Remote Load Test
R2E	Under voltage sensing of S2
R50	In-Phase Monitor, self-adjusting
S13	Microprocessor activated commit / no commit on transferring to S2
T	Time Delay on Retransfer to Normal: To delay retransfer to S1 (immediate retransfer on generator set failure)
U	Time Delay for Engine Cool Down: Allows engine to run unloaded after switch retransfer to S1
VI	Voltage Imbalance Monitor (Three Phase)
W	Time Delay on Transfer to Emergency: To delay transfer to S2 after availability
YEN	Pushbutton Bypass of T & W Timers

When specified for use with a mtgdse Series delayed transition switch, the control panel also includes the following:

DT	Time Delay from Neutral Switch Position to S1 on Retransfer
DW	Time Delay from Neutral Switch Position to S2
LN/P	Center-Off position/Off Delay Timing indicating lights

Additional Standard Features (MEXEG Option Pkg.)

A3	Additional Auxiliary Contact: Closed when the switch is in the S2 position
A4	Additional Auxiliary Contact: Closed when the switch is in the S1 position
CDP	Clock Exerciser Load/No Load (Replaces CDT/P option)

MTG(D)SE Transfer Switch Options

6A	Test Switch, Maintained
6AP	Test Switch, Maintained Programmable
A1	Auxiliary Contact, operates on Source 1 line failure
A1E	Auxiliary Contact, operates on Source 2 line failure
A3	Auxiliary Contacts: Closed when the transfer switch is in Source 2 position
A4	Auxiliary Contacts: Closed when the transfer switch is in Source 1 position
A62	Sequential Universal Motor Load Disconnect Circuit. Normally closed Auxiliary contacts for Motor Loads. Open 0 - 60 seconds prior to transfer, after transfer, or both in either direction then reclose in timed sequence after transfer.
ATGEW-X	Extended annual parts and labor warranty (1 - 4 years for a total of 5 years max.)
BB	Auxiliary Contact, circuit breaker position two form C
BC12	Integrated generator battery charger, 12 VDC, 3 Amp output
BC24	Integrated generator battery charger, 24 VDC, 3 Amp output
CTAP	Alarm panel on transfer to emergency w/silence button & light
ECM	Ethernet Converter Module
GFP	Ground fault protection, includes electronic trip, long time, short time and instantaneous trip. (40 - 800 Amps)
HT3	Heater and Thermostat
LCM	Lonworks communications interface card

M90 Series Power measurement meters (Not available in NEMA 4 enclosure)

M90	EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability.
M90A	Adds Pre-Wiring for Enervista™ Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications
M90B	Adds Pre-Wiring for Enervista™ Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications

MCM	Modbus RTU communications interface card
OCVR-1SG	Lockable see-through microprocessor cover for NEMA 3R or 12
OCVR-1SS	Lockable see-through microprocessor and meters cover for NEMA 3R or 12
STS	Shunt trip selector switch, Source 1 service entrance. Includes position indicating lamps and generator start inhibit circuit. Standard on NEMA 3R enclosures. 800 Amps and below.
T3/W3	Elevator Pre-Signal Auxiliary Contacts: Open 0 - 60 seconds prior to transfer to either direction, re-closes after transfer.
TVSSN	Integrated Transient Voltage Surge Suppressor, installed on Source 1 side 100kA per mode
TVSSL	Integrated Transient Voltage Surge Suppressor, installed on load side 100kA per mode
TVSSE	Integrated Transient Voltage Surge Suppressor, installed on Source 2 side 100kA per mode
UMD	Universal Motor Load Disconnect Circuit: Auxiliary Contact opens 0 - 5 minutes prior to transfer in either direction, re-closes after transfer. Can be configured by end user for Pre-transfer, Post-transfer, or both.

NOTE:

For additional options or other configurations, contact the MTU Onsite Energy factory.

Testing Standards	
UL, CSA, NEMA	UL 1008, UL 891, CSA 22.2, ICS10
Ringing wave immunity	IEEE 472 (ANSI C37.90A)
Conducted and radiated emissions	EN55022 Class B (CISPR 22) (Exceeds EN55011 & MILSTD 461 Class 3)
ESD immunity test	EN61000-4-2 Class B (Level 4)
Radiated RF, electromagnetic field immunity test	EN61000-4-3 (ENV50140) 10v/m
Electrical fast, transient/burst immunity test	EN61000-4-4
Surge immunity test	EN61000-4-5 IEEE C62.41 1.2 X 50µs, 0.5 to 4 kV
Conducted immunity test	EN61000-4-6 (ENV50141)
Voltage dips and interruption immunity	EN61000-4-11

AL / CU UL Listed Solderless Screw-Type Terminals for External Power Connections							
MTGSE & MTGDSE	Switch Size (Amps)	Source 1 Terminals (MCCB)			Source 2 & Load Terminals (ATS)		
		Cables per Pole	Range of Wire Sizes		Cables per Pole	Range of Wire Sizes	
	40, 80	1	1	#12 - 3/0	3 - 85 mm ²	1	#8 - 3/0
100 - 150	#8 - 350 MCM			8 - 177 mm ²	#6 - 250 MCM		13 - 127 mm ²
200	2/0 - 600 MCM or 8 - 500 mm ²			(1) 67 - 304 mm ² or 8 - 253 mm ²	#6 - 350 MCM		13 - 177 mm ²
225		1 or 2	(1) #4 - 600 MCM or (2) 1/0 - 250 MCM		(1) 21 - 304 mm ² or (2) 53 - 127 mm ²		
260							
400	3	3/0 - 500 MCM	85 - 253 mm ²	2	#2 - 600 MCM	34 - 304 mm ²	
600	4	250 - 500 MCM	127 - 253 mm ²	4			
800	4	#2 - 600 MCM	34 - 304 mm ²				8
1000							
1200							
1600	8	#2 - 600 MCM	34 - 304 mm ²	8			
2000							
2600							
3000							

NOTE: For ground bar and neutral bar cable size and quantity data, contact the MTU Onsite Energy factory.

Standard MX 150 Control Setting Ranges				
Control Function			Range	Factory Setting
MSTDG	Source 1 Line Sensing - Under-voltage	Dropout	75 - 98%	80%
		Pickup	85 - 100%	90%
	Source 2 Line Sensing - Under-voltage	Dropout	75 - 98%	80%
		Pickup	85 - 100%	90%
	Source 2 Line Sensing - Under-frequency	Dropout	88 - 98%	90%
		Pickup	90 - 100%	95%
	Time Delay - Engine Start	(Acc. P1)	0 - 10 seconds	3 seconds
	Time Delay - Engine Cool Down	(Acc. U)	0 - 60 minutes	5 minutes
	Time Delay - Transfer to Emergency (Acc. W)		0 - 5 minutes	1 second
	Time Delay - Retransfer to Normal	(Acc. T)	0 - 60 minutes	30 minutes
Time Delay - Motor Disconnect or Transfer Presignal	(Acc. UMD, or T3/W3)	0 - 60 seconds	20 seconds	
Delayed Transition Time Delays	(DT, DW)	0 - 10 minutes	5 seconds	
Event Exerciser	(CDT/P)	5 - 60 min. - 1,7,14 or 28 days load or no load	20 min. - 7 days no load	
MEXEG	Programmable Event Exerciser	(CDP)	365 day cycle, load or no load	0 min. - 7 days no load
	Voltage Imbalance	(VI)	5-20% nominal; 10-30 sec.	10% Fail, 8% Restore; 30 sec.
Options	Elevator Pre-Signal	(T3/W3)	0-60 seconds	20 seconds
	Sequential Motor Load Disconnect	(A62)	0-5 minutes	20 seconds
	Motor Load Disconnect	(UMD)	0-60 seconds	5 seconds

Dimensional and Weight Specifications

MTGSE & MTGDSE Dimensions									
Amp Rating	Poles	NEMA 1 Enclosure						Fig	App Notes
		H (in)	H (cm)	W (in)	W (cm)	D (in)	D (cm)		
40 - 260	2, 3, 4	48.2	122	36	91	15.9	40	A	1-4
400	2, 3, 4	48.2	122	36	91	15.9	40	A	1-4
600	2, 3, 4	75	191	39	99	20	51	A	1-4
800	2, 3, 4	90	229	51	129	20	51	A	1-4
1000 - 1200	3, 4	90	229	39	99	51	130	B	1-6
1600 - 2000	3, 4	90	229	39	99	51	130	B	1-6
2600 - 3000	3, 4	90	229	39	99	63	160	B	1-6
Amp Rating	Poles	NEMA 3R Enclosure						Fig	App Notes
		H (in)	H (cm)	W (in)	W (cm)	D (in)	D (cm)		
40 - 260	2, 3, 4	48.2	122	36	91	15.9	40	A	1-4
400	2, 3, 4	48.2	122	36	91	15.9	40	A	1-4
600	2, 3, 4	75	191	39	99	20	51	A	1-4
800	2, 3, 4	90	229	51	129	20	51	A	1-4
1000 - 1200	3, 4	90	229	40	101	57	145	C	1-6
1600 - 2000	3, 4	90	229	40	101	57	145	C	1-6
2600 - 3000	3, 4	90	229	40	101	69	175	C	1-6

MTGSE Model Weight(s)			
Amp Rating	Poles	Weight	
		NEMA 1	Lb (kg)
40, 80, 100	2, 3	183 (83)	193 (88)
150, 225, 260	4	187 (85)	197 (89)
400	2, 3	265 (120)	275 (125)
	4	289 (131)	299 (136)
600	2, 3	415 (188)	435 (197)
	4	444 (201)	464 (210)
800	2, 3	577 (262)	597 (271)
	4	662 (300)	682 (309)
1000, 1200	3	1690 (766)	1890 (857)
	4	1710 (775)	1910 (866)
1600, 2000	3	2355 (1067)	2555 (1159)
	4	2455 (1112)	2655 (1204)
2600, 3000	3	2475 (1121)	2675 (1213)
	4	2675 (1212)	2875 (1304)

Application Notes:

1. Metric dimensions (cm) and weights (kg) shown in parentheses adjacent to English measurements.
2. Allow a minimum of 3" additional depth for projection of handle, lights, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
5. Add 3" in height for lifting eyes.
6. Removable side covers permit mounting against wall.

Reference Figures

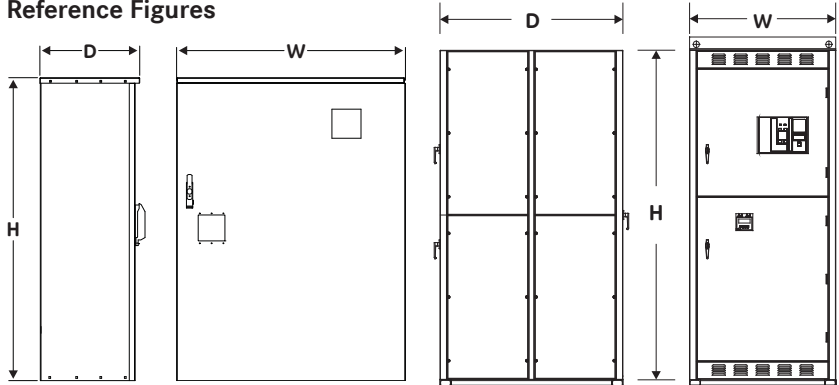


Figure A
40 - 800 Amp Transfer Switch
NEMA 1 & 3R

Figure B
1000 - 3000 Amp Transfer Switch
NEMA 1

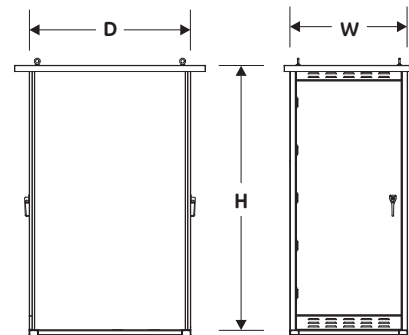


Figure C
1000 - 3000 Amp Transfer Switch
NEMA 3R

MTGDSE Model Weight(s)			
Amp Rating	Poles	Weight	
		NEMA 1	Lb (kg)
40, 80, 100	2, 3	272 (123)	282 (128)
150, 225, 260	4	296 (134)	306 (139)
400	2, 3	272 (123)	282 (128)
	4	296 (134)	306 (139)
600	2, 3	422 (191)	442 (200)
	4	451 (205)	471 (214)
800	2, 3	587 (266)	607 (275)
	4	672 (305)	692 (314)
1000, 1200	3	1700 (771)	1900 (862)
	4	1720 (780)	1920 (871)
1600, 2000	3	2365 (1073)	2565 (1163)
	4	2465 (1118)	2665 (1209)
2600, 3000	3	2485 (1127)	2685 (1218)
	4	2685 (1218)	2885 (1309)

Ordering Information



S E O
Standard (Open Transition Transfer Switch)

A O
MX150 Micro-processor Control Unit

O
Utility - Generator
M
Manual

D S E
Standard (Delayed Transition Transfer Switch)

0 0 4
40 amps

B
2 Poles

N O 1
Type 1 Enclosure

A B

M S T D G

0 0 8
80 amps

E
3 Poles

N 3 R
Type 3R Enclosure

M E X E G

0 1 0
100 amps

F
4 Poles

If required, choose additional accessories on page 4 for automatic transfer switches.

0 1 5
150 amps

0 2 0
200 amps

0 2 2
225 amps

0 2 6
260 amps

0 4 0
400 amps

0 6 0
600 amps

0 8 0
800 amps

1 0 0
1000 amps *

1 2 0
1200 amps *

1 6 0
1600 amps *

2 0 0
2000 amps *

2 6 0
2600 amps *

3 0 0
3000 amps *

* Available in 3 or 4 pole only

For manual transfer switches, this section will only read "MSTDG". If required, choose additional features specified on page 4.

Example

MTGSE0A0040E-N0140MSTDG

This model number string shows the correct format for a MTGSE Series Automatic Transfer Switch with an MX150 microprocessor control unit, Utility - Generator application, 400 amps, 3 pole, NEMA Type 1 enclosure, 120/208V 3f, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008 Withstand and Closing Ratings

Withstand Current Ratings per UL 1008			
MTGSE Switch Ratings (Amps)	Maximum Circuit Amps When Used With		
	Specific Coordinated Breaker Rating	Any Breaker Rating	Current Limiting Fuse
40, 80, 100 150, 200, 225	30,000	10,000	200,000
260	35,000	10,000	200,000
400	50,000	35,000	200,000
600	50,000	35,000	200,000
800	65,000	50,000	200,000
1000, 1200	85,000	50,000	200,000
1600, 2000	100,000	65,000	200,000
2600, 3000	100,000	100,000	200,000

Withstand Current Ratings per UL 1008			
MTGDSE Switch Ratings (Amps)	Maximum Circuit Amps When Used With		
	Specific Coordinated Breaker Rating	Any Breaker Rating	Current Limiting Fuse
40, 80, 100, 150 200, 225, 260 300, 400, 600	50,000	50,000	200,000
800	65,000	50,000	200,000
1000, 1200	85,000	50,000	200,000
1600, 2000	100,000	65,000	200,000
2600, 3000	100,000	100,000	200,000

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120 / 240	1	3 wire	60
2	2	110 / 220	1	3 wire	50
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	5	139 / 240	3	4 wire	60
4	0	120 / 208	3	4 wire	60
4	1	127 / 220	3	4 wire	60
4	2	127 / 220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254 / 440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347 / 600	3	4 wire	60
6	3	575	1	2 wire	60
7	0	277 / 480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266 / 460	3	4 wire	60
7	5	460	3	3 wire	60
8	2	380	1	2 wire	50
9	0	240 / 416	3	4 wire	60
9	1	220 / 380	3	4 wire	60
9	2	220 / 380	3	4 wire	50
9	3	240 / 416	3	4 wire	50
9	7	380	3	3 wire	60

NOTE: Will need to specify with order the operating voltage. Only the most common ones are shown here.



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MTS Series

Low-Voltage Automatic and Manual Transfer Switches





MTU Onsite Energy has partnered with GE Energy to offer the MTS Series of transfer switches that have become a hallmark of quality and performance. Reliability resulting from superior design and heavy duty construction has made the MTS the industry standard for critical installations. Our emphasis on research and development, design

improvements, materials, manufacturing methods, quality assurance and service yields products that have been proven in hundreds of thousands of applications. Subsequent to the first MTS units installed, our engineering staff has been dedicated to the improvement and expansion of our product line. Today, we offer a wide selection of transfer switch products worldwide.

- MTS Automatic Transfer Switches
40 - 4000 Amps
- MTSD Delayed Transition Transfer Switches
40 - 4000 Amps
- MTSCT Closed Transition Transfer Switches
100 - 4000 Amps
- MBTS Automatic Transition Bypass Switches
100 - 4000 Amps
- MBTSD Delayed Transition Bypass Switches
100 - 4000 Amps
- MBTSCT Closed Transition Bypass Switches
100 - 4000 Amps

All MTS products meet or exceed industry requirements allowing specification and installation confidence.

- UL 1008 listed through 480 VAC
- CSA C22.2 No. 178 listed through 600 VAC

- Codes and Standards
 - NFPA 70, 99, 101, 110
 - IEEE 446, 241, 602
 - NEC 517, 700, 701, 702
 - NEMA ICS-10
- Controls tested in accordance with:
 - IEEE 472 (ANSI C37.90A)
 - EN55022 Class B (CISPR 22)
(Exceeds EN55011 & MILSTD 461 Class 3)
 - EN61000-4-2 Class B (Level 4)
 - EN61000-4-3 (ENV50140) 10 V/M
 - EN61000-4-4
 - EN61000-4-5, IEEE C62.41
(1.2 X 50 μ s, 0.5 to 4 kV)
 - EN61000-4-6 (ENV50141)
 - EN61000-4-11
- Equipment (*Controls and Power Section*)
Seismic Test Qualified to:
 - IBC-2006
 - IEEE-693-2005
- Enclosures meet the requirements of:
 - UL 508, 50
 - ANSI C33.76
 - ICS 6
 - NEMA 250
- Quality System
 - ISO 9001 Registered

Specification Assistance

MTU Onsite Energy offers a complete range of product guide specifications to help you determine your needs.

For more information, please consult your local MTU Onsite Energy representative, our factory or our website at www.mtu-online.com.

MTU Onsite Energy MTS Series Automatic Transfer Switches

The MTU Onsite Energy MTS Series is the building block of our transfer switch product line. This ruggedly built power contactor family of switches has been specifically designed for transfer switch duty with dependability, versatility and user friendliness of prime concern.

MTS switches are available in open type construction for switchboard installation or NEMA enclosed to the customer's specifications. The power panel components, consisting of power switching contacts, drive mechanism and terminal lugs, are mounted on a specially formed panel. Logic devices including microprocessor control auxiliary time delays and special accessory equipment are assembled on the door for ease of maintenance and separation from the power section. They are connected with a numbered wiring harness equipped with a disconnect plug that allows isolation of the control panel for maintenance.

MTS Series Method of Operation

When Source 1 voltage fails or drops to a predetermined point (usually 80% of nominal), if required, a circuit is closed to start the engine generator set. When Source 2 reaches 90% of rated voltage and 95% of rated frequency, the drive solenoid is energized through the Source 2 coil control relay, causing the main contacts to disconnect the load from Source 1 and connect it to Source 2. After the drive solenoid has completed its electrical stroke and is seated, the Source 2 coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the Source 2 position.

When Source 1 voltage is restored to a predetermined point (usually 90% of nominal), the control voltage sensing energizes. The Source 1 side coil relay closes, and after the drive solenoid has completed its electrical stroke and is seated, the coil control relay opens to disconnect it. The transfer switch is now mechanically locked in the Source 1 position.

Drive Mechanism

All MTU Onsite Energy MTS switches employ the simple "over-center" principle to achieve a mechanically locked position in either Source 1 or Source 2 and MTU Onsite Energy's high speed drive assures contact transfer in 100ms or less. High contact pressure and positive mechanical lock allow for high withstand and closing ratings, far exceeding UL requirements. All MTS units are listed with UL umbrella (any) breaker, coordinated breaker and current limiting fuse ratings.

Neutral Switching

The MTU Onsite Energy MTS Series is available in true four pole designs for multi-source power systems that require neutral switching. The neutral contact is on the same shaft as the associated main contacts. This ensures positive operation, and avoids any possibility that the neutral contact will fail to open or close, as is possible when the neutral pole is an add-on accessory. The neutral contacts are identical to the main contacts, having the same current carrying and high withstand/closing ratings as the mains. They are designed to break last and make first to reduce the possibility of transients while switching the neutral.

Safe Manual Operation

The MTS manual operator consists of a large, easy-to-use handle that fits securely for manual operation during installation and maintenance or in an emergency.

The MTS may be provided with an operator inhibit switch to disconnect the electrical drive prior to maintenance. Fully enclosed wrap-around arc covers shield the main contacts and mechanical components, preventing operator exposure during manual operation.

Transferring Large Motor or Highly Inductive Loads

Some loads, especially large motors, receive severe mechanical stress if power is transferred out of phase while the motor is still rotating. Also, back EMF generated by a motor may result in excess currents that can blow fuses or trip circuit breakers. MTU Onsite Energy offers four solutions to these problems:

Universal Motor Disconnect (UMD):

This load control disconnects a large motor via its control circuit for an adjustable period of time prior to transfer in either direction. For switching multiple motors, MTU Onsite Energy's Accessory A62 disconnects the motors prior to transfer and brings them back on line sequentially.

Accessory R50: This is an in-phase monitor that compares the phase angle between both sources of power and prevents transfer until the two are approximately in phase

(within a self-adjusting range). MTU Onsite Energy's high speed transfer action, coupled with the MX series microprocessor control logic, ensure closures at or near zero degree phase difference.

Series MTSD: MTU Onsite Energy offers delayed transition switching on transfer switches rated 40 amperes and above - the MTU Onsite Energy MTSD Series. This programmed center-off position allows for the full decay of rotating motors or transformer fields. It can also be used for load shedding of selected circuits or other

applications which require a means to disconnect the load from either source. Major UPS system manufacturers recommend delayed transition switches for proper restart sequencing of their systems.

Series MTSC: MTU Onsite Energy's series of closed transition switches combine MTSD operation during a source failure with a highly engineered control system that allows momentary paralleling (100 MS) of two acceptable sources, thereby limiting the impact of transfer on the load.

Electrical Ratings

- Ratings 40 to 4000 amperes
- 2, 3 or 4 Poles
- Open type, NEMA 1, 3R, 4, 4X and 12
- Available to 600 VAC, 50 or 60 Hz
- Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
- UL 1008 listed at 480 VAC
- CSA C22.2 No. 178 certified at 600 VAC

Performance Features

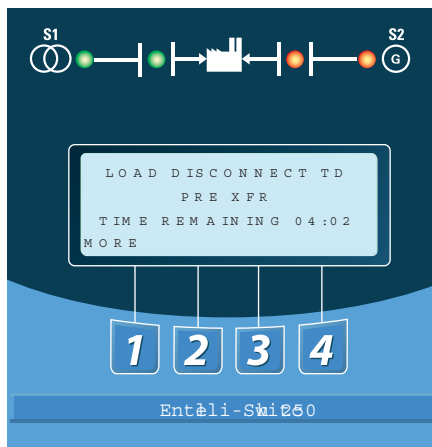
- Contact transfer speed less than 100 milliseconds
- High close-in and withstand capability
- Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
- Available in MTS (utility-generator), MTSU (utility-utility), MTSG (generator-generator) and MTSM (manual) configurations

Design and Construction Features

- Double throw, interlocked operation
- Electrically operated, mechanically held by a simple, over-center mechanism

- Segmented silver tungsten alloy contacts with separate arcing contacts on 225 amp and above
- Arc quenching grids, enclosed arc chambers, and wide contact air gap for superior source-to-source isolation on all units
- Control circuit disconnect plug and drive inhibit switch for safe maintenance
- Components accessible for inspection and maintenance without removal of the switch or power conductors
- Mechanical indicator and contact chamber cover designed for inspection, safety and position designation

MX250 Series Microprocessor Controller



Enhanced Display and Settings

LEDs are used in a recognizable line configuration for continuous monitoring of switch position. The LCD display shows source availability, exercise time delay operation and system source condition. A simplified adjustment is featured for voltage, frequency and time delay settings.

The control operates off a close differential 3-phase under-voltage sensing of Source 1, factory standard setting 90% pickup, 80% dropout; under-frequency sensing of Source 1 factory setting 95% pickup; 3-phase voltage and frequency sensing of Source 2, factory standard setting 90% pickup voltage, 95% pickup frequency. All factory settings are operator adjustable.

A test function is standard (fast test/load/no load) to simulate Source 1 failure - automatically bypassed should Source 2 fail.

More Enhanced Features

- Available in all transfer modes:
 - Open, Delayed & Bypass / Isolation
 - Closed (with newly integrated transition control)
- User-friendly programmable engine exerciser, used for the engine generator with or without load, at any interval in a one-year period
- Operating voltages available in a single controller for worldwide applications
- Real-time display of ATS status, including active timer(s)
- Multiple levels of user-defined password protection
- Serial communications allowing connectivity with other ATS's, paralleling switchgear, and SCADA systems
- Time-tested synchronous logic automatically measures phase angle and frequency allowing disturbance-free transfer
- Unsurpassed statistical ATS/System monitoring available in real-time
- T3/W3 elevator pre-signal. Automatically bypassed if the selected source fails, minimizing time an elevator is without power
- Universal Motor Disconnect (UMD) sends a pre-signal, post-signal or both to any motor control center. Not bypassed in an outage, the UMD ensures safety in the event of a single phase loss
- Voltage unbalance detection standard
- Extensive Warranty

Performance Features

- UL and CSA listed
- Ringing wave immunity per IEEE 472 (ANSI C37.90A)
- Conducted and Radiated Emissions per EN55022 Class B (CISPR 11) (Exceeds EN55011 & MILSTD 461 Class 3)
- ESD Immunity test per EN61000-4-2 Class B (Level 4)
- Radiated RF, electromagnetic field immunity test per EN61000-4-3 (ENV50140) 10v/m
- Electrical fast transient / burst immunity test for EN61000-4-4
- Surge immunity test per EN61000-4-5 (IEECC62.41) (1.2 x 50µs, 0.5 to 4 kV)
- Conducted immunity test per EN61000-4-6 (ENV50141)
- Voltage dips and interruption immunity EN61000-4-11

Technical Benefits

- Separate line voltage components for controller isolation
- Inputs optoisolated for high electrical immunity to transients and noise
- Built-in electrical operator protection
- Simplified maintenance - major components are easily replaceable
- Close differential under-voltage sensing of the normal source
- Voltage and frequency sensing of the emergency source (all settings are adjustable)



MTU Onsite Energy MTS Series Accessory Definitions

6P

Microprocessor activated test switch (Momentary)

6A

Hardwired test switch (Maintained)

6AP

Microprocessor activated test switch (Maintained)

6B

Hardwired test switch (Maintained Auto - Momentary Test) Key operated

6C

Hardwired test switch (Maintained Auto - Maintained Test) Key operated

A1

Auxiliary Contact S.P.D.T. - Normal (Source 1) Failure

A1E

Auxiliary Contact S.P.D.T. - Emergency (Source 2) Failure

A3

Auxiliary Contact - closed in emergency (Source 2) Additional available (10 max.) on MTS Series and need to be specified

A4

Auxiliary Contact - closed in normal (Source 1) Additional available (10 max.) on MTS Series and need to be specified

A62

Motor disconnect and staged restart (1 contact)

AB3

Auxiliary Contact - closed in bypass emergency (Source 2) (S.P.D.T.) (Standard up to 400A) Additional available (10 max.) on MBTS Series and need to be specified

AB4

Auxiliary Contact - closed in bypass normal (Source 1) (S.P.D.T.) (Standard up to 400A) Additional available (10 max.) on MBTS Series and need to be specified

CALIBRATE

Microprocessor activated calibration feature

CDP

Programmable exerciser daily, 7/14/28/365 days user-selectable, with or without load

CDT

Exerciser no load timer

CTAP

Chicago transfer alarm panel mounted in door of enclosure. Includes 3 aux. contacts and fuse.

DS

Disconnect Switch. Disconnects source voltage to transfer power panel.

DT (Delayed Transition Only)

Time Delay from Neutral Switch position to Source 1 on retransfer

DW (Delayed Transition Only)

Time Delay from Neutral Switch position to Source 2 on retransfer

E

Engine Start Relay

ECM

Ethernet Communication Adapter. Requires mcm (Modbus) Accessory.

EI / P

Event log of last 16 events

F

Fan contact, closed when engine runs.

MTU Onsite Energy MTS Series Accessory Group Matrix

Accessories	Group Packages					
	MSTD	MEXE	MCON	MSEN	MSPE	MPSG
6P	●	●	●	●	●	●
A1	○	●	●	●	●	●
A1E	○	●	●	●	●	●
A3	●	②	②	②	②	③
A4	●	②	②	②	②	③
Calibrate	●	●	●	●	●	●
CDT	●	●	●	●	●	●
CDP	●	●	●	●	●	●
**DS	●	●	●	●	●	●
*DT	●	●	●	●	●	●
*DW	●	●	●	●	●	●
E	●	●	●	●	●	●
EL/P	●	●	●	●	●	●
K/P	●	●	●	●	●	●
L1	●	●	●	●	●	●
L2	●	●	●	●	●	●
L3	●	●	●	●	●	●
L4	●	●	●	●	●	●
*LNP	●	●	●	●	●	●
P1	●	●	●	●	●	●
O2	○	●	●	●	●	●
O3	○	○	○	○	○	○
O7	○	○	○	○	○	○
R1-1	○	○	○	○	○	○
R1-3	○	○	○	○	○	○
R15	○	○	○	○	○	○
*R15D	○	○	○	○	○	○
R16	○	○	○	○	○	○
R50	●	●	●	●	●	●
S5P	○	○	○	○	○	○
S12P	○	○	○	○	○	○
S13P	○	○	○	○	○	○
T	●	●	●	●	●	●
T3/W3	②	②	②	②	②	②
U	●	●	●	●	●	●
UMD	②	②	②	②	②	②
VI	●	●	●	●	●	●
W	●	●	●	●	●	●
YEN	●	●	●	●	●	●

- Standard Accessory included in the group package.
- Optional Accessory not included but can be added to group package.
- Optional Accessory. Can not be used with accessory having the same symbol.
- N/A
- ② Denotes an Accessory with 2 circuits as a standard.
- ③ Denotes an Accessory with 3 circuits as a standard.
- * Delayed Transition Units Only.
- ** Optional for 40-400 Amp

MTU Onsite Energy MTS Series Accessory Definitions (cont.)

HT(1)(2)

Heater and Thermostat 208/240V (1) 380/600V (2) mounted and interwired in enclosure. (Requires larger enclosure for 40-200A.)

K

Frequency Meter (Analog) - Door mounted

K / P

Frequency Indication on the controller

LNP

Center-off position LCD-Indicator

L1

LED light indicates Switch in Source 2 position

L2

LED light indicates Switch in Source 1 position

L3

LED light indicates Source 1 available

L4

LED light indicates Source 2 available

MTU Onsite Energy MTS Series Accessory

Definitions *(cont.)*

LCM

LonWorks Communication Module

M1

Single Phase Amp Meter (Analog)

M2

Three Phase Amp Meter (Analog)

M90

EPM2000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency). 3 Line LED Display. 50/60 Hz Universal Operation. 1 or 3 phase. Standard Modbus RTU RS485 communications capability. 40 - 1200 Amps.

M90A

Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Modbus RS485 Serial Communications

M90B

Adds Pre-Wiring for Enervista Viewpoint Monitoring of M90 Accessory & ATS Status using Ethernet TCP/IP Communications

M91

EPM6000 True RMS Digital Meter with display (Amps, Volts, Power, Energy, Power Factor and Frequency, THD). Certified energy and demand metering. Meets ANSI C12.20 and IEC 687 Accuracy Classes. Front IrDA Port Laptop Connection. Standard Modbus RTU RS485 or DNP 3.0 communications capability.

M91A

Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Modbus RS485 Serial Communications

M91B

Adds Pre-Wiring for Enervista Viewpoint Monitoring of M91 Accessory & ATS Status using Ethernet TCP/IP Communications

MCM

Modbus RTU Communication Module

N1

Running Time Indicator - Door mounted

N2

Operation Counter - Door Mounted

P1

Engine Start Timer (adjustable to 6 sec.)

P2

Engine Start Timer (adjustable to 300 sec.)

Q2

Peak shave/remote load test/area protection - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)

Q3

Inhibit transfer to emergency (Source 2) (load add relay) - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)

Q7

Inhibit transfer to normal (Source 1) - Relay (S.P.D.T.) (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)

R1-1 / R1-3

Over Voltage sensing for normal (Source 1) single (R1-1) or three (R1-3) phase

R15/R15d

Load Shed. Should Source 2 become overloaded, a signal can be given to switch to the Neutral position. Available only on 225A and above.

R16

Phase rotation sensing of Normal (Source 1) and Emergency (Source 2)

R26 / R26D

Interruptable Power Rate Provisions. Allow transfer out of Source 1 position to Mid position or dead Source 2. Alarm and Pre-Signal circuit included. (Need to specify voltage - 120 VAC, 24 VAC, 24 VDC - 120V default standard)

R50

In Phase monitor between Normal (Source 1) and Emergency (Source 2) to allow transfer

S5P

Microprocessor activated auto/manual retransfer selector switch for transferring to Normal (Source 1) (includes microprocessor activated YN accessory)

S12P

Microprocessor activated auto/manual retransfer selector switch for transferring to Normal (Source 1) (includes microprocessor activated YN & YE accessory)

S13P

Microprocessor activated commit/no commit on transferring to Emergency (Source 2) (with enable/disable settings)

S14

Keyed selector switch for retransfer to normal-test-auto

SW1

Auto/Off/Start Engine control selector - Door mounted (keyed or non-keyed operation available)

SW2

Auto / Off Engine control selector - Door mounted (keyed or non-keyed operation available)

SW3

Source Priority Selector Switch - Door mounted

Allows selection of Source 1 or Source 2 to be the Prime Source. Transfer Switch will transfer to selected Prime Source if that Source is available. (keyed or non-keyed operation available)

T

Retransfer to Normal (Source 1) adjustable time delay

T3 / W3

Pre-signal contact on transfer to Normal (Source 1) or Emergency (Source 2) during test

U

Engine stop /cool adjustable cool down timer

UMD

Pre and post transfer output adjustable time range. Functions in both directions. Includes 2 circuits. (Additional circuits available).

VI

Voltage imbalance between phases (3 Phase only)

W

Adjustable time delay on transfer to Emergency (Source 2)

YEN

Bypass transfer timers function (soft key switch in microprocessor)

MTU Onsite Energy MTS Series Dimensional Specifications / Power Connection Terminals

MTS Model, Dimensions and Weights								
Ampere Rating	Poles	NEMA 1			Reference Figure	Weight		Application Notes
		Height (A)	Width (B)	Depth (C)		Open Type	NEMA 1	
40, 80, 100, 150	2, 3	24 (61)	18 (46)	11 (28)	A	21 (10)	57 (26)	1 - 7, 12-14
	4						60 (27)	
225, 260, 400	3	46 (117)	24 (61)	14 (36)	B	125 (57)	220 (100)	1 - 7, 12-14
	4					146 (66)	241 (109)	
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	165 (75)	380 (172)	1 - 8, 12-14
800, 1000, 1200	4					185 (84)	430 (195)	
	2, 3					190 (86)	455 (206)	1 - 8, 12-13
4	210 (95)					540 (245)		
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	345 (156)	1010 (458)	1 - 13
3000	4					450 (204)	1160 (526)	
	3					465 (211)	1130 (513)	
4000	4					670 (304)	1395 (633)	
4000	3	90 (229)	46.5 (118)	60 (152)	770 (349)	1595 (723)		
	4				1025 (465)	1850 (839)		

Application Notes:

- Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
- Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
- All dimensions and weights are approximate and subject to change without notice.
- Special enclosures (NEMA 3R, 4, 12, etc.) dimensions and layout may differ. Consult the ge factory for details.
- Normal and emergency may be ordered inverted on any switch. The load may be inverted 600 - 1200 amps. Consult the MTU Onsite Energy factory for details.
- Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.
- Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
- Add 4" in height for removable lifting lugs.
- Lug adapters for 3000 - 4000 amp limits may be staggered length for ease of entrance. Consult the MTU Onsite Energy factory for details.
- Ventilation louvers on both sides and rear of enclosure. Louvers must be clear for airflow with standard cable connections.
- A MTS 40 - 150A, when ordered with the following options, will require a larger enclosure: A62(T), Digital Meter, HT, HH, K, LDS, L11, N1, N2, OCVR-1SG, OCVR-1SS, P2, Q2M, Q3M, Q7M, R15, R26(D). R15 is not available on the 40 - 150A ZTS. You must upsize to the 225A in order to have the R15 option. Please contact the ge factory for dimensions.
- For Delayed and Closed Transition dimensions and weights, refer to MTU Onsite Energy Publication PB-5067 and PB-5069.
- For Bypass/Isolation dimensions and weights, refer to MTU Onsite Energy Publication PB-5068.
- A MTS, when ordered with compression lugs suitable for use with copper cables, will require a larger enclosure. For 40-225A, the enclosure is 46" x 24" x 14" (HxWxD). For 260 - 400A, the enclosure is 66" x 24" x 19.75" (HxWxD). For 600A and MTSCT 100 - 400A models only, the enclosure is 74" x 40" x 19.75" (HxWxD). For certified drawings, please contact the MTU Onsite Energy factory.



Figure A

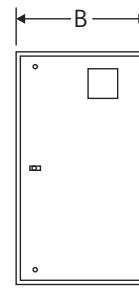


Figure B

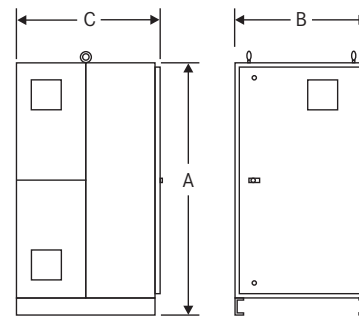


Figure C

AL-CU UL Listed Solderless Screw-Type Terminals for External Power Connections					
Switch Size Amps	Normal, Emergency & Load Terminals		Switch Size Amps	Normal, Emergency & Load Terminals	
	Cables/Pole	Wire Ranges		Cables/Pole	Wire Ranges
40 - 80	1	#8 to 3/0	600	2	#2 to 600 MCM
100, 150	1	#6 to 250 MCM	800, 1000, 1200	4	#2 to 600 MCM
225	1	#4 to 600 MCM	1600, 2000, 3000, 4000	*	
260	1	#4 to 600 MCM			
400	1	#4 to 600 MCM			

NOTES:

- ★ Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. Contact the MTU Onsite Energy factory for more details.
- Special terminal lugs and neutral bars are available at additional cost. Contact factory and advise cable sizes and number of conductors per pole.
 - Fully rated neutral provided on 3 phase, 4 wire system.
 - Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.

MTU Onsite Energy MTS Series Ordering Information

MODEL/TYPE	CONTROL PANEL	APPLICATION	AMPERE SIZE	SWITCHED POLES	ENCLOSURE TYPE	OPERATIONAL VOLTAGE	ACCESSORIES
M T S O O O	B O	O	0 0 4	B	0 1	A B	M S T D
Standard (Open Transition)	Entelli-Switch 250 Microprocessor Control Unit	Utility - Generator	40 amps	2 Poles	Type 1 Enclosure	Consult Table Below	M E X E
M T S D O O		U	0 0 8	E	1 2		M C O N
Delayed Transition		Utility - Utility	80 amps	3 Poles	Type 12 Enclosure		M S E N
M T S C T O		M	0 1 0	F	3 R		M S P E
Closed Transition		Manual	100 amps	4 Poles	Type 3R Enclosure		M P S G
M B T S O O		G	0 1 5		4 0		M A N O
Standard (Open Transition) w/Bypass		Gen to Gen	150 amps		Type 4 Enclosure		Then choose additional accessories
M B T S D O			0 2 2		4 X		
Delayed Transition w/Bypass			225 amps		Type 4X Enclosure		
M B T S C T			0 2 6		0 0		
Closed Transition w/Bypass			260 amps		Open Style Unit		

Switch Types

- Standard:** Unless otherwise noted, the standard switch with quick transfer will be supplied.
- Delayed Transition:** When ordered as the MTSD, the delayed transition switch offers time delay during transfer from one position to the other. This is primarily for transfer of large motor or inductive loads.
- Closed Transition:** When ordered as the MTSCT, the closed transition switch offers two basic modes of operation. During a failure of one source or an out of specification condition, the MTSCT Model operates as a standard delayed transition switch (MTSD Model). This sequence allows clear separation of an unreliable source from an available one.
- Bypass:** When ordered as the MBTS, the bypass transition switch offers a draw-out mechanism, with electrical and mechanical interlocks for secure removal after load bypass. In this way the transfer switch and/or the control panel may be tested, isolated and removed for maintenance without load interruption.

0 4 0	400 amps
0 6 0	600 amps
0 8 0	800 amps
1 0 0	1000 amps
1 2 0	1200 amps
1 6 0	1600 amps
2 0 0	2000 amps
2 6 0 *	2600 amps
3 0 0	3000 amps
4 0 0	4000 amps

Example

MTSCT0B00040F-ZEC01ZVC40MSTD

This number string shows the correct format for a MTS Model Automatic Transfer Switch with closed transition, an Entelli-Switch 250 microprocessor control unit, Utility - Generator, 400 amps, 4 pole, NEMA Type 1 enclosure, 120/208V 3f, 4 wire, 60 Hz system with the standard group of accessories.

UL 1008

Withstand and Closing Ratings

Please refer to MTU Onsite Energy Publication TB-1102

* Available only on Bypass configuration

A	B	Voltage	Phase	Config.	Hz
1	0	120	1	2 wire	60
2	0	120/240	1	3 wire	60
2	2	110/220	1	3 wire	50
3	0	240	3	3 wire	60
3	1	208	3	3 wire	60
3	2	220	3	3 wire	50
3	5	139/240	3	4 wire	60
4	0	120/208	3	4 wire	60
4	1	127/220	3	4 wire	60
4	2	127/220	3	4 wire	50
5	0	480	3	3 wire	60
5	1	440	3	3 wire	60
5	2	440	3	3 wire	50
5	5	460	1	3 wire	50
5	7	480	1	2 wire	60
5	8	254/440	3	4 wire	60
6	0	575	3	3 wire	60
6	1	347/600	3	4 wire	60
6	3	575	1	2 wire	60
7	0	277/480	3	4 wire	60
7	1	277	1	2 wire	60
7	4	266/460	3	4 wire	60
7	5	460	3	3 wire	60
8	2	380	1	2 wire	50
9	0	240/416	3	4 wire	60
9	1	220/380	3	4 wire	60
9	2	220/380	3	4 wire	50
9	3	240/416	3	4 wire	50
9	7	380	3	3 wire	60

Note: Operating voltage must be specified at time of order. Only the most common voltages are shown above.



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MTSCT

Closed Transition Transfer Switches



Introduction

An automatic transfer switch is the single vital link between utility and alternate power supplies. Yet it is the very operation and testing and retransfer back to normal that may be a cause of concern for many users. Loads such as electronic equipment, HID lighting, motor starters, etc., are sensitive to even the 30 -100 millisecond outage experienced during a typical transfer switch operation. Therefore, testing and use of the standby system is not optimized and necessary

system checks are not performed because of concerns about the effects of transfer outages.

In addition to these applications, opportunities for peak shaving and utility incentive rates may be passed over because of the inability to accept the short power interruptions inflicted during operation. In response to the needs of these installations, MTU Onsite Energy offers the MTSCT Closed Transition Transfer Switch and MBTSCT Closed Transition Transfer/Bypass Switch.

Features and Benefits

Closed transition switches utilize the proven switching technology of the MTU Onsite Energy MTS/MTSD Series of transfer switches combined with controls developed during MTU Onsite Energy's years of experience in the manufacture of synchronizing switchgear. They provide the capability to transfer in a closed transition mode when both sources are within preset parameters. Utilizing MTU Onsite Energy's high speed drive system, the overlap of the normal and alternate sources is less than 100 milliseconds. When one source is not within specified limits, such as during a power failure, the MTU Onsite Energy MTSCT operates in a delayed transition mode.

Description and Operation

Closed transition switches have two basic modes of operation. During a failure of one source or an out of specification condition, the MTU Onsite Energy MTSCT Model operates as a delayed transition switch (MTSD Model). This sequence allows clear separation of an unreliable source from an available one.

Closed transition operation takes place when both sources are within preset voltage and frequency parameters and the phase angle differential is less than five degrees. The closed transition sequence may be initiated by the test switch, a load exerciser clock, peak shaving controls or special utility incentive rate input signals.

Application Information

- Closed transition switches require a momentary (less than 100 ms) paralleling of Source 2 (emergency) with Source 1 (normal). This usually requires the owner to obtain approval of the installation with the local utility.
- The purpose of a closed transition switch is to prevent the momentary outages that occur during transfer of a standard or delayed unit. This technology is not normally a substitute for a UPS system as it does not provide stored energy capability but rather acts in a complementary fashion.
- System application requirements: Source 2 (generator set) must be provided with an isochronous governor stable at a frequency differential of not more than 60 Hz +/- 0.2 Hz.

A 24VDC shunt trip circuit is strongly suggested on one of the feeder breakers, normally the Source 2 (generator) feeder. Power for this trip circuit and alarm system backup must be supplied from the engine starting batteries or an equivalent source.

MTSCT Model, Dimensions and Weights								
Ampere Rating	Poles	NEMA 1			Ref. Figure	Weight		Application Notes
		Height (A)	Width (B)	Depth (C)		Open Type	NEMA 1	
100, 150 225, 260, 400	3	66 (168)	24 (61)	20 (50)	A	125 (57)	220 (100)	1 - 8
	4					146 (66)	241 (109)	
600	2, 3	74 (188)	40 (102)	19.5 (50)	A	185 (84)	400 (181)	
	4					205 (93)	450 (204)	
800, 1000 1200	2, 3	90 (229)	35.5 (90)	48 (122)	B	210 (95)	475 (215)	
	4					230 (104)	560 (254)	
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	B	365 (166)	1030 (467)	
	4					470 (204)	1190 (540)	
3000	3	90 (229)	46.5 (118)	60 (152)	B	485 (220)	1150 (522)	
	4					690 (313)	1415 (642)	
4000	3	90 (229)	46.5 (118)	60 (152)	B	820 (372)	1635 (742)	
	4					1045 (474)	1870 (848)	

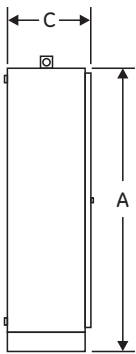


Figure A

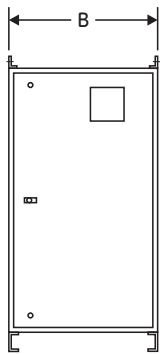


Figure B

APPLICATION NOTES:

1. Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
2. Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
3. All dimensions and weights are approximate and subject to change without notice.
4. Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the MTU Onsite Energy factory for details.
5. Normal and emergency may be ordered inverted on any switch. The load may be inverted 600 - 1200 amps. Consult the factory for details.
6. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.
7. Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
8. Add 4" in height for removable lifting lugs.
9. 4000 amp depth dimension shown is standard. Depending on your cable/conduit requirements, you may desire a deeper enclosure. Consult the MTU Onsite Energy factory for further details.
10. Lug adapters for 3000 - 4000 amp limits may be staggered length for ease of entrance. Consult the MTU Onsite Energy factory for details.
11. Ventilation louvers on both sides of enclosure at 3000 and 4000 amps. One must be clear for airflow with standard cable connections.

NOTES:

* Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. Contact MTU Onsite Energy factory for more details.

1. Special terminal lugs and neutral bars are available at additional cost. Contact the MTU Onsite Energy factory and advise cable sizes and number of conductors per pole.
2. Fully rated solid neutral (3x standard normal power connection) provided when required by system voltage.
3. Normal and emergency may be ordered inverted on any switch. Load may be inverted 600 - 1200 amps. Consult the MTU Onsite Energy factory for details.
4. Lug adapters for 3000 - 4000 amp units may be staggered length for ease of entrance. Consult the MTU Onsite Energy factory for details.
5. Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.

AL-CU UL Listed Solderless Screw-Type Terminals for External Power Connections					
Switch Size Amps	Normal, Emergency & Load Terminals		Switch Size Amps	Normal, Emergency & Load Terminals	
	Cables/Pole	Wire Ranges		Cables/Pole	Wire Ranges
100-150	1	#4 to 600 MCM	800 / 1000 / 1200	4	#2 to 600 MCM
225	1	#4 to 600 MCM	1600	★	
260	1	#4 to 600 MCM	2000		
400	1	#4 to 600 MCM	3000		
600	2	#2 to 600 MCM	4000		

Electrical Ratings

- Ratings 100 to 4000 amperes
- 2, 3 or 4 Poles
- Open type, NEMA 1, 3R, 4, 4X and 12
- Available in Transfer Switch (MTSCT) or Transfer / Bypass Switch (Mbtstct) styles
- Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
- UL 1008 listed at 480 VAC
- CSA certified at 600 VAC

Performance Features

- Incorporates the applicable features of the MTS and MBTS Series
- Source parallel time of less than 100 milliseconds
- Closed transition operation (no power interruption) during transfer and retransfer when sources are within specified parameters
- Open transition transfer operation is initiated upon a source failure
- Available in MTSCT (utility-generator), MTSCTU (utility-utility) and MTSCTM (manual) configurations

Design and Construction Features

- Electrically operated, mechanically held
- Segmented silver tungsten alloy contacts with separate arcing contacts on all sizes
- Arc quenching grids, enclosed arc chambers, and wide contact air gap
- Components accessible for inspection and maintenance without removal of the switch or the power conductors
- Standard annunciation and operational selection package for user interface
- Active control of the generator governor not required, but is available as an option



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MTSD

Delayed Transition Transfer Switches



Introduction

The MTU Onsite Energy MTSD provides an adjustable time delay after the opening of the closed contacts and before the closing of the open contacts for transferring large motor and/or transformer and UPS loads. This delayed transition time allows for motors to coast down and transformer fields to decay, thus allowing inductive loads to be re-energized after transfer with only normal inrush starting currents. The delayed transition design

is an effective method of handling these applications and can be utilized as an alternative to a standard transfer switch equipped with an in-phase monitor.

The delayed transition transfer switch is ideally suited for pumping stations, sewage treatment plants, hospital x-ray equipment, or wherever the bulk of the load being controlled consists of large motors and/or transformers. Major UPS manufacturers strongly recommend the use of delayed transition type transfer switches to ensure proper operation of their rectifier circuit and battery system. The MTU Onsite Energy MTSD allows a UPS system sufficient delay to recognize a power failure and transfer to batteries, acknowledge the return of power and allow the rectifier to walk-on to the new source, reducing any transfer anomalies.

One solution to this issue is to introduce a delay in the transition between two live sources. MTU Onsite Energy's MTSD Delayed Transition Transfer Switches have been designed expressly for this purpose.

Features and Benefits

The advantages of using the MTU Onsite Energy MTSD when transferring large motor and/or transformer loads are:

- Consistent operation under all conditions, including manual (pushbutton) operation
- Operation is totally independent of the synchronism of the power sources, eliminating the need for in-phase monitors or extensive motor disconnect control wiring between the transfer switch and motor control centers
- The delayed transition function adapts itself for use in multiple generator systems and paralleling systems to permit load shedding by switching the main contacts to a center-off or disconnected position
- Allows UPS systems to function properly while switching between line input sources

Except for the delayed transition period, the performance, operating capabilities, ratings, UL listings, withstand current values and available options are identical to those of MTU Onsite Energy's MTS Series Automatic Transfer Switches.

The MTU Onsite Energy MTSD incorporates all of the important features of the standard MTU Onsite Energy MTS Series switches. In addition, its unique design incorporates features oriented toward its specific operation.

Description and Operation

The operation of the MTU Onsite Energy MTSD Delayed Transition Transfer Switch is identical to MTU Onsite Energy's MTS Model with the exception of the drive mechanism and delayed transition period.

Upon failure or reduction of the normal source, and the availability of Source 2 (emergency), the drive solenoid is energized and pulls the main contacts out of the Source 1 (normal) position and locks them mechanically in the open position. An adjustable time delay is then energized. After the preset time has elapsed, the drive solenoid is energized and pulls the main contacts out of the open position and locks them mechanically in the Source 2 (emergency) closed position. Source 2 (emergency) is now supplying the load.

When the voltage sensing detects the restoration of Source 1 (normal) for a predetermined time period, the drive solenoid is energized and pulls the main contacts from the Source 2 (emergency) position and locks them mechanically in the open position. After the preset time delay has elapsed, the drive solenoid is energized and pulls the main contacts out of the open position and locks them mechanically in the Source 1 (normal) closed position. Source 1 (normal) is now supplying the load.

All voltage and frequency sensing controls, disconnect plug, test switch, time delays and other accessories supplied on the MTU Onsite Energy MTS Series are also supplied on the MTU Onsite Energy MTSD.

MTSD Model, Dimensions and Weights												
Ampere Rating	Poles	NEMA 1			Reference Figure	Weight		Application Notes				
		Height (A)	Width (B)	Depth (C)		Open Type	NEMA 1					
40, 80 100, 150	2, 3	46 (117)	24 (61)	14 (36)	A	80 (36)	200 (91)	1 - 7, 11-13				
	4					85 (39)	205 (93)					
225	2, 3					46 (117)	24 (61)	14 (36)	A	80 (36)	200 (91)	1 - 7, 12-13
260, 400	4									85 (39)	205 (93)	
600	2, 3	74 (188)	40 (102)	19.5 (50)	B	185 (84)	400 (181)	1 - 8, 12-13				
	4					205 (93)	450 (204)					
800, 1000 1200	2, 3					74 (188)	40 (102)		19.5 (50)	B	210 (95)	475 (215)
	4										230 (104)	560 (254)
1600, 2000	3	90 (229)	35.5 (90)	48 (122)	C	365 (166)	1030 (467)	1 - 10, 12-13				
	4					470 (204)	1190 (540)					
3000	3					90 (229)	35.5 (90)		48 (122)	C	485 (220)	1150 (522)
	4										690 (313)	1415 (642)
4000	3	90 (229)	46.5 (118)	60 (152)	C	820 (372)	1635 (742)					
	4					1045 (474)	1870 (848)					

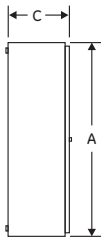


Figure A

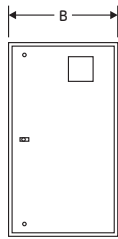


Figure B

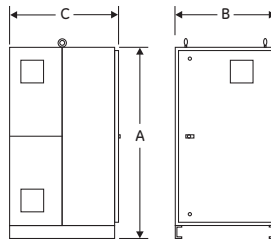
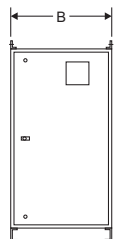


Figure C

APPLICATION NOTES:

- Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
- Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
- All dimensions and weights are approximate and subject to change without notice.
- Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the MTU Onsite Energy factory for details.
- Normal and emergency may be ordered inverted on any switch. The load may be inverted 600 - 1200 amps. Consult the factory for details.
- Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.
- Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
- Add 4" in height for removable lifting lugs.
- Lug adapters for 3000 - 4000 amp limits may be staggered length for ease of entrance. Consult the MTU Onsite Energy factory for further details.
- Ventilation louvers on both sides and rear of enclosure. One set of louvers must be clear for airflow with standard cable connections.
- Ventilation louvers on both sides of enclosure at 3000 and 4000 amps. One must be clear for airflow with standard cable connections.
- For Closed Transition dimensions and weights, refer to MTU Onsite Energy Publication PB-5069.
- For Bypass/Isolation dimensions and weights, refer to MTU Onsite Energy Publication PB-5068.

AL-CU UL Listed Solderless Screw-Type Terminals for External Power Connections					
Switch Size Amps	Normal, Emergency & Load Terminals		Switch Size Amps	Normal, Emergency & Load Terminals	
	Cables/Pole	Wire Ranges		Cables/Pole	Wire Ranges
40-80	1	#8 to 3/0	800 / 1000 / 1200	4	#2 to 600 MCM
100-225	1	#4 to 600 MCM	1600	★	
260	1	#4 to 600 MCM	2000		
400	1	#4 to 600 MCM	3000		
600	2	#2 to 600 MCM	4000		

NOTES:

- * Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available as an accessory. Contact MTU Onsite Energy factory for more details.
- Special terminal lugs and neutral bars are available at additional cost. Contact the MTU Onsite Energy factory and advise cable sizes and number of conductors per pole.
 - Fully rated neutral provided on 3 phase, 4 wire system.
 - Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.

Electrical Ratings

- Ratings 100 to 4000 amperes
- 2, 3 or 4 Poles
- Open type, NEMA 1, 3r, 4, 4X and 12
- Available to 600 vac, 50 or 60 Hz
- Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
- UL 1008 listed at 480 VAC
- CSA c22.2 No. 178 certified at 600 VAC

Performance Features

- Adjustable center-off time to meet specific installation requirements
- High close-in and withstand capability
- Temperature rise test per UL 1008 conducted after overload and endurance tests - exceeds UL requirements
- Available in MTSD (utility-generator), MTSDU (utility-utility), MTSDG (generator-generator) and MTSDM (manual) configurations

Design and Construction Features

- Mechanically interlocked center-off position for load back EMF decay

- Electrically operated, mechanically held by a simple, over-center mechanism
- Segmented silver tungsten alloy contacts with separate arcing contacts on 225 amp and above
- Arc quenching grids, enclosed arc chambers, and wide contact air gap for superior source-to-source isolation on all units
- Control circuit disconnect plug and drive inhibit switch for safe maintenance
- Components accessible for inspection and maintenance without removal of the switch or the power conductors
- Mechanical indicator and contact chamber cover designed for inspection, safety and position designation



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MBTS / MBTSD / MBTSCT

Transfer / Bypass-Isolation Transfer Switches



Introduction

MTU Onsite Energy's MBTS Series Bypass-Isolation Transfer Switch consists of two major modules – the automatic transfer and the bypass-isolation switches. The automatic transfer switch module is MTU Onsite Energy's proven MTS Series, built in MTS, MTSD or MTSCT configuration and constructed for rugged, reliable operation. The same components – heavy-duty silver alloy contacts, rugged drive mechanism and silver plated bus bar inter-connections are used throughout the MBTS Series.

Features and Benefits

MTU Onsite Energy's design requires no additional load break contacts which cause load interruption during bypass-isolation functions. The bypass-isolation switch contacts are out of the system current path except during actual bypass operation. Therefore, they are not constantly exposed to the destructive effects of potential fault currents. The Source 1 (normal), Source 2 (emergency) and load are connected between the automatic transfer switch and the bypass-isolation switch through solidly braced isolating contacts that are open when the automatic transfer switch is isolated. All current carrying components provide high withstand current ratings in excess of those specified in UL 1008 standards.

Description and Operation

The bypass section is a MTS switch provided with a quick make/quick break manual load transfer handle and ge's control/interlock system consisting of both mechanical and electrical interlocks. The bypass switch is equipped with normal failure sensing and a time delay to start the engine automatically if the ats has been removed for service. The modules are mounted in a compact enclosure and completely interconnected requiring only Source 1 (normal), Source 2 (emergency) and load cable connections. Once installed, no cables need to be removed to isolate the transfer switch module for maintenance or inspection. The automatic transfer switch may be withdrawn for testing or maintenance without disturbing the load. The transfer switch module has three positions:

1. Automatic/Connected: The transfer switch is carrying the load, and the bypass switch is in the open position. This is the normal operating position.
2. Test: The bypass switch is closed and feeding the load. The transfer switch has control power and may be operated for test purposes via the test switch on the enclosure door. The load is not affected during testing.
3. Isolate: The transfer switch is withdrawn from all power and ready for maintenance. The load is served by the bypass switch.

The Automatic Transfer Switch is installed on a draw-out mechanism, with electrical and mechanical interlocks for secure removal after load bypass. The ATS control/logic panel is mounted on the enclosure door and connected by a wire harness and multi-pin disconnect plugs. The transfer switch and/or the control panel may be tested, isolated and removed for maintenance without load interruption.

The bypass-isolation switch module is the same basic design as the automatic transfer switch module and thus has the same electrical ratings. Manually operated, it features high speed, quick make/quick break contact action. The bypass-isolation switch has three basic positions:

1. Automatic: Source 1 (Normal) bypass contacts open, Source 2 (emergency) bypass contacts open.
2. Bypass Normal: Source 1 (Normal) bypass contacts closed, Source 2 (emergency) bypass contacts open.
3. Bypass Emergency: Source 1 (Normal) bypass contacts open, Source 2 (emergency) bypass contacts closed.

Interlocks and Indicators

Every MBTS Series Bypass-Isolation Transfer Switch is supplied with all necessary electrical and mechanical interlocks to prevent improper sequence of operation as well as the necessary interlocking circuit for engine starting integrity. Each MBTS Series Switch is furnished with a detailed, step-by-step operating instruction plate, as well as the following function diagnostic lights:

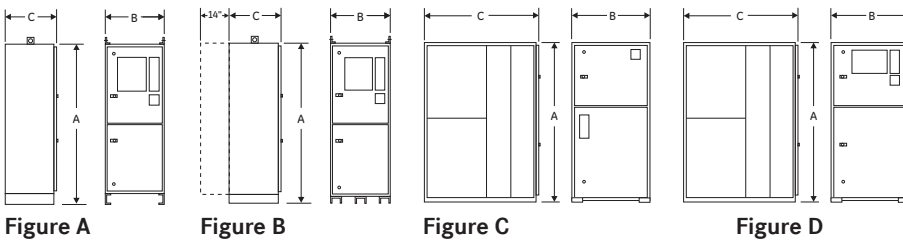
- Source 1 (Normal) Available
- Source 2 (Emergency) Available
- Bypass Switch in Source 1 (Normal) Position
- Bypass Switch in Source 2 (Emergency) Position
- Automatic Transfer Switch in Test Position
- Automatic Transfer Switch Isolated
- Automatic Transfer Switch Inhibit
- Automatic Transfer Switch Operator Disconnect Switch "Off"
- Automatic Transfer Switch in Source 1 (Normal) Position
- Automatic Transfer Switch in Source 2 (Emergency) Position

MBTS & MBTSD Model, Dimensions and Weights

Ampere Rating	Poles	NEMA 1 Enclosed				Weight		Application Notes
		Height (A)	Width (B)	Depth (C)	Reference Figure	Open Type	NEMA 1	
100, 150 225, 260 400	2, 3 4	83 (211) 83 (211)	30 (76) 30 (76)	31 (79) 31 (79)	A	310 (141) 380 (173)	770 (350) 840 (322)	1 - 9
600	3 4	90 (229) 90 (229)	36 (91) 40 (102)	28.25 (72) 28.25 (72)	B	660 (299) 770 (349)	1220 (533) 1365 (619)	
800, 1000 1200	3 4	90 (229) 90 (229)	40 (102) 46 (117)	28.25 (72) 28.25 (72)		C	765 (347) 910 (413)	
1600, 2000 2600	3 4	80 (2023) 80 (2023)	40.6 (1031) 46.1 (1171)	64.6 (1640) 64.6 (1640)	D		1978 (897) 2275 (1032)	
3000	3 4	80 (2023) 80 (2023)	40.6 (1031) 46.1 (1171)	64.6 (1640) 64.6 (1640)		D	2572 (1166) 3049 (1383)	4456 (2021) 4977 (2258)
4000	3 4	90 (229) 90 (229)	47.5 (121) 54 (137)	81 (206) 81 (206)	D		4310 (1955) 5510 (2499)	4660 (2113) 5860 (2658)

MBTSD Model, Dimensions and Weights

Ampere Rating	Poles	NEMA 1 Enclosed				Weight		Application Notes
		Height (A)	Width (B)	Depth (C)	Reference Figure	Open Type	NEMA 1	
100, 150 225, 260 400, 600	3 4	90 (229) 90 (229)	36 (91) 40 (102)	28.25 (72) 28.25 (72)	B	730 (331) 840 (381)	1280 (581) 1385 (628)	1 - 8
800, 1000 1200	3 4	90 (229) 90 (229)	40 (102) 46 (117)	28.25 (72) 28.25 (72)		C	835 (379) 980 (444)	
1600, 2000 2600	3 4	80 (2023) 80 (2023)	40.6 (1031) 46.1 (1171)	64.6 (1640) 64.6 (1640)	C		1978 (897) 2275 (1032)	4044 (1835) 4431 (2010)
3000	3 4	80 (2023) 80 (2023)	40.6 (1031) 46.1 (1171)	64.6 (1640) 64.6 (1640)		D	2572 (1166) 3049 (1383)	4456 (2021) 4977 (2258)
4000	3 4	90 (229) 90 (229)	47.5 (121) 54 (137)	81 (206) 81 (206)	D		4380 (1986) 5580 (2531)	4730 (2145) 5930 (2689)



APPLICATION NOTES:

- Metric dimensions (cm) and weights (Kg) shown in parenthesis adjacent to English measurements in inches and pounds.
- Includes 1.25" door projection beyond base depth. Allow a minimum of 3" additional depth for projection of handle, light, switches, pushbuttons, etc.
- All dimensions and weights are approximate and subject to change without notice.
- Special enclosures (NEMA 3R, 4, 4X, 12, etc.) dimensions and layout may differ. Consult the MTU Onsite Energy factory for details.
- Bypass Model product can not be ordered with inverted style.
- Special lug arrangements may require different enclosure dimensions. For certified drawings, contact the MTU Onsite Energy factory.
- Packing materials must be added to weights shown. Allow 15% additional weight for cartons, skids, crates, etc.
- Add 4" in height for removable lifting lugs.
- MBTS(D) 600-1200A & MBTSD 100 - 1200A standard configuration is top entry. 14" rear adapter bay required for bottom entry. Consult the MTU Onsite Energy factory for details.
- Bypass switch weights for 1600 - 4000 amp units vary up to 10% based on connections variations. Weights shown are for estimation only.
- 3000 amp depth dimension shown is standard. Depending on your cable/conduit requirements you may desire a deeper enclosure. Consult the MTU Onsite Energy factory for further details.
- Lug adapters for 3000 - 4000 amp limits may be staggered length for ease of entrance. Consult the MTU Onsite Energy factory for details.

AL / CU UL Listed Solderless Screw-Type Terminals for External Power Connections

Switch Size Amps	Normal, Emergency & Load Terminals	
	Cables/Pole	Wire Ranges
MBTS & MBTSD		
100 - 225	1	#6 to 250 MCM
260	1	#4 to 600 MCM
400	1	#4 to 600 MCM
600	2	#2 to 600 MCM
800 / 1000 / 1200	4	#2 to 600 MCM
1600 / 2000 / 2600 / 3000 / 4000	*	*
MBTSD		
100 - 400	1	#4 to 600 MCM
600	2	#2 to 600 MCM
800 / 1000 / 1200	4	#2 to 600 MCM
1600 / 2000 / 2600 / 3000 / 4000	*	*

* Line and load terminals are located in rear and arranged for bus bar connection. Terminal lugs are available at additional cost. Contact the MTU Onsite Energy factory for more details.

MBTSD Model – Delayed Transition Transfer/Bypass-Isolation Switches

The MTSD Delayed Transition Transfer Switch with a timed center-off position is available in a bypass configuration. The MBTSD Model Bypass incorporates the features of both the MBTS Bypass-Isolation Switch and the MTSD unit for transfer of large motor loads, transformers, UPS systems or load shedding to a neutral "Off" position. Reference the MTSD unit features and operation discussion for more details.

MBTSD Model – Cloded Transition Transfer/Bypass-Isolation Switches

The MTSD Closed Transition Transfer Switch may be applied with a bypass-isolation switch for the utmost in reliability and versatility. The MBTSD Model provides the ability to withdraw the transfer switch unit for maintenance or inspection. Reference the MTSD unit features and operation discussion for more details.

Electrical Ratings

- Ratings 100 to 4000 amperes
- 2, 3 or 4 Poles
- Open type, NEMA 1, 3R, 4, 4X and 12
- Available with MTU Onsite Energy MTS, MTSD and MTSDT Series Automatic Transfer Switch
- Bypass and transfer switch have identical ratings
- Suitable for emergency and standby applications on all classes of load, 100% tungsten rated through 400 amps
- UL 1008 listed at 480 VAC
- CSA C22.2 No. 178 certified at 600 VAC

Performance Features

- Load is not interrupted during bypass operation
- High close-in and withstand capability
- Temperature rise test per UL 1008 conducted after overload and endurance tests exceeds UL requirements
- Available in MBTS (utility-generator), MBTSU (utility-utility), MBTSG (generator-generator) and MBTSM (manual configurations); models include standard, delayed and closed transition

Design and Construction Features

- Automatic transfer switch is located on a draw out mechanism to facilitate maintenance
- Emergency power systems can be electrically tested without disturbing the load
- Power cables do not have to be disconnected to remove the transfer switch

- Bypass to any available source with the automatic transfer switch removed
- Engine start circuit maintained during bypass operation; normal power failure causes engine start contact closure even with the ATS removed
- Diagnostic lights and detailed instructions for simple step-by-step operation
- Mechanical and electrical interlocks ensure proper sequence of operation
- Bypass switch contacts are closed only during the bypass-isolation operation
- Silverplated copper bus interconnection of the transfer and bypass switches on all sizes

UL 1008 Withstand and Closing Ratings

- Please refer to MTU Onsite Energy Publication TB-1102



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MTX

Automatic Transfer Switch

MTU Onsite Energy's MTX Series Automatic Transfer Switches are designed for residential and light commercial critical/non-life safety applications requiring the dependability and ease of operation found in a power contactor switch.

- Ratings 40 to 400 amps (2, 3 and 4 pole)
- UL 1008 and CSA listed
- Seismic Compliance to IEEE-693-2005 and IBC-2006
- Double throw, mechanically interlocked contactor mechanism
- Electrically operated, mechanically held
- Designed for standby applications

MTU Onsite Energy's MTX switches are equipped with the MX60 control panel. This microprocessor control includes:

- Undervoltage sensing (90% pickup/80% dropout) of Source 1 (normal)
- Voltage and frequency sensing of Source 2 (emergency) (90% voltage/95% frequency pickup)
- Time Delay Engine Start (P) - 5 seconds
- Time Delay Engine Warmup (W) - Transfer to Emergency (Source 2) - 20 seconds
- Time Delay Utility Stabilization/Retransfer to Utility (Source 1) (T) - 5 minutes
- Time Delay Engine Cool Down (U) - 5 minutes

All time delays are fixed (non-adjustable).



MTU Onsite Energy MTX Series Small Frame Residential, Commercial & Light Industrial Switch with LED Control Panel (cover removed)

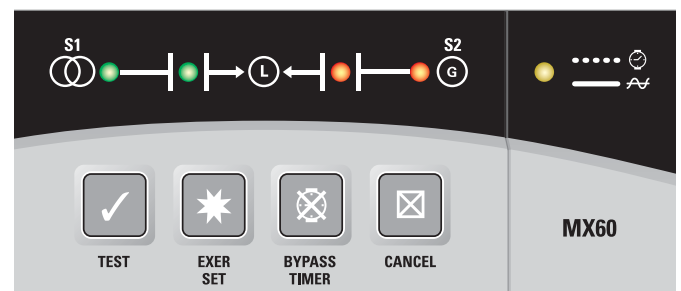
The unit is available in open type, NEMA 1 or NEMA 3R enclosures. The MX60 control adds a user interface and functionality, including:

- Indicating LEDs for source availability and switch position
- Push buttons for test, exerciser set, timer bypass and program cancel
- Special status annunciation of in-phase transfer and timer operation
- Selectable 7, 14, 21 or 28 day (factory set 28 days) generator (Source 2) with or without load exerciser timer
- Diagnostic LED indications in logical one-line configuration

Additional options include:

A3/A4 Auxiliary contacts (1 each) closed in Source 1 (normal) and Source 2 (emergency) positions

B9X 1.5 Amp/12 or 24 VDC Battery Charger



MX60 Microprocessor Control Panel

Ordering Information

M T X 0 0 0		0			Z E C	Z V C	M 0 6 0
MODEL/TYPE	CONTROL PANEL	APPLICATION	AMPERE SIZE	SWITCHED POLES	ENCLOSURE TYPE	OPERATIONAL VOLTAGE	ACCESSORIES
M T X 0 0 0 Standard (Open Transition)	M 6 MX60 Microprocessor Control Unit 0 0 No Microprocessor Control Unit	0 Utility - Generator	0 0 4 40 amps 0 0 8 80 amps 0 1 0 100 amps 0 1 5 150 amps 0 2 0 200 amps 0 2 2 225 amps 0 3 0 300 amps 0 4 0 400 amps	B 2 Poles E 3 Poles F 4 Poles	0 1 Type 1 Enclosure 3 R Type 3R Enclosure 0 0 Open Style Unit	Consult Table Below	Then choose additional accessories A3/A4 Auxiliary Contacts (1 each) Closed in Source 1 (normal) and Source 2 (emergency) B9X Battery Charger 1.5 Amp / 12 or 24 VDC For information on MTX OEM plans, please consult your MTU Onsite Energy representative

Example

MTX000M60010E-ZEC01ZVC50M060

This number string shows the correct format for a MTX Model Automatic Transfer Switch with MX60 microprocessor control unit, Utility - Generator, 100 amps, 3 pole, NEMA Type 1 enclosure, 480V 3f, 3 wire, 60 Hz system with the standard group of accessories.

Technical Specifications

Lug Configuration			
Amp Size	Qty Per Phase and Neutral	Size	
40 - 80	1	#8 to 3/0	8 to 85 mm ²
100 - 225	1	#6 to 250 MCM	13 to 127 mm ²
300 - 400	1	#4 to 600 MCM	21 to 304 mm ²

Ampere Rating	Poles	Dimensions inches (mm)						Open Style	weight lbs. (kg)
		NEMA 1			NEMA 3R				
		H	w	D	H	w	D		NEMA 1
40 - 225	2, 3	24 (610)	18 (457)	10 (254)	24 (610)	18.5 (470)	10.5 (267)	12 (5.4)	67 (30.4)
	4							18 (8.2)	73 (33.1)
300 - 400	2, 3	46 (1168)	24 (610)	14 (356)	46 (1168)	24 (610)	15 (381)	59 (26.8)	168 (76.2)
	4							70 (31.8)	180 (81.7)

UL 1008 Withstand and Closing Ratings

Please refer to MTU Onsite Energy Publication TB-1102.

	Voltage / Phase / Config / Hz
10	120V, 1PH, 2W, 60HZ
12	120V, 3PH, 3W, 60HZ
20	120/240V, 1PH, 3W, 60HZ
22	110/120V, 1PH, 3W, 50HZ
24	220V, 1PH, 2W, 50HZ
25	240V, 1PH, 2W, 50HZ
26	208V, 1PH, 2W, 60HZ
30	240V, 3PH, 3W, 60HZ
31	208V, 3PH, 3W, 60HZ
32	220V, 3PH, 3W, 50HZ
35	139/240V, 3PH, 4W, 60HZ
38	120/240V, 3PH, 4W, 60HZ
39	220V, 3PH, 3W, 60HZ
40	120/208V, 3PH, 4W, 60HZ
41	127/220V, 3PH, 4W, 60HZ
42	127/220V, 3PH, 4W, 50HZ
46	120/208V, 3PH, 4W, 50HZ
50	480V, 3PH, 3W, 60HZ
51	440V, 3PH, 3W, 60HZ
52	440V, 3PH, 3W, 50HZ
53	440V, 1PH, 2W, 60HZ
54	480V, 3PH, 3W, 50HZ
57	480V, 1PH, 2W, 60HZ
58	254/440V, 3PH, 4W, 60HZ
59	254/440V, 3PH, 4W, 50HZ
70	277/480V, 3PH, 4W, 60HZ
82	380V, 1PH, 2W, 50HZ
90	240/416V, 3PH, 4W, 60HZ
91	220/380V, 3PH, 4W, 60HZ
92	220/380V, 3PH, 4W, 50HZ
93	240/416V, 3PH, 4W, 50HZ
96	416V, 3PH, 3W, 60HZ
97	380V, 3PH, 3W, 60HZ
98	380V, 3PH, 3W, 50HZ
99	416V, 3PH, 3W, 50HZ



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DIGITAL CONTROLLER

DGC-2020 Data Sheet



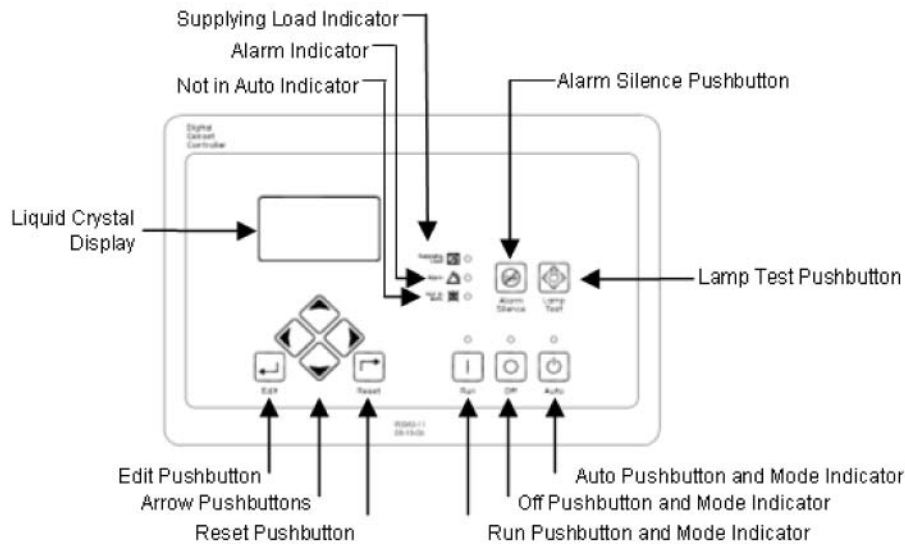
MTU Onsite Energy's Digital Genset Controller (DGC-2020) is a highly advanced integrated generator set control system. The DGC-2020 is perfectly focused, combining rugged construction and microprocessor technology to offer a product that will hold up to almost any environment and flexible enough to meet your application's needs. This device provides generator set control, transfer switch control, metering, protection, and programmable logic in a simple, easy-to-use, reliable, rugged, and cost effective package.



PRODUCT HIGHLIGHTS

- UL Recognized, CSA Certified, CE approved
- NFPA-110 compatible
- Microprocessor based
- Windows-based software for optional remote operation (Software can be downloaded at www.mtuonsiteenergy.com)
- Complete system metering
- Expandable to meet customer needs
- Optional accessories for Ethernet communication

DIAGRAM



Front Panel LED Indicators:

- Run: Green - Indicates the DGC-2020 is in the RUN mode
- Off: Red - Indicates the DGC-2020 is in the OFF mode
- Auto: Green - Indicates the unit is in the AUTO mode of operation
- Not in Auto: Red - Indicates the unit is not in the AUTO mode
- Supplying Load: Green - Indicates the system is supplying current to a connected load
- Alarm: Red - Indicates an alarm situation by continuous illumination. Indicates a Pre-alarm by flashing.

DIGITAL CONTROLLER

DGC-2020 Data Sheet



Standard Features	Level 1	Level 2	Level 3
Generator Metering	✓	✓	✓
Engine Monitoring	✓	✓	✓
Generator Set Control	✓	✓	✓
Emergency Stop	✓	✓	✓
Engine Protection	✓	✓	✓
Free Windows-Based Software (BESTCOMSPPlus)	✓	✓	✓
Automatic Transfer Switch Control	✓	✓	✓
Event Recording	✓	✓	✓
Suitable for use on rental generator sets with Hi/Lo line sensing or single or three phase sensing override	✓	✓	✓
SAE J1939 Engine ECU Communications (Expandable I/O Capability)	✓	✓	✓
Modbus Communications via RS-485	✓	✓	✓
Multilingual Capability (English, Spanish, Chinese)	✓	✓	✓
Extremely Rugged, Fully Encapsulated Design	✓	✓	✓
16 Programmable Contact Inputs	✓	✓	✓
12 Programmable 2 Adc Form A Rated Contacts	✓	✓	✓
3 Phae Bus Sensing	✓	✓	✓
Wide Ambient Temperature Range (-40 °C to 70 °C / -40 °F to 158 °F)	✓	✓	✓
NFPA110 Compatible	✓	✓	✓
HALT (Highly Accelerated Life Tests) Tested	✓	✓	✓
IP 54 Front Panel Rating with Integrated Gasket	✓	✓	✓
LCD Heater	✓	✓	✓
UL-508 Recognized	✓	✓	✓
UL Recognized, CSA Certified, CE Approved	✓	✓	✓
Current Sensing (5A CT Inputs)	✓	✓	✓
Generator Frequency - 50/60 Hz	✓	✓	✓
Battery Backup for Real Time Clock	✓	✓	✓
Generator Protection (27, 32, 40Q, 59, 810, 81U)	✓	✓	✓
Generator Protection (47, 51)		✓	✓
External Modem Connection (RS-232)		✓	✓
Automatic Synchronizer			✓

DIGITAL CONTROLLER

DGC-2020 Data Sheet



Optional Accessories	Level 1	Level 2	Level 3
Analog Extension Module 2020 (AEM-2020)	✓	✓	✓
Load Share Module 2020 (LSM-2020) <ul style="list-style-type: none"> Ethernet Parallel (Must have autosync panel to synchronize and loadshare) 	✓	✓	✓ ✓
Contact Expansion Module 2020 (CEM-2020)	✓	✓	✓
Modbus RTU-TCP Gateway	✓	✓	✓
Remote Communications to RDP-110 Remote Annunciator Option	✓	✓	✓

FUNCTIONS

Generator Set Protection

Generator (All Levels):

ANSI Codes	Undervoltage (27)	Overvoltage (59)
	Reverse Power (32)	Overfrequency (810)
	Loss of Excitation (40Q)	Underfrequency (81U)

Generator (Level 2/3 only):

ANSI Codes	Phase Imbalance (47)	Generator Overcurrent (51)
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All Generator Protection features are programmable as alarms, pre-alarms, status, or not used.

Engine:

Alarms (Shutdowns)

Low Oil Pressure
 High Coolant Temperature
 Low Coolant Level
 Overspeed
 Overcrank
 Engine Sender Unit Failure
 Fuel Leak/Fuel Sender Failure
 Emergency Stop
 Battery Charger Failure
 Critical Low Fuel Level (optional)

Pre-Alarms (Warnings)

Low Oil Pressure
 High Coolant Temperature
 Low Coolant Temperature
 Battery Overvoltage
 Weak Battery
 Battery Charger Failure
 Engine Sender Unit Failure
 Engine kW Overload (3 Levels)
 Maintenance Interval Timer
 Low Coolant Level
 Low Fuel Level
 Fuel Leak Detect
 High Fuel Level (optional)

All alarms and pre-alarms can be enabled or disabled via the BESTCOMSPlus PC software or the front panel. Additional custom alarms and pre-alarms are available upon request.

Generator Set Metering

- Generator parameters consist of eight standard parameters including, but not limited to voltage, current, Hz, real power (watts), apparent power (VA), and power factor. The view can be programmed to display up to 20 parameters using the scrolling and time delay feature.
- Engine parameters include oil pressure, coolant temperature, RPM, battery voltage, fuel level, engine runtime, and various SAE J1939 supported parameters.

DIGITAL CONTROLLER

DGC-2020 Data Sheet



FUNCTIONS, continued:

Engine Control

- Cranking Control: Cycle or Continuous (Quantity and Duration Fully Programmable)
- Engine Cooldown: Smart Cooldown function saves fuel and engine life.
- Successful Start Counter: Counts and records successful engine starts
- Timers:
 - Engine Cooldown Timer
 - Engine Maintenance Timer
 - Pre-Alarm Time Delays for Weak/Low Battery Voltage
 - Alarm Time Delay for Overspeed
 - Alarm Time Delay for Sender Failure
 - Arming Time Delays after Crank Disconnect:
 - Low Oil Pressure
 - High Coolant Temperature
 - Pre-Crank Delay
 - Continuous or Cycle Cranking Time Delay
 - Programmable Logic Timers

Event Recording

The DGC-2020 has an event recorder that provides a record of alarms, pre-alarms, engine starts, engine runtime loaded, engine runtime unloaded, last run date, and many other events that are all date and time stamped to help the user determine the cause and effect of issues related to the generator set. Contains 30 event records each retaining up to 99 occurrences in memory. Time, date, and engine hour detail is available for the most current 30 occurrences within each event record.

Transfer Switch Control (Mains Failure) – Level 3 only

The DGC-2020 can monitor utility (mains) and determines if it is providing voltage that is suitable for the loads. If the utility (mains) goes beyond predetermined levels, the generator is started and the utility (mains) is disconnected from the load and the generator is connected. When the utility (mains) returns to acceptable levels for a sufficient time, the generator is disconnected and the utility (mains) is reconnected to the load. It also includes appropriate adjustable timers or time delays for establishing stable utility (mains) operation. Utility breakers must be motor operated and interfaced with the DGC-2020.

RS-485 Communications

When utilized, the user can send and receive information from the DGC-2020 via the RS-485 communications port and Modbus-RTU protocol. This feature allows the DGC-2020 controlled generator set to be fully integrated into the building management system. Please see the *Instruction Manual* for the Modbus register list.

Programmable Logic

The DGC-2020 offers a very powerful, yet easy-to-use, programmable logic scheme for custom programming of the various inputs, outputs, alarms, and pre-alarms. It allows these elements to be integrated into a complete logic scheme so that the user can meet even the most complex specification. The Programmable Logic control includes the selection of logic gates and timers with drag-and-drop technology to make it fast and simple.

Remote Display Panel Annunciation

The DGC-2020 can communicate to a remote display panel, Model RDP-110. This requires only two wires to annunciate all of the alarms and pre-alarms required by NFPA-110 Level I and II. External power is required.

DIGITAL CONTROLLER

DGC-2020 Data Sheet



FUNCTIONS, continued:

External Modem Interface - Level 2 and 3 only

The external modem is now connected to the DGC-2020 via RS-232. A dial-out modem enables remote control, monitoring, and setting of the DGC-2020. When an alarm or pre-alarm condition occurs, the DGC-2020 can dial up to four telephone numbers, in sequence, until an answer is received and the condition is annunciated.

SAE J1939 Communications

SAE J1939 CANBUS communications allows the DGC-2020 to communicate to the engine's ECU (Engine Control Unit) to gather critical engine information like oil pressure, engine coolant temperature, RPM, battery voltage, and much more. By utilizing the ECU, adding analog engine senders is no longer required. This can save substantial money for the installer. It also eliminates any errors or discrepancies between the ECU data and the data displayed on the DGC-2020 that may be present due to analog sender inaccuracies or incompatibility. A total of 47 engine parameters can be obtained via the ECU. You can also derive the added benefit of having access to the ECU's diagnostic troubleshooting codes (DTCs). The DTCs provide information about the engine's operating conditions and communicates these via SAE J1939, to the DGC-2020, thus eliminating the need for hand-held service tools to diagnose simple engine issues. With the optional modem, the DTCs can be accessed remotely, and valuable service time can be saved by remote diagnostics and taking the right parts to fix the problem the first time.

SPECIFICATIONS

Operating Power

- Nominal: 12 or 24 Vdc
- Range: 6 to 32 Vdc
- Power Consumption:
 - Sleep Mode: 5W with all relays non-energized
 - Typical Operational Mode: 14.2W - Run mode, LCD heater on, 6 relays energized
- Battery Ride Through: Withstands cranking ride-through down to 0 V for 50 ms (typical)

Current Sensing

Continuous Rating
1 Second Rating
Burden

5 Amps AC Current Sensing

0.1 to 5.0 Amps AC
10 Amps AC
1 VA

1 Amp AC Current Sensing

0.02 to 1.0 Amps AC
2 Amps AC
1 VA

Voltage Sensing

- Range: 2 to 576 V rms, line-to-line
- Frequency Range: 10 to 72 Hz for 50/60 style and 10 to 480 Hz for 400 Hz style
- Burden: 1 VA
- 1 Second Rating: 720 V rms

Contact Sensing/Input Contacts

- Contact sensing inputs include one emergency stop input and 16 programmable inputs. The factory utilizes up to three of these inputs. The emergency stop input accepts normally closed, dry contacts. The remote emergency stop is limited to 75 ft. standard. Extended runs are available with optional relay. All programmable inputs accept normally open, dry contacts.

DIGITAL CONTROLLER

DGC-2020 Data Sheet



SPECIFICATIONS, continued:

Engine System Inputs

- Fuel Level Sensing Resistance Range: 33 to 240 Ω nominal
- Coolant Temperature Sensing Resistance Range: 62.6 to 637.5 Ω nominal
- Oil Pressure Sensing Resistance Range: 34 to 240 Ω nominal
- Engine Speed Sensing:
 - Magnetic Pickup
 - Voltage Range: 3 to 35 V peak (6 to 70 V peak-peak)
 - Frequency Range: 32 to 10,000 Hz
 - Generator Voltage Range: 12 to 576 V rms

Output Contacts

- (15) Total Programmable Outputs: (3) 30 Adc and (12) 2 Adc

The factory utilizes the following on each genset which can be reprogrammed as needed:

- (3) 30 Adc for Crank, Run and Pre-Start
- (3) 2 Adc for Audible Alarm, Alarm Output, and Pre-Alarm Output

(9) 2 Adc remain as user-defined outputs

Metering

- Generator Voltage (rms)
 - Metering Range: 0 to 576 Vac (direct measurement), 577 to 9,999 Vac (through VT using VT ratio setting)
 - Accuracy: $\pm 1.0\%$ of programmed rated voltage or ± 2 Vac
- Generator Current (rms)
 - Generator current is measured at the secondary windings of user-supplied 1 A or 5 A CTs.
 - Metering Range: 0 to 5,000 Aac
 - CT Primary Range: 1-5,000 Aac, in primary increments of 1 Aac
 - Accuracy: $\pm 1.0\%$ of programmed rated current or ± 2 Aac
- Generator Frequency
 - Metering Range: 10 to 72 Hz (50/60 Hz), 10 to 480 (400 Hz)
 - Accuracy: $\pm 0.25\%$ or 0.05 Hz
- Apparent Power
 - Indicates total kVA and individual line kVA (4-wire, line-to-neutral or 3-wire, line-to-line).
 - Accuracy: $\pm 3\%$ or the full-scale indication or ± 2 kVA
- Power Factor
 - Metering Range: 0.2 leading to 0.2 lagging
 - Accuracy: ± 0.02
- Real Power
 - Indicates total kW and individual line kW (4-wire, line-to-neutral or 3-wire, line-to-line)
 - Accuracy: $\pm 3\%$ of the full-scale indication or ± 2 kW
- Oil Pressure
 - Metering Range: 0 to 145 psi or 0 to 1,000 kPa
 - Accuracy: $\pm 3\%$ of actual indication or ± 2 psi or ± 12 kPa (subject to accuracy of sender)

DIGITAL CONTROLLER

DGC-2020 Data Sheet



SPECIFICATIONS, Metering, continued:

- Coolant Temperature
 - Metering Range: -40 °C to 210°C (-40 °F to 410 °F)
 - Accuracy: ±3% or actual indication or ±2° (subject to accuracy of sender)
- Fuel Level
 - Metering Range: 0 to 100%
 - Accuracy: ±2% (subject to accuracy of sender)
- Battery Voltage
 - Metering Range: 6 to 32 Vdc
 - Accuracy: ±3% of actual indication or ±0.2 Vdc
- Engine RPM
 - Metering Range: 0 to 4,500 rpm
 - Accuracy: ±2% of actual indication or ±2 rpm
- Engine Run Time
 - Engine run time is retained in nonvolatile memory.
 - Metering Range: 0 to 99,999 h, Update Interval: 6 min
 - Accuracy: ±1% of actual indication or ±12 min
- Maintenance Timer
 - Maintenance timer indicates the time remaining until generator set service is due. Value is retained in nonvolatile memory.
 - Metering Range: 0 to 5,000 h, Update Interval: 6 min
 - Accuracy: ±1% of actual indication or ±12 min

Generator Protection Functions

- Overvoltage (59) and Undervoltage (27)
 - Pickup Range: 70 to 576 Vac
 - Activation Delay Range: 0 to 30 s
- Underfrequency (81U) and Overfrequency (81O)
 - Pickup Range: 45 to 66 Hz (50/60 Hz nominal), 360 to 440 Hz (400 Hz nominal)
 - Pickup Increment: 0.1 Hz (50/60 Hz nominal), 0.1 Hz (400 Hz nominal)
 - Activation Delay Range: 0 to 30 s
- Reverse Power (32)
 - Pickup Range: -50 to 5%
 - Pickup Increment: 0.1%
 - Hysteresis Range: 1 to 10%
 - Hysteresis Increment: 0.1%
 - Activation Delay Range: 0 to 30 s
 - Activation Delay Increment: 0.1 s
- Loss of Excitation (40Q)
 - Pickup Range: -150 to 0%
 - Pickup Increment: 0.1%
 - Hysteresis Range: 1 to 10%
 - Hysteresis Increment: 0.1%
 - Activation Delay Range: 0 to 30 s
 - Activation Delay Increment: 0.1 s
- Phase Imbalance (47): Level 2 and 3 only
 - Pickup Range: 5 to 100 Vac
 - Pickup Increment: 1 Vac
 - Activation Delay Range: 0 to 30 s, Activation Delay Increment: 0.1 s
- Overcurrent (51): Level 2 and 3 only
 - Pickup Range: 0.18 to 1.18 Aac (1 A current sensing), 0.9 to 7.75 Aac (5 A current sensing)
 - Time Dial Range: 0 to 30 s (fixed time curve), 0 to 9.9 (inverse curve time multiplier)
 - Inverse Time Curves: 17 selectable Time Overcurrent Characteristic Curves

DIGITAL CONTROLLER

DGC-2020 Data Sheet



SPECIFICATIONS, continued:

Environmental

- Temperature: Operating: -40 °C to 70 °C (-40 °F to 158°F), Storage: -40 °C to 85 °C (-40 °F to 185 °F)
- Humidity: IEC 68-2-38
- Salt Fog: ASTM B 17-73, IEC 68-2-11 (tested while operational)
- Ingress Protection: IEC IP54 for front panel
- Shock: 15 G in 3 perpendicular planes
- Vibration:

5 to 29 to 5 Hz:	1.5 G peak for 5 min.
29 to 52 to 29 Hz:	0.036" DECS-A for 2.5 min.
52 to 500 to 52 Hz:	5 G peak for 7.5 min.

Swept over the above ranges for 12 sweeps in each of three mutually perpendicular planes with each 15-minute sweep.

Agency Approvals

- UL/CSA Approvals: "cURus" approved to UL 508 R and CSA C22.2 No.14
- NFPA Compliance: Complies with NFPA Standard 110, Standard for Emergency and Standby Power

CE Compliance

This product complies with the requirements of the following EC Directives:

- Low Voltage Directive (LVD) – 73/23/EEC as amended by 93/68/EEC
- Electromagnetic Compatibility (EMC) – 89/336/EEC as amended by 92/31/EEC and 93/68/EEC
- EN 50178:1997– Electronic Equipment for use in Power Installations
- EN 61000-6-4:2001– Electromagnetic Compatibility (EMC), Generic Standards, Emission Standard for Industrial Environments
- EN 61000-6-2:2001– Electromagnetic Compatibility (EMC), Generic Standards, Immunity for Industrial Environments

ADDITIONAL SPECIFICATIONS – Levels 2 and 3

The DGC-2020 has been designed to provide maximum functionality at a minimum price. Buy only what is needed. We have selected options to help maximize the value provided by the DGC-2020.

Battery Backup for Real Time Clock – All Levels

A ten-year (typical life) lithium battery is used to provide long-term maintenance of the real time clock setting. This battery is serviceable by removing the rear cover. The settings, programming, and event records are saved in nonvolatile memory and do not require battery backup.

External Dial-Out Modem – Levels 2 and 3

The DGC-2020 can provide long distance communications by including an external modem. When a modem is selected, the user can access the DGC-2020 from virtually anywhere via a telephone line. The user can control and monitor the generator set as if standing right next to it. The DGC-2020 can also dial out for pre-programmed circumstances to alert the user of selected conditions.

DIGITAL CONTROLLER

DGC-2020 Data Sheet



ADDITIONAL SPECIFICATIONS, continued:

Additional Generator Protection – Levels 2 and 3

In addition to the standard generator protection (27, 32, 40Q, 59, 81O, 81U), the DGC-2020 also can be equipped with a more sophisticated generator protection system. This option provides an overcurrent element (51) with 17 selectable time current characteristic curves and a voltage phase balance protection function (47).

Breaker Management - Level 3 only

The DGC-2020 is capable of controlling the generator breaker and the mains breaker. The status of the breakers is determined by using BESTCOMSPlus Programmable Logic to setup the GENBRK and MAINSBRK logic blocks. These logic blocks have outputs that can be configured to energize an output contact and control a breaker as well as inputs for breaker control and status. The DGC-2020 will attempt to close a breaker only after verifying that it can be closed. If the breaker cannot be closed, the close request will be ignored. Only one breaker can be closed at a time. Synchronization is required before closing the breaker to a live bus. Closure to a dead bus can be performed after meeting dead bus threshold and timing requirements set by the user.

Auto-Synchronizer – Level 3 only

When the DGC-2020 is configured with this option, the user can select between two types of autosynchronizers, phase lock or anticipatory style. In both methods, the DGC-2020 adjusts generator frequency and voltage to match that of the bus (mains) via contact outputs, then connects the generator to the bus by closing the connecting breaker. When the control mode is set to Power Factor (PF) or kVar, the setpoint can be derived either from a user setting or from an analog input.

Multigen Management - Level 3 only

Enabling sequencing on a networked group of load share units allows these units to manage load by starting and stopping appropriate units based on a factor of load demand and available capacity. The mode of operation is used to determine the order in which each generator in a group will contribute to the systems power production upon a demand start/stop request. Modes of operation include:

- Staggered service time
- Balanced service time
- Largest size first
- Smallest size first
- Smallest unit ID

DIGITAL CONTROLLER

DGC-2020 Data Sheet

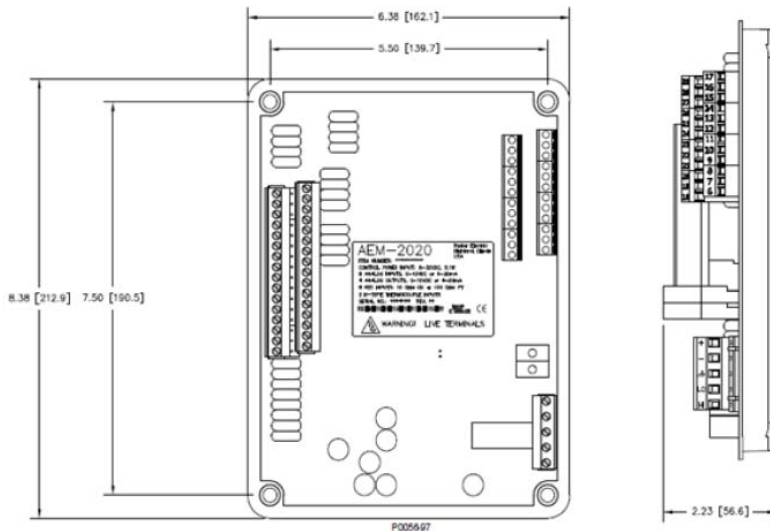


OPTIONAL ACCESSORIES

Analog Extension Module 2020 (AEM-2020)

The optional AEM-2020 is a remote auxiliary device that provides additional DGC-2020 analog inputs and outputs. Its features include:

- 8 Analog Inputs: The AEM-2020 provides eight analog inputs that are user-selectable for 4 to 20 mA or 0 to 10 Vdc. Each analog input has under/over thresholds that can be configured as status only, alarm, or pre-alarm. When enabled, an out of range alarm alerts the user of an open or damaged analog input wire. The label text of each analog input is customizable.
- 8 RTD Inputs: The AEM-2020 provides eight user-configurable RTD inputs for monitoring generator set temperature. Each RTD input can be configured as status only, alarm, or pre-alarm to protect against high or low temperature conditions. When enabled, an out of range alarm alerts the user of an open or damaged RTD input wire. The label text of each RTD input is customizable.
- 2 Thermocouple Inputs: The AEM-2020 provides two thermocouple inputs for monitoring generator set temperature. Each thermocouple input can be configured as status only, alarm, or pre-alarm to protect against high or low temperature conditions. When enabled, an out of range alarm alerts the user of an open or damaged thermocouple input wire. The label text of each thermocouple input is customizable.
- 4 Analog Outputs: The AEM-2020 provides four analog outputs that are user-selectable for 4 to 20 mA or 0 to 10 Vdc. A wide selection of parameters including oil pressure, fuel level, generator voltage, and bus voltage can be configured as analog outputs. Refer to *Section 4, BESTCOMSPi.us Software of the Instruction Manual*, for a full list of parameter selections.
- Communications via CANbus: A Control Area Network (CAN) is a standard interface that enables communication between the AEM-2020 and the DGC-2020.
- Functionality of Inputs and Outputs assigned by BESTLogic+ programmable logic.



Input and Output Terminals

DIGITAL CONTROLLER

DGC-2020 Data Sheet

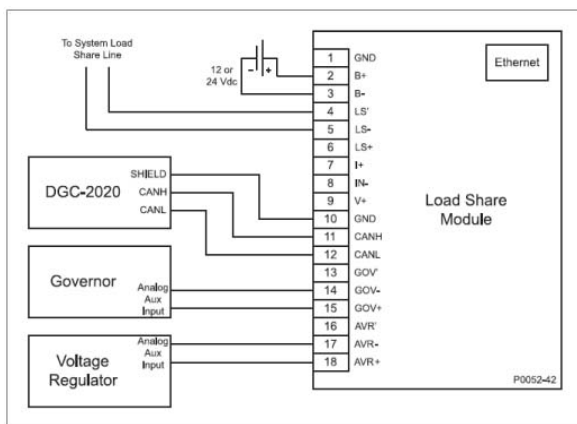


OPTIONAL ACCESSORIES, continued:

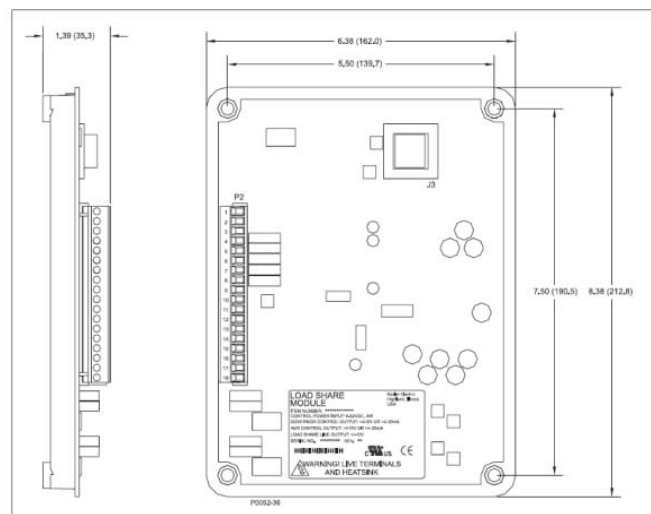
Load Share Module 2020 (LSM-2020)

The LSM-2020 is an easy to connect and use add-on module that allows the DGC-2020 to control VAR/PF and kW load sharing of a paralleled generator set. The LSM-2020 can be remotely mounted and communicates to the DGC-2020 via SAE J1939 CANbus communications. With the Level 3 controller, this module provides the flexibility to use the same model DGC-2020 generator set controller for single unit (standalone power) applications and parallel generator set applications. Pure flexibility is one of the benefits of the DGC-2020. Its features include:

- **Analog Input (Configurable):** The LSM-2020 provides one analog input that is user-selectable for 4 to 20 mA or 0 to 10 Vdc. This input can be used to control the power factor (PF) or kVar setpoint when paralleled to the utility.
- **Analog Outputs:** The LSM-2020 has three analog outputs, one connected to the voltage regulator, one connected to the speed governor, and one connected to the load sharing lines. All of these outputs can be selected via BESTCOMSPlus for 4-20 mA or ± 10 Vdc. The analog outputs also can be scaled to adapt to the compatibility requirements of existing analog equipment.
- **Multiple Generator Management:** This module adds demand start/stop control and generator sequencing to the feature packed DGC-2020. The generator sequencing can be selected by priority number, generator size, service hours remaining, and balanced service hours. This sequencing function is even smart enough to determine if all the connected controllers are in the same mode.
- **Ethernet Port:** The LSM-2020 also adds Ethernet communications to the many communications features of the DGC-2020. It is IP addressable and allows all of the functionality of BESTCOMSPlus to be utilized via Ethernet. For other Ethernet options, please refer to the Modbus RTU-TCP Gateway. **Note: This option is only for use with the BESTCOMSPlus software.**
- **Communications via CANbus:** The LSM-2020 is remotely mounted and communicates to the DGC-2020 via SAE J1939 CANbus communications.



Typical LSM-2020 Connections



LSM-2020 Overall Dimensions

DIGITAL CONTROLLER

DGC-2020 Data Sheet



OPTIONAL ACCESSORIES, continued:

Contact Expansion Module 2020 (CEM-2020)

The CEM-2020 is a remote device that provides additional DGC-2020 contact inputs and outputs giving the user flexibility to use the same model DGC-2020 generator set controller for simple or more complicated applications that require contact functionality or duplication of contacts for remote annunciation. Its features include:

- **10 Contact Inputs:** The CEM-2020 provides 10 programmable contact inputs with the same functionality as the contact inputs on the DGC-2020.
- **24 Output Contacts:** The CEM-2020 provides 24 Form C programmable output contacts with the same functionality as the output contacts on the DGC-2020. The output ratings of the Form C contacts are:

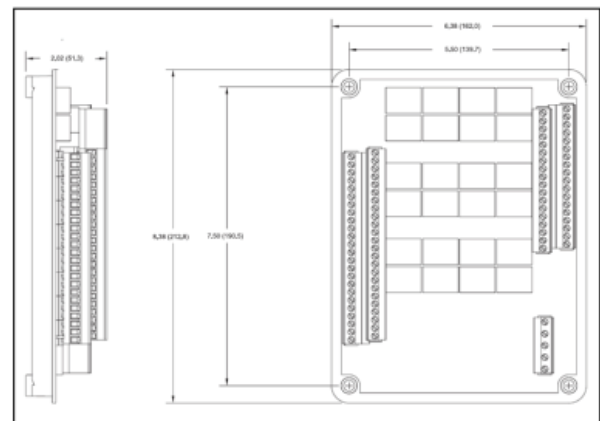
Output No.	Rating (Cont.)	Additional Information
13-24	1 Adc @ 30 Vdc	This is a gold flash contact for low current circuits.
25-36	4 Adc @ 30 Vdc	

The alternate ratings shown in the following table may be used to allow a higher rating on selected contacts:

Output No.	Rating (Cont.)	Output No.	Rating (Cont.)
13-24	1 Adc @ 30 Vdc	25, 31, 36	7 Adc @ 30 Vdc
		26 - 30	4 Adc @ 30 Vdc
		32 -35	2 Adc @ 30 Vdc

- **Communications via CANbus:** The CEM-2020 communicates to the DGC-2020 via SAE J1939 CANbus communications and allows the user to program the functionality of these inputs and outputs in the BESTCOMSPlus software.

The user can add labels for the inputs and outputs that appear in BESTCOMSPlus, show up on the front panel, and in programmable logic. All the functionality can be assigned to these inputs and outputs as if they were an integrated part of the DGC-2020. The CEM-2020 module has all of the environmental ratings, like the DGC-2020, including a model for UL Class 1 Div2 applications. The CEM-2020 terminals accept a maximum wire size of 12 AWG while the chassis ground requires 12 AWG wire. Flexibility is one of the benefits of the DGC-2020, and this add-on module enhances that benefit even further. The CEM-2020 is available for all levels, but is only functional for paralleling with Level 3.



CEM-2020 Overall Dimensions

DIGITAL CONTROLLER

DGC-2020 Data Sheet



OPTIONAL ACCESSORIES, continued:

ModBus RTU-TCP Gateway

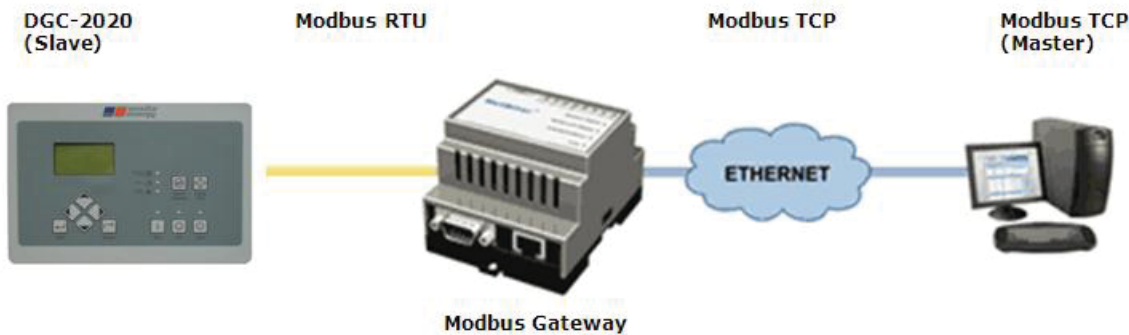
ModBus RTU-TCP Gateway connects the DGC-2020 with Ethernet and mobile networks. The gateway acts as a transparent bridge translating DGC-2020 Modbus registers allowing control systems, such as PLCs, SCADA, etc. to communicate over Ethernet. One gateway is required per generator allowing multiple generator sets to be accessed and monitored simultaneously. **Note: This option does not work with BESTCOMSPlus software.**

Features include:

- Connectivity between serial Modbus devices and the Modbus TCP
- RS-232, RS-485, and RS-422 connectivity
- Ethernet and mobile network connectivity
- 10/100 Mbit/s Ethernet
- Web-based configuration
- DIN rail mounting
- Network and serial status indicators

Below is a brief illustration of the integration of the RTU-TCP gateway with the DGC-2020 device.

Modbus RTU–Modbus TCP Gateway



For support or information, call us at 800-325-5450 or visit us at www.mtuonsiteenergy.com.

Materials and specifications subject to change without notice.
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MASTER CONTROL PANEL

Data Sheet



MTU Onsite Energy's Master Control Panel (MCP) offers a robust HMI/PLC which is pre-programmed and tested for interface with the DGC-2020 and Automatic Transfer Switch (ATS) paralleling systems. The 15" interactive touch screen displays a single line diagram layout along with color, and symbol status identifiers allowing for complete system monitoring, interface, and load management control from one easy-to-use interface.



PRODUCT HIGHLIGHTS

- System overview and control
- Multiple generator set monitoring
- Single line diagram format
- Color data point identifiers
- Symbol identification
- Control and monitor up to 8 generator sets and 16 Automatic Transfer Switches (delay, open, closed, bypass)*
- Simplified setup and page navigation
- Password protection
- Start signal management
- Load shed/add*
- Event log

PRODUCT FEATURES

Monitoring

Generator Set Status

- | | | |
|--|---------------|----------------|
| • Off | • Ready | • Alarm |
| • Breaker Position | • kW | • kVAR |
| • Amp | • PF | • Oil Pressure |
| • Dynamic gauges displaying pre-alarm and alarm set points | • Engine temp | • Hz |

ATS Status

- | | | |
|-------------|-----------------|----------|
| • Position* | • Source status | • Rating |
|-------------|-----------------|----------|

Total System Monitoring

- | | | |
|---------------------------|--------------------------|-------|
| • Bus condition detection | • Number of units online | • kW |
| • kVAR | • kVA | • Amp |
| • PF | | |

Control

- | | | |
|------------------------|------------------|-----------------|
| • Generator set system | • ATS inhibit* | • Start signals |
| • Load management | • Load add/shed* | |

**ATS must have required contact signal interface.

MASTER CONTROL PANEL

Data Sheet

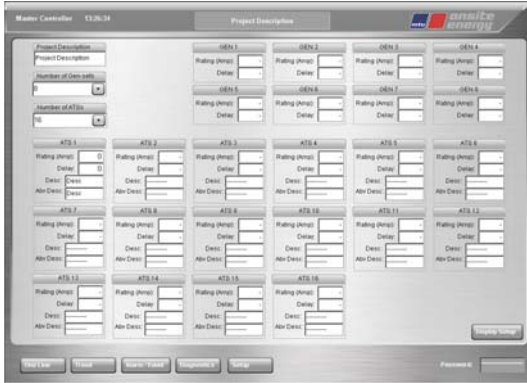


PRODUCT FEATURES, Monitoring, continued:

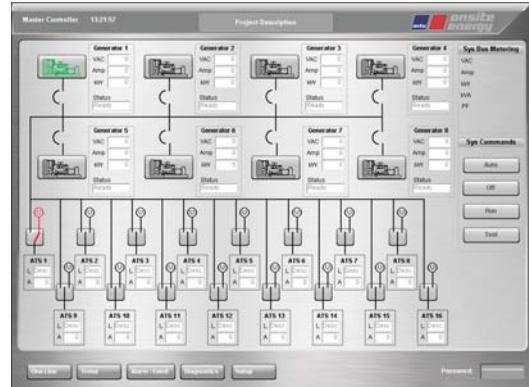
Status and Positional Identification

Status identifiers are displayed in multiple formats and are intended to be clear and quickly recognizable. Positional indicators display in a dynamic format, and status indicators are displayed both symbolically and via color indication for change in status, position, etc.

USER INTERFACE



Setup



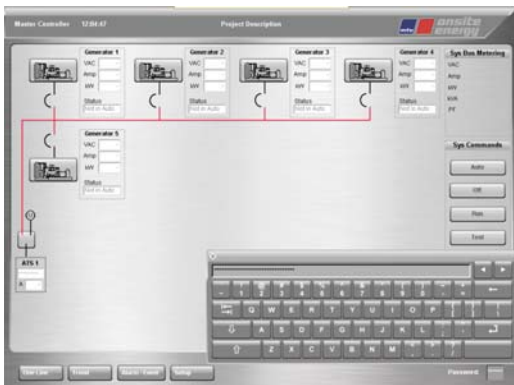
Single Line



Generator Set



Automatic Transfer Switch



Password Login



Event Log

MASTER CONTROL PANEL

Data Sheet



FUNCTIONS

Generator Set Metering

Monitor an entire system or an individual generator set. The one-line overview provides for system control and monitoring. Each generator set also has a representative for controlling one generator set independent of the system.

- Generator parameters consist of eight standard parameters including, but not limited to voltage, current, Hz, real power (watts), apparent power (VA), reactive power (VAR), and power factor. The view can be programmed to display up to 20 parameters using the scrolling and time delay feature.
- Engine parameters include oil pressure, coolant temperature, and RPM.

Engine Control

Command Buttons Status (status of specific generator set)

- | | | |
|-------------|-----------------|---------------|
| • Ready | • Running | • Not in Auto |
| • Cool down | • Synchronizing | • Cranking |
| • Alarm | • Unloading | • Resting |

Auto: Changes the mode of all units in the system to Auto

Off: Changes the mode of all units in the system to Off

Run: Changes the mode of all units in the system to Run

Event Recording

The MCP has an event recorder that provides a record of alarms, pre-alarms, and many other events that are all date and time stamped to help the user determine the cause and effect of issues related to the generator set. Time, date, and engine hour detail are available for each event record.

Transfer Switch Control

When utility failure is detected by a system ATS, the indication is transmitted to the MCP via the I/O interface. The MCP will inhibit the transfer of loads until there is sufficient generator set reserve available to support the most critical offline loads. Upon emergency system availability, the MCP will begin to transfer loads to the emergency bus. The MCP, in cooperation with the DGC-2020s, will optimize the generator set system load management for the number of generator sets operating, as well as the number of transfer switches supported by the emergency power system. Standard MCP configuration is set up to interface with time delay bypass, closed transition, and open transition.

Communications

- Modbus TCP Standard for MCP interface to external building management systems
- Modbus RS485 interface between MCP and system generator set controllers

MASTER CONTROL PANEL

Data Sheet



SPECIFICATIONS

Operating Power

With a nominal operating voltage of 24 VDC, the MCP offers two supply configurations for added reliability. The MCP supply power is sourced through a dual supply configuration allowing two sources to simultaneously or separately power the MCP. In the case of a single source failure, the redundant power sources would then solely power the MCP.

- Configuration 1
 - 24 VDC / 24 VDC: Individual generator set batteries are paralleled through the source selective supply connection.
 - 100 - 240 VAC / 24 VDC: Generator set battery is paralleled through a source selective supply connection with a utility fed power supply.

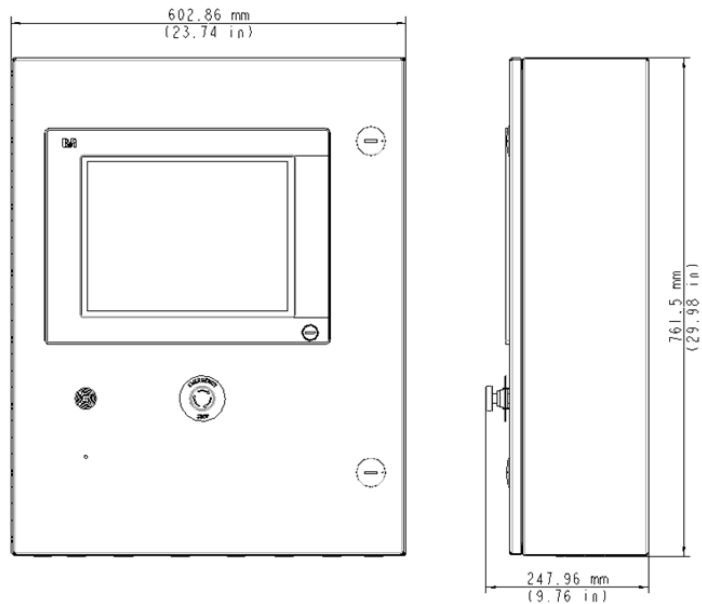
I/O

Contact inputs and outputs included to provide real time monitoring and control of system critical components. Expandable I/O is configured to adapt to specific system requirement.

- Digital output rating
 - 30 VDC / 1A
- Digital input rating
 - 24 VDC connection

WEIGHTS AND DIMENSIONS

- Weights
 - MCP only: 45.45 kg (100 lb)
 - MCP with stand: 72.73 kg (160 lb)
- Dimensions
 - Height: 761.5 mm (29.98 in)
 - Width: 602.86 mm (23.74 in)
 - Depth: 247.96 mm (9.76 in)



AGENCY APPROVALS

- UL Listed - UL508A Industrial Control Panel pending
- c-UL Listed - CSA C22.2 No. 14 Industrial Control Equipment pending

ENVIRONMENTAL

- Type 1 / NEMA 1 Enclosure
- Optional - Open Frame Construction

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PARALLELING APPLICATION GUIDE

Base Loading with Utility



SCOPE

The purpose of this document is to define a specific paralleling scenario - paralleling MTU Onsite Energy generator sets with a utility power source. Additionally, this document is intended to expand on how MTU Onsite Energy can support this paralleling scenario with simple, integrated solutions.

DEFINITION(S)

Base Loading with Utility Operation

Base loading refers to the application of the system. Base loading refers to a system in which the generator set will parallel to a utility power source. The amount of power exported to utility can be determined by a percentage of the generator set rating.

ABBREVIATED SEQUENCE OF OPERATION

1. A generator set base loading request is made by the customer.
 - 1.1 The customer initiates a start request to the generator set.
 - 1.2 The generator set starts and builds rated voltage and frequency.
 - 1.3 The generator set synchronizes and closes to the utility power source.
 - 1.4 The generator set begins to ramp on resistive and reactive load until the DGC-2020 appointed percentage of load is reached.
 - 1.5 Regardless of fluctuations in the utility power source, the generator set will constantly adjust to maintain the correct percentage of load.
2. The generator set base loading request is terminated by the customer.
 - 2.1 The customer removes the start request from the generator set.
 - 2.2 The generator set sheds load until it is producing very little power.
 - 2.3 After unloading, the generator set opens its circuit breaker and disconnects from the utility power source.
 - 2.4 The generator set enters a DGC-2020 controller-appointed cool-down period.
 - 2.5 The generator set stops, returns to standby, and awaits the next start request.

SYSTEM OPERATION

- Real power load sharing
- Reactive power load sharing

PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY MTU ONSITE ENERGY)

- DGC-2020 controller (automatic synchronization)
- Meter current transformers (CTs) and potential transformer (PT) (as needed)
- LSM-2020 load sharing module
- Permanent Magnet Generator (PMG)
 - DVR2000E(+) digital voltage regulator (standard)
 - DVR2000EC digital voltage regulator (optional)
- Motor-operated generator circuit breaker (may or may not be mounted to the generator set)*
 - Shunt trip
 - Shunt close
 - Auxiliary switch (breaker position)
 - Motorized spring charger

**If a circuit breaker is selected, MTU Onsite Energy will supply a motor-operated breaker of the indicated configuration.*

PARALLELING APPLICATION GUIDE

Base Loading with Utility



ADDITIONAL PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY THIRD PARTY)

- Paralleling switchgear, circuit breakers, and/or disconnects
- Paralleling bus and cabling
- External start signal source and connection to generator set
- Utility bus sensing connection to generator set

PROGRAMMING AND LOGIC

- Basic programming and logic will be provided to start, synchronize, and base load with the utility power source.
- Site programming and system tuning are required by the customer for proper onsite operation.

OTHER SYSTEM CONSIDERATIONS

- For generator sets used in non-emergency applications within EPA regulated areas, Tier 4i/T4 Final certified engines must be used.

SEQUENCE OF OPERATION

Base Loading Request to Generator Set

When a customer requires the generator set to parallel to a utility power source for the purpose of supplementing utility power, a base loading request can be made. The customer issues a start request to the generator set. The start signal is a command for the generator set to start, synchronize to utility power source, and close its circuit breaker. All available generator sets will start and achieve nominal frequency and voltage.

Synchronization of Generator Set

The DGC-2020 controller on the off-line generator set utilizes the LSM-2020 load share module to bias its DVR2000E(+) regulator and governor to match its speed and voltage to the utility bus. The LSM-2020 biases the speed of the engine governor to drive the difference between the phase angle of the generator set and the phase angle of the utility bus to zero. Additionally, the LSM-2020 biases the voltage regulator to match the generator set voltage to the utility bus voltage. When the synchronization window criteria are met, the generator set is considered synchronized with the utility bus, and the DGC-2020 controller issues a command to close its circuit breaker. Once its circuit breaker is closed and the DGC-2020 controller receives “breaker closed” feedback from the circuit breaker auxiliary switch, the generator set is considered paralleled. The LSM-2020 no longer actively attempts to synchronize the generator set.

Base Loading

While paralleled, the generator set is electrically interlocked and will share real load (kW) and reactive load (kVAR) with the utility power source based on a percentage of the load capacity of the generator set. When the generator set circuit breaker is first connected, the generator set produces a negligible amount of real power. The LSM-2020 load share module will bias the engine governor to begin loading kW on the generator set at a predefined amount of load per second. Load will ramp onto the generator set until the user-defined amount of base load is met. The DGC-2020 controller (via the LSM-2020 load) in turn biases the engine governor to control the real load on the generator set.

Reactive load is also precisely shared between the paralleled generator set and the utility power source. When the generator set circuit breaker is first connected, the generator set produces a negligible amount of reactive power. The LSM-2020 load share module will bias the voltage regulator to begin loading kVARs on the generator set at a predefined amount of load per second. Load will ramp onto the generator set until the user-defined amount of base load is met. Reactive base loading can be defined in either of two manners: percentage of VARs (leading or lagging) or Power Factor (PF) set point (- Leading / + Lagging). The DGC-2020 controller in turn biases the voltage regulator to control the reactive load on the generator set.

PARALLELING APPLICATION GUIDE

Base Loading with Utility



As the generator set is base loading against the utility power source, the DGC-2020 controller will constantly adjust to fluctuations in load and in the utility power source to maintain the base load level requested.

In the event that a generator experiences a fault while supporting the load, it will disconnect itself from the utility bus.

Termination of Base Loading Request to Generator Set

When the customer no longer wants the generator set to base load against the utility power source, the start request signal is removed. The DGC-2020 controller will bias the governor and voltage regulator to ramp load off of the generator set. Once the generator set is unloaded and has reached the pre-defined breaker open set point percentage, the circuit breaker will open. The generator set will enter a cool-down period, after which time the generator set will stop, re-enter standby mode, and await the next start request.

PARALLELING APPLICATION GUIDE

Base Loading with Utility

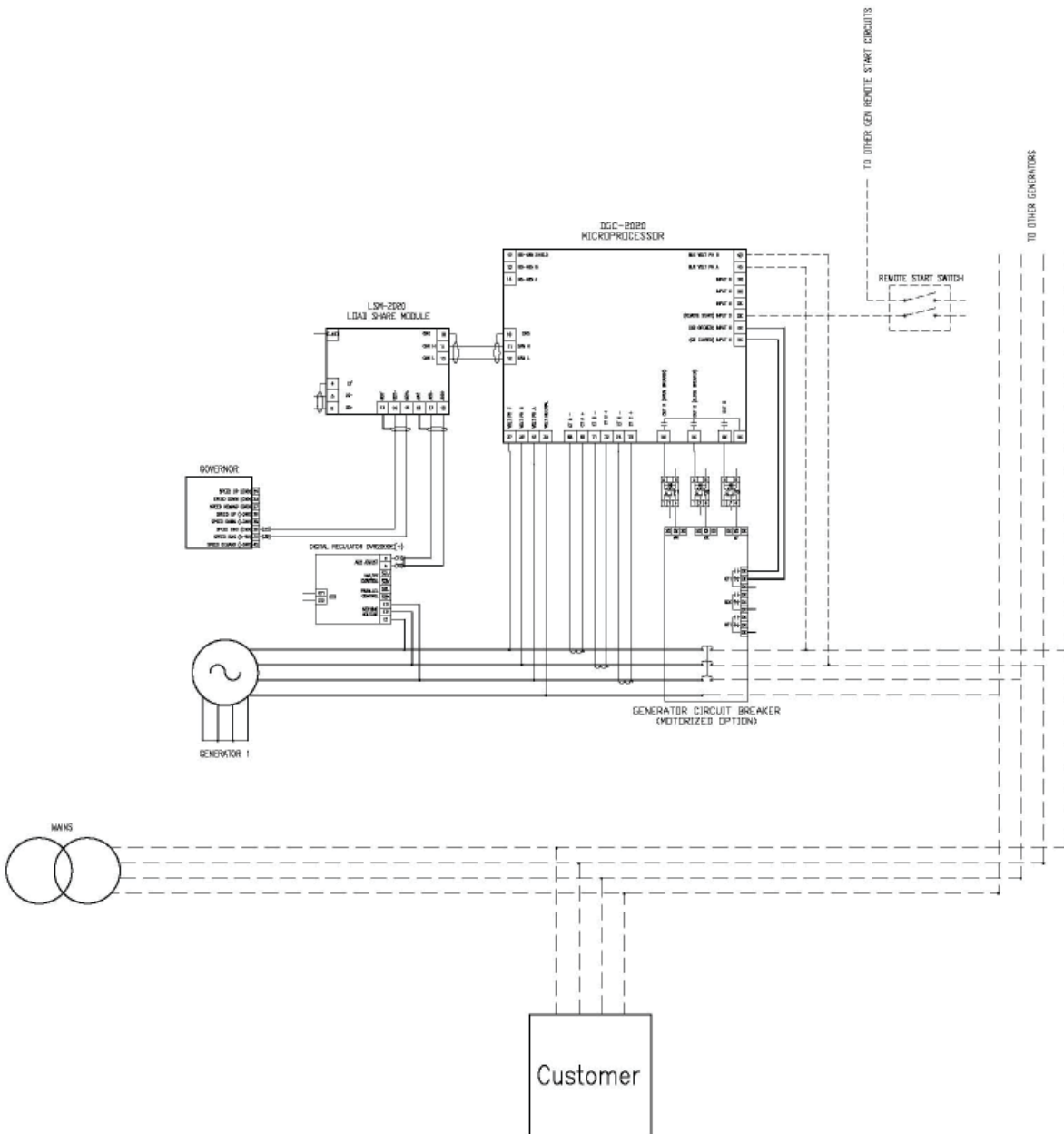


Figure 1: Base Loading with Utility

The dashed line (- -) denotes wiring/equipment supplied by a third party

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PARALLELING APPLICATION GUIDE

Generator to Generator in Island Operation



SCOPE

The purpose of this document is to define a specific paralleling scenario - paralleling MTU Onsite Energy generator sets with other MTU Onsite Energy generator sets in island operation. Additionally, this document is intended to expand on how MTU Onsite Energy can support this paralleling scenario with simple, integrated solutions.

DEFINITION(S)

Generator to Generator in Island Operation

Island refers to the application of the system. Generator to generator in island refers to an isolated system in which the generator sets will not be paralleled with any source other than the generator sets within the system. The generator sets will be connected to a common bus.

Automatic Transfer Switch (ATS)

An automatic transfer switch connects an electrical load to either of two different sources. Typically, one source is considered Normal, and the other source is considered Emergency. The ATS has the ability to sense the stability and availability of either source and can issue transference of load between either source.

Master Control Panel (MCP)

A master control panel is a third party device responsible for monitoring ATS start requests, issuing transfer inhibits and load priority commands to the ATSs, adding and shedding loads, and issuing start requests to generator sets.

DGC-2020 System Manager

The DGC-2020 system manager is a standard DGC-2020 controller with the lowest, non-zero sequencing ID. This controller is responsible for dead bus arbitration between generator sets. The system manager can be one of any controllers in the generator set system.

Intergenset Communication Network

The intergenset communications network consists of generator set load share modules connected together via Cat5 cable and an industrial ethernet switch. Dead bus arbitration, generator set sequencing, and load sharing commences between generator sets over this network.

ABBREVIATED SEQUENCE OF OPERATION

1. Instability or failure of the Normal Power source is detected by the ATS controllers.
 - 1.1 ATS controllers send start requests to the MCP.
 - 1.2 MCP sends individual start requests to the group of generator sets.
 - 1.3 Generator sets start and build rated voltage and frequency.
 - 1.4 Dead bus arbitration commences between the generator sets through the intergenset communication network.
 - 1.4.1 The DGC-2020 system manager grants to the first generator set that reaches the voltage and frequency thresholds the permission to close to the dead bus.
 - 1.4.2 All off-line generator sets at this time are inhibited from closing their circuit breakers to the bus until voltage is sensed.
 - 1.4.3 The highest priority ATS transfers to Emergency power when voltage and frequency are within the ATS controller thresholds.
 - 1.4.4 The remaining off-line generator sets synchronize and close to the live generator bus.
- 1.5 The remaining ATSs wait for release of transfer inhibit from the MCP before connecting to Emergency power. The MCP monitors the bus and the number of generator sets online to ensure that there are enough generator sets connected to the bus to support the load requirements.
- 1.6 Online generator sets actively share load via the intergenset communications network.

PARALLELING APPLICATION GUIDE

Generator to Generator in Island Operation



2. ATS controllers detect when the Normal power source has returned to stable conditions, and all delay timers have expired.
 - 2.1 ATSS return to Normal position, removing start signals to the MCP.
 - 2.2 MCP removes all start requests for Emergency power from the generator sets.
 - 2.3 The generator sets open their respective circuit breakers (disconnecting from the generator bus).
 - 2.4 The generator sets enter a DGC-2020 controller appointed cool-down period.
 - 2.5 The group of generator sets stop, return to standby, and await the next start request.

SYSTEM OPERATION

- Real power load sharing (via intergenset communication network)
- Reactive power load sharing (via intergenset communication network)
- Dead bus arbitration

PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY MTU ONSITE ENERGY)

- DGC-2020 controller (automatic synchronization)
- Meter current transformers (CTs) and potential transformer (PT) (as needed)
- LSM-2020 load sharing module
- Permanent Magnet Generator (PMG)
 - DVR2000E(+) digital voltage regulator (standard)
 - DVR2000EC digital voltage regulator (optional)
- Motor-operated generator circuit breaker (may or may not be mounted to the generator set)*
 - Shunt trip
 - Shunt close
 - Auxiliary switch (breaker position)
 - Motorized spring charger

**If a circuit breaker is selected, MTU Onsite Energy will supply a motor-operated breaker of the indicated configuration.*

ADDITIONAL PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY THIRD PARTY)

- Master Control Panel (MCP) with connections for monitoring ATS start requests, issuing transfer inhibits and load priority commands to ATSS, adding and shedding loads, and issuing start requests to generator sets
- Automatic transfer switch(es) (ATS), paralleling switchgear, circuit breakers, and/or disconnects
- Paralleling bus and cabling
- Start signal source connection to generator sets
- Main bus sensing connection to generator sets
- Industrial Ethernet switch for intergenset communications network
- Cat5 cable connection from Ethernet switch to all generator sets for intergenset communications network

PROGRAMMING AND LOGIC

- Basic programming and logic will be provided to start, synchronize, and load share with other MTU Onsite Energy supplied generator sets.
- Site programming and system tuning are required by the customer for proper onsite operation.
- MCP integration and programming are required by the customer for proper onsite operation.

PARALLELING APPLICATION GUIDE

Generator to Generator in Island Operation



SEQUENCE OF OPERATION

Failure of Normal Power Source and Start Request to Emergency Power System

All ATS controllers monitor both Normal and Emergency power sources. Unless programmed otherwise, the ATSs will always be connected to the Normal source. When the voltage or frequency of the Normal source does not meet the predefined voltage and frequency thresholds, each ATS controller sends a start request signal to the MCP. The MCP then issues individual start requests to every unit in the group of generator sets composing the emergency power system. The start signal to each generator set is a command for the generator sets to start, synchronize to the generator bus, close their circuit breakers, and load share. All available generator sets will start and achieve nominal frequency and voltage.

Dead Bus Arbitration

Dead bus arbitration between generator sets commences via the intergenset communication network to ensure that two or more generator sets do not close their circuit breakers to the dead bus at the same time out of phase. The DGC-2020 system manager (the DGC-2020 controller with the smallest non-zero sequencing ID) negotiates the dead bus arbitration. The first generator set to reach the voltage and frequency thresholds (adjustable from 85-95%) within the system requests permission to close its circuit breaker and is granted permission by the DGC-2020 system manager to close to the dead bus. When this permission is given, all other generator sets are inhibited from closing to the dead bus and will not attempt to close to the bus until voltage and frequency are present and meet the predefined voltage and frequency thresholds.

Synchronization of Generator Sets

The DGC-2020 controllers on the remaining off-line generator sets utilize the LSM-2020 load share module to bias their DVR2000E(+) regulators and governors to match their speed and voltage to the generator bus. The LSM-2020 biases the speed of the engine governor to drive the difference between the phase angle of the generator set and the phase angle of the generator bus to zero. Additionally, the LSM-2020 biases the voltage regulator to match the generator set voltage to the generator bus voltage. When the synchronization window criteria are met, the generator set is considered synchronized with the generator bus, and the DGC-2020 controller issues a command to close its breaker. Once its breaker is closed and the DGC-2020 receives “breaker closed” feedback from the circuit breaker auxiliary switch, the generator set is considered paralleled. The LSM-2020 no longer actively attempts to synchronize the generator set. The phase and voltage window are adjustable to allow synchronization to happen more aggressively (quickly) or passively (slowly) to meet all customer-defined requirements. Additionally, the DGC-2020 synchronizer can be configured for two different modes: 1) phase lock loop synchronization for breakers that take longer to close (30 cycles after command is issued), and 2) anticipatory synchronization for reduced synchronization time and breakers that close quickly (five cycles after command is issued).

Load Sharing

While paralleled, generator sets are electrically interlocked and will share real load (kW) and reactive load (kVAR) with other paralleled generator sets. Real load is shared between paralleled generator sets via the intergenset communications network. Generator sets that have closed their circuit breakers to the generator bus broadcast their real power capacity and real power production over the intergenset communications network. The LSM-2020s divide the real power production of the system by the real power capacity of the system to produce a unitized percentage of real power to be shared by the connected generator (R. Glenn, Basler Electric). Based on this unitized percentage, the DGC-2020 controller biases the engine governor to control the real load on the generator sets.

This method of sharing load does not require an analog load share line between generator sets which is commonly required in paralleling applications. Additionally, the unitized percentage power calculation allows generator sets of different sizes to share load proportionate to their capacities. Reactive load is shared between paralleled generator sets via the intergenset communications network. The generator sets that have closed their breakers to the generator bus broadcast their reactive power capacity and current reactive power production over the intergenset communications network. The LSM-2020s divide the reactive power production of the system by

PARALLELING APPLICATION GUIDE

Generator to Generator in Island Operation



the reactive power capacity of the system to produce a unitized percentage of reactive power to be shared by the connected generator sets (R. Glenn, Basler Electric). Based on this unitized percentage, the DGC-2020 controller biases the voltage regulator to control the reactive load on the generator sets.

Typically, generator sets that are paralleled together require voltage droop or a cross-current compensation loop to produce reactive power proportionately. Also, it is common for the voltage in these types of systems to droop below nominal, which is not ideal for some loads. However, by controlling reactive power production via the intergenset communication network, MTU Onsite Energy generator sets do not require the system to run in voltage droop and do not require an additional B phase droop current transformer (CT). This results in a generator set system that is easy to interface and has precise control over reactive power production.

Emergency System Operation

As generator sets connect and become available to the generator bus, the ATS controllers sense that the Emergency source is available. The MCP will begin to release the transfer inhibit contacts to the ATS controllers that are servicing priority loads, and these ATSS will transfer loads from the Normal source to the Emergency source. As available power on the generator bus increases (amount of available power is determined by the sum of each online generator set's kW rating), the MCP will release the transfer inhibit contacts to the ATS controllers servicing lower priority loads.

The generator sets support the loads as long as the Normal source is unavailable or does not meet the acceptance thresholds for voltage and frequency. The ATS controllers will continuously monitor Normal source voltage and frequency. Normal source is the preferred power source. If available during non-test procedures, an ATS will connect the loads to the Normal source.

In the event that a generator set experiences a fault while supporting the load, it will disconnect itself from the generator bus. The MCP will determine if there are still enough generator sets online to support the load and will shed a low priority load if necessary to adjust the bus load.

Restoration of Normal Power Source

When the Normal source returns, the ATS controllers sense availability of the Normal source, and all delays have expired (adjustable), the ATS controllers will transfer the ATSS to the Normal source position and remove their start request signals to the MCP. The generator sets remain paralleled and connected to the common bus until all ATSS have transferred back to the Normal source. Once all load has been transferred to the Normal source, the MCP will remove the individual start request signals from all generator sets. The generator sets will open their circuit breakers and enter a DGC-2020 controller-appointed cool-down period (adjustable), after which time they stop, re-enter standby mode, and await the next start request.

PARALLELING APPLICATION GUIDE

Generator to Generator in Island Operation

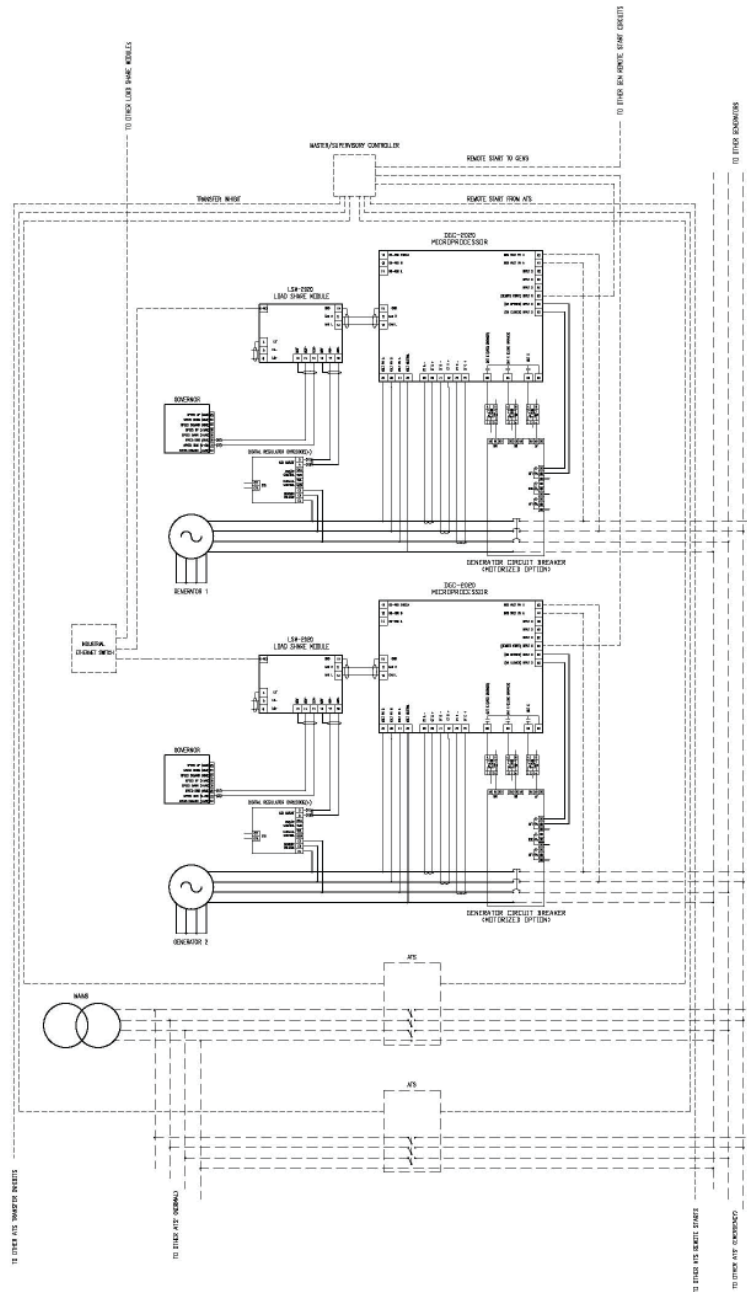


Figure 1: Generator to Generator in Island Operation (MTU Onsite Energy generator sets only)

The dashed line (- -) denotes wiring/equipment supplied by a third party

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PARALLELING APPLICATION GUIDE

Generator to Generator with Utility



SCOPE

The purpose of this document is to define a specific paralleling scenario - paralleling MTU Onsite Energy generator sets with other MTU Onsite Energy generator sets and synchronizing the system of generator sets to a utility power source. Additionally, this document is intended to expand on how MTU Onsite Energy can support this paralleling scenario with simple, integrated solutions.

DEFINITION(S)

Generator to Generator with Utility:

Generator to generator with utility refers to the application of the system. Generator to generator with utility refers to a system in which the generator sets will be paralleled with other generator sets on a common bus and then synchronized to another power source other than the remaining generator sets within the system.

Automatic Transfer Switch (ATS):

An automatic transfer switch connects an electrical load to either of two different sources. Typically, one source is considered Normal, and the other source is considered Emergency. ATSs have the ability to sense the stability and availability of either source and can issue transference of load between either source.

Master Control Panel (MCP):

A master control panel is a third party device responsible for monitoring ATS start requests, issuing transfer inhibits and load priority commands to ATSs, adding and shedding loads, issuing start requests to generator sets, and synchronizing the generator sets to another power source.

DGC-2020 System Manager:

The DGC-2020 system manager is a standard DGC-2020 controller with the lowest, non-zero sequencing ID. This controller is responsible for dead bus arbitration between generator sets. The system manager can be one of any controllers in the generator set system.

Intergenset Communication Network:

The intergenset communication network consists of generator set load share modules connected together via Cat5 cable and an industrial ethernet switch. Dead bus arbitration, generator set sequencing, and load sharing commences between generator sets over this network.

ABBREVIATED SEQUENCE OF OPERATION

1. Instability or failure of the Normal power source is detected by the ATS controllers.
 - 1.1 ATS controllers send start requests to the MCP.
 - 1.2 MCP sends individual start requests to the group of generator sets.
 - 1.3 Generator sets start and build rated voltage and frequency.
 - 1.4 Dead bus arbitration commences between the generator sets through the intergenset communication network.
 - 1.4.1 The DGC-2020 system manager grants to the first generator set that reaches the voltage and frequency thresholds the permission to close to the dead bus.
 - 1.4.2 All off-line generator sets, at this time, are inhibited from closing their circuit breakers to the bus until voltage is sensed.
 - 1.4.3 The highest priority ATS transfers to Emergency power when voltage and frequency are within the ATS controller thresholds.
 - 1.4.4 The remaining off-line generator sets synchronize and close to the live generator bus.
- 1.5 The remaining ATSs wait for release of transfer inhibit from the MCP before connecting to Emergency power. The MCP monitors the bus and the number of generator sets online to ensure that there are enough generator sets connected to the bus to support the load requirements.
- 1.6 Online generator sets actively share load via the intergenset communications network and analog load share line.

PARALLELING APPLICATION GUIDE

Generator to Generator with Utility



2. ATS controllers detect Normal power source has returned to stable conditions, and all delay timers have expired.
 - 2.1 The MCP synchronizes the generator set bus to the Normal power source.
 - 2.2 ATSS return to Normal position, removing start signals to the MCP.
 - 2.3 MCP removes all start requests for Emergency power from the generator sets.
 - 2.4 The generator sets open their respective circuit breakers (disconnecting from the generator bus).
 - 2.5 The generator sets enter a DGC-2020 controller-appointed cool-down period.
 - 2.6 The group of generator sets stops, returns to standby, and awaits the next start request.

SYSTEM OPERATION

- Real power load sharing (via load share line)
- Reactive power load sharing (via intergenset communication network)
- Dead bus arbitration
- Synchronization to other power source

PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY MTU ONSITE ENERGY)

- DGC-2020 controller (automatic synchronization)
- Meter current transformers (CTs) and potential transformer (PT) (as needed)
- LSM-2020 load sharing module
- Permanent Magnet Generator (PMG)
 - DVR2000E(+) digital voltage regulator (standard)
 - DVR2000EC digital voltage regulator (optional)
- Motor-operated generator circuit breaker (may or may not be mounted to the generator set)*
 - Shunt trip
 - Shunt close
 - Auxiliary switch (breaker position)
 - Motorized spring charger

**If a circuit breaker is selected, MTU Onsite Energy will supply a motor-operated breaker of the indicated configuration.*

ADDITIONAL PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY THIRD PARTY)

- Master Control Panel (MCP) with connections for monitoring ATS start requests, issuing transfer inhibits and load priority commands to ATSS, adding and shedding loads, issuing start requests to generator sets, and load sharing (for synchronizing the generator sets to another power source)
- ATSS, paralleling switchgear, circuit breakers, and/or disconnects
- Paralleling bus and cabling
- Start signal source connection to generator sets
- Main bus sensing connection to generator sets
- Industrial Ethernet switch for intergenset communications network
- Cat5 cable connection from Ethernet switch to all generator sets for intergenset communications network
- Load share line between all generator sets and MCP

PROGRAMMING AND LOGIC

- Basic programming and logic will be provided to start, synchronize, and load share with other MTU Onsite Energy supplied generator sets.
- Site programming and system tuning are required by the customer for proper onsite operation.
- MCP integration and programming are required by the customer for proper onsite operation.

PARALLELING APPLICATION GUIDE

Generator to Generator with Utility



SEQUENCE OF OPERATION

Failure of Normal Power Source and Start Request to Emergency Power System

All ATS controllers monitor both Normal and Emergency power sources. Unless programmed otherwise, the ATSs will always be connected to the Normal source. When the voltage or frequency of the Normal source does not meet the predefined voltage and frequency thresholds, each ATS controller sends a start request signal to the MCP. The MCP will then issue individual start requests to every unit in the group of generator sets composing the emergency power system. The start signal to each generator set is a command for the generator sets to start, synchronize to the generator bus, close their circuit breakers, and load share. All available generator sets will start and achieve nominal frequency and voltage.

Dead Bus Arbitration

Dead bus arbitration between generator sets commences via the intergenset communication network to ensure that two or more generator sets do not close their circuit breakers to the dead bus at the same time out of phase. The DGC-2020 system manager (the DGC-2020 controller with the smallest non-zero sequencing ID) negotiates the dead bus arbitration. The first generator set to reach the voltage and frequency thresholds (adjustable from 85-95%) within the system requests permission to close its circuit breaker and is granted permission by the DGC-2020 system manager to close to the dead bus. When this permission is given, all other generator sets are inhibited from closing to the dead bus and will not attempt to close to the bus until voltage and frequency are present and meet the predefined voltage and frequency thresholds.

Synchronization of Generator Sets

The DGC-2020 controllers on the remaining off-line generator sets utilize the LSM-2020 load share module to bias their DVR2000E(+) regulators and governors to match their speed and voltage to the generator bus. The LSM-2020 biases the speed of the engine governor to drive the difference between the phase angle of the generator set and the phase angle of the generator bus to zero. Additionally, the LSM-2020 biases the voltage regulator to match the generator set voltage to the generator bus voltage. When the synchronization window criteria are met, the generator set is considered synchronized with the generator bus, and the DGC-2020 controller issues a command to close its circuit breaker. Once its circuit breaker is closed and the DGC-2020 receives "breaker closed" feedback from the circuit breaker auxiliary switch, the generator set is considered paralleled. The LSM-2020 no longer actively attempts to synchronize the generator set. The phase and voltage window are adjustable to allow synchronization to happen more aggressively (quickly) or passively (slowly) to meet all customer-defined requirements. Additionally, the DGC-2020 synchronizer can be configured for two different modes: 1) phase lock loop synchronization for breakers that take longer to close (30 cycles after command is issued), and 2) anticipatory synchronization for reduced sync time and breakers that close quickly (five cycles after command is issued).

Load Sharing

While paralleled, generator sets are electrically interlocked and will share real load (kW) and reactive load (kVAR) with other paralleled generator sets. Real load is shared between paralleled generator sets via the load share line. Generator sets that have closed their breakers to the generator bus drive the load share line with a voltage that is proportional to its percentage of load. The load share line voltage is measured, scaled, and fed by the LSM-2020 load share module; thus, each LSM-2020 is driving the kW output of the generator set to a level equal to the average percentage kW load of the system (R. Glenn, Basler Electric). Based on the load share line voltage, the DGC-2020 controller biases the engine governor to control the real load on the generator sets.

The load share line allows generator sets of different sizes to share load proportionate to their capacities. Additionally, when a load share line is employed, other system devices such as an MCP can interface directly to the generator set system to control the system frequency or synchronize the system to another source of power.

Reactive load is shared between paralleled generator sets via the intergenset communications network. Generator sets that have closed their breakers to the generator bus broadcast their reactive power capacity and current reactive power production over the intergenset communications network. The LSM-2020s divide the reactive power production of the system by the reactive power capacity of the system to produce a unitized percentage of reactive power to be shared by the connected generator sets (R. Glenn, Basler Electric). Based on

PARALLELING APPLICATION GUIDE

Generator to Generator with Utility



this unitized percentage, the DGC-2020 controller biases the voltage regulator to control the reactive load on the generator set.

Typically, generator sets that are paralleled together require voltage droop or a cross-current compensation loop to produce reactive power proportionately. Also, it is common for the voltage in these types of systems to droop below nominal, which is not ideal for some loads. However, by controlling reactive power production via the intergenset communication network, MTU Onsite Energy generator sets do not require the system to run in voltage droop and do not require an additional B phase droop CT. This results in a generator set system that is easy to interface and has precise control over reactive power production.

Emergency System Operation

As generator sets connect and become available to the generator bus, the ATS controllers sense that the Emergency source is available. The MCP will begin to release the transfer inhibit contacts to the ATS controllers that are servicing priority loads, and these ATSs will transfer loads from the Normal source to the Emergency source. As available power on the generator bus increases (amount of available power is determined by the sum of each online generator set's kW rating), the MCP will release the transfer inhibit contacts to the ATS controllers servicing lower priority loads.

The generator sets support the loads as long as the Normal source is unavailable or does not meet the acceptance thresholds for voltage and frequency. The ATS controllers will continuously monitor Normal source voltage and frequency. Normal source is the preferred power source. If available during non-test procedures, an ATS will connect the loads to the Normal source.

In the event that a generator set experiences a fault while supporting the load, it will disconnect itself from the generator bus. The MCP will determine if there are still enough generator sets online to support the load and will shed a low priority load if necessary to adjust the bus load.

Restoration of Normal Power Source

When the Normal source returns and the ATS controllers sense availability of the Normal source, the MCP will synchronize the generator bus to the Normal source. The MCP will bias the generator set load share line to drive the difference between the phase angle of the generator set and the phase angle of the Normal source to zero. When all delays have expired (adjustable), the ATS controllers will transfer the ATSs to the Normal source position and remove their start request signals to the MCP. The generator sets remain paralleled and connected to the common bus until all ATSs have transferred back to the Normal source. Once all load has been transferred to the Normal source, the MCP will remove the individual start request signals from all generator sets. The generator sets will open their circuit breakers and enter a DGC-2020 controller-appointed cool-down period (adjustable), after which time they stop, re-enter standby mode, and await the next start request.

PARALLELING APPLICATION GUIDE

Generator to Generator with Utility

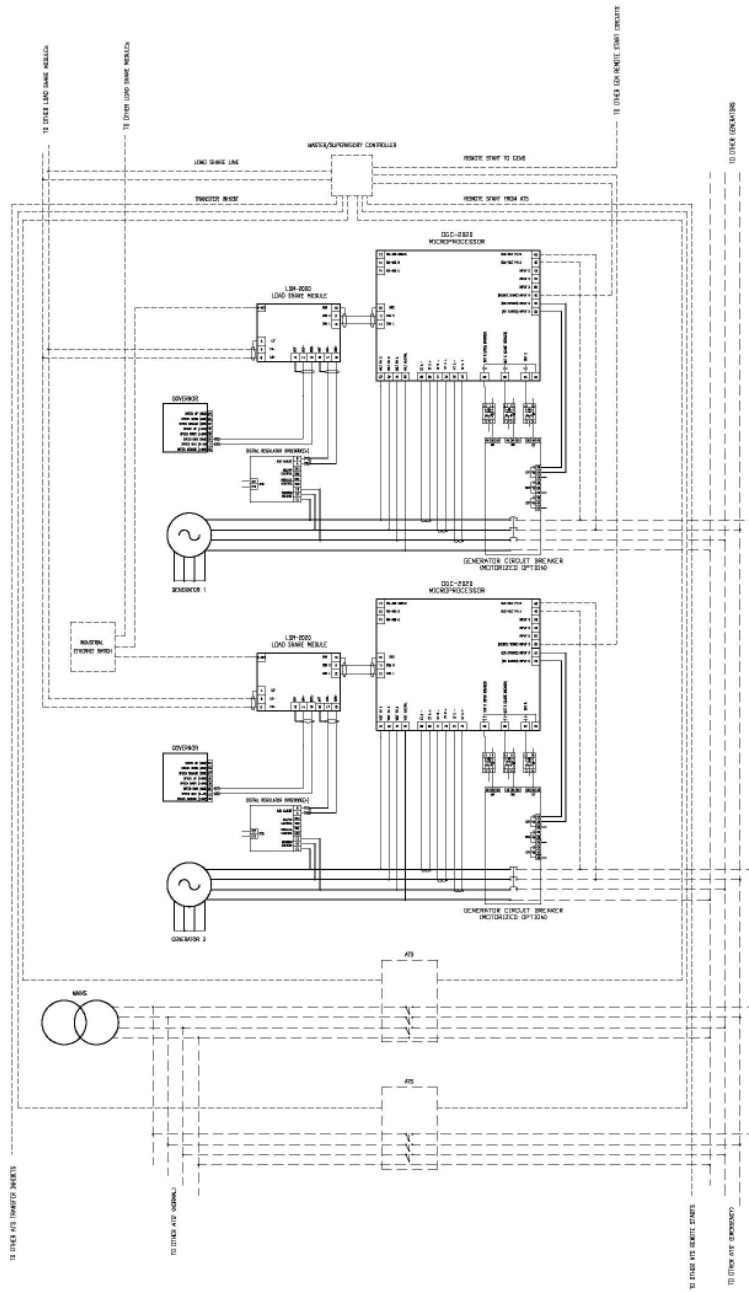


Figure 1: Generator to Generator with Utility (MTU Onsite Energy generator sets only)

The dashed line (- -) denotes wiring/equipment supplied by a third party

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PARALLELING APPLICATION GUIDE

Paralleling without MTU Onsite Energy Components



SCOPE

The purpose of this document is to define a specific paralleling scenario - paralleling MTU Onsite Energy generator sets without MTU Onsite Energy supplied or supported components.

DEFINITION(S)

Paralleling without MTU Onsite Energy Components

Paralleling without MTU Onsite Energy components refers to the application of a system in which generator sets will be paralleled without MTU Onsite Energy supplied or supported components.

ABBREVIATED SEQUENCE OF OPERATION

None indicated. Sequence of operation to be specified by customer.

SYSTEM OPERATION

None indicated. System operation to be specified by customer.

PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY MTU ONSITE ENERGY)

Generator set voltage bias and speed bias contacts will be provided for customer connection.

ADDITIONAL PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY THIRD PARTY)

- Synchronizing and load sharing controller
- ATs, paralleling switchgear, circuit breakers, and/or disconnects
- Paralleling bus and cabling
- Start signal source connection to generator sets

PROGRAMMING AND LOGIC

- Basic programming and logic will be provided to start and operate generator set
- Site programming and system tuning are required by the customer for proper onsite for operation

SEQUENCE OF OPERATION

None indicated. Sequence of operation to be specified by customer.

PARALLELING APPLICATION GUIDE

Paralleling without MTU Onsite Energy Components

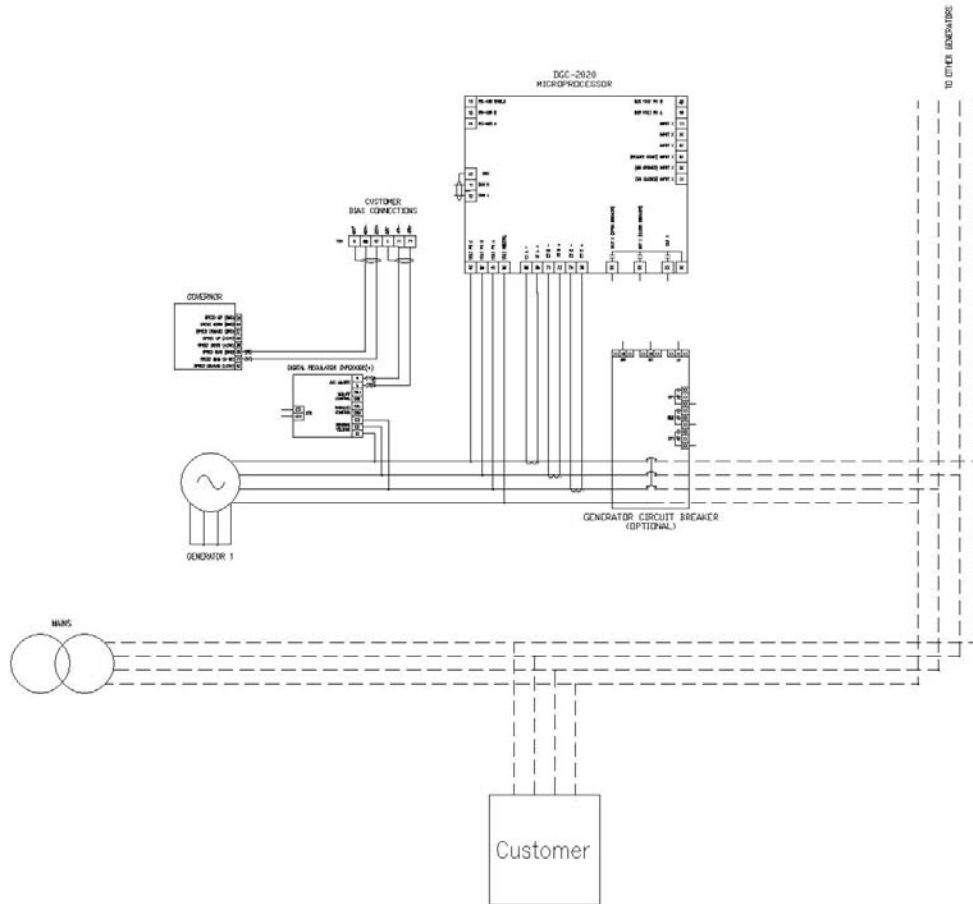


Figure 1: Paralleling without MTU Onsite Energy Components

The dashed line (- -) denotes wiring/equipment supplied by a third party

PARALLELING APPLICATION GUIDE

Peak Shaving with Utility



SCOPE

The purpose of this document is to define a specific paralleling scenario - paralleling MTU Onsite Energy generator sets with a utility power source. Additionally, this document is intended to expand on how MTU Onsite Energy can support this paralleling scenario with simple, integrated solutions.

DEFINITION(S)

Peak Shaving with Utility Operation

Peak shaving refers to the application of the system in which the generator set will parallel to a utility power source to subsidize customer load requirements while still maintaining the contractually agreed limit of power supplied by the utility power source. Typically, this is for the purpose of avoiding excess electrical demand charges.

ELECTRICAL DEMAND CONTROLLER (EDC)

An electrical demand controller is a third-party device responsible for monitoring electrical demand from utility, issuing start requests to generator sets, and biasing generator sets to control the amount of electrical demand on a utility power source.

ABBREVIATED SEQUENCE OF OPERATION

1. EDC senses that electrical demand on the utility power source has exceeded the customer-defined threshold, and all timers have elapsed.
 - 1.1 EDC issues the start request to the generator set.
 - 1.2 The generator set starts and builds rated voltage and frequency.
 - 1.3 The generator set synchronizes and closes to the utility power source.
 - 1.4 The EDC monitors the electrical demand on the utility power source and biases the generator set in proportion to the amount of load that must be shaved from the utility power source.
 - 1.5 The generator set begins to ramp on resistive and reactive load in proportion to a bias signal provided by the EDC.
 - 1.6 Regardless of fluctuations in the utility power source or building load, the EDC will constantly make adjustments to the bias signal to the generator set to maintain the agreed electrical demand on the utility power source to avoid peak demand charges.
2. EDC senses that electrical demand on the utility power source has fallen below the customer-defined threshold, and all timers have elapsed.
 - 2.1 EDC removes the start request from the generator set.
 - 2.2 The generator set sheds load until it produces very little power.
 - 2.3 After unloading, the generator set opens its breaker and disconnects from the utility power source.
 - 2.4 The generator set enters a DGC-2020 controller appointed cool-down period.
 - 2.5 The generator set stops, returns to standby and awaits the next start request.

SYSTEM OPERATION

- Real power load sharing
- Reactive power load sharing

PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY MTU ONSITE ENERGY)

- DGC-2020 controller (automatic synchronization)
- Meter current transformers (CTs) and potential transformer (PT) (as needed)
- LSM-2020 load sharing module
- Permanent Magnet Generator (PMG)
 - DVR2000E(+) digital voltage regulator (standard)
 - DVR2000EC digital voltage regulator (optional)

PARALLELING APPLICATION GUIDE

Peak Shaving with Utility



- Motor-operated generator circuit breaker (may or may not be mounted to the generator set)*
 - Shunt trip
 - Shunt close
 - Auxiliary switch (breaker position)
 - Motorized spring charger

**If a circuit breaker is selected, MTU Onsite Energy will supply a motor-operated breaker of the indicated configuration.*

ADDITIONAL PARALLELING CONTROLS, EQUIPMENT, AND INTERFACING (SUPPLIED BY THIRD PARTY)

- Electrical Demand Controller (EDC) with connections for monitoring electrical demand from utility, issuing start requests to generator set, and biasing generator set to control the amount of electrical demand on a utility power source
- Paralleling switchgear, circuit breakers, and/or disconnects
- Electrical demand controller with bias capabilities
- Paralleling bus and cabling
- Start signal source connection to generator set
- Utility bus sensing connection to generator set

PROGRAMMING AND LOGIC

- Basic programming and logic will be provided to start, synchronize, and accept a bias signal to peak shave with the utility power source from the EDC.
- Site programming and system tuning are required by the customer for proper onsite operation.

OTHER SYSTEM CONSIDERATIONS

- For generator sets used in non-emergency applications within EPA regulated areas, Tier 4i/T4 Final certified engines must be used.

SEQUENCE OF OPERATION

Peak Shaving Request to Generator Set

The EDC monitors the electrical demand on the utility power source. When electrical demand exceeds a customer-defined threshold (adjustable) and all applicable delay timers have elapsed, the EDC will issue a start request to the generator set. The start request is a command for the generator set to start, synchronize to utility power source, and close its circuit breaker. All available generator sets will start and achieve nominal frequency and voltage.

Synchronization of Generator Set

The DGC-2020 controller on the off-line generator set utilizes the LSM-2020 load share module to bias its DVR2000E(+) regulator and governor to match its speed and voltage to the utility bus. The LSM-2020 biases the speed of the engine governor to drive the difference between the phase angle of the generator set and the phase angle of the utility bus to zero. Additionally, the LSM-2020 biases the voltage regulator to match the generator set voltage to the utility bus voltage. When the synchronization window criteria are met, the generator set is considered synchronized with the utility bus, and the DGC-2020 controller issues a command to close its circuit breaker. Once its circuit breaker is closed and the DGC-2020 controller receives “breaker closed” feedback from the circuit breaker auxiliary switch, the generator set is considered paralleled. The LSM-2020 no longer actively attempts to synchronize the generator set.

PARALLELING APPLICATION GUIDE

Peak Shaving with Utility



Peak Shaving

While paralleled, the generator set is electrically interlocked and will share real load (kW) and reactive load (kVAR) with the utility power source based on a bias signal supplied by the EDC. When the generator set circuit breaker is first connected, the generator set is producing a negligible amount of real power. The EDC will begin to bias the LSM-2020 load share module while the LSM-2020 in turn biases the engine governor to begin loading kW on the generator set with respect to the bias signal from the EDC. Load will ramp onto the generator set until the generator set has shaved enough load off of utility to avoid excess demand charges to the customer.

Reactive load is also precisely shared between the paralleled generator set and the utility power source. When the generator set circuit breaker is first connected, the generator set produces a negligible amount of reactive power. The LSM-2020 load share module will bias the voltage regulator to begin loading kVARs onto the generator set in proportion to the amount of real power the generator set is producing. Load will ramp onto the generator set until the user-defined Power Factor (PF) set point is met.

As the generator set is peak shaving load off of the utility power source, the DGC-2020 controller (in response to the EDC bias signal) will constantly adjust to fluctuations in load and in the utility power source to ensure that electrical demand on the utility source does not exceed the contractually agreed limit.

If a generator set experiences a fault while peak shaving, it will disconnect itself from the utility bus.

Termination of Peak Shaving Request to Generator Set

When the EDC senses that electrical demand on utility has fallen below the customer-defined threshold and all applicable delay timers have elapsed, the EDC will reduce the bias signal to the LSM-2020 load share module. The DGC-2020 controller will bias the governor and voltage regulator to ramp load off of the generator set. Once the generator set is unloaded and has reached the pre-defined (adjustable) breaker open set point percentage, the EDC will remove the start request, and the generator set circuit breaker will open. The generator set will enter a cool-down period, after which time the generator set will stop, re-enter standby mode, and await the next start request.

PARALLELING APPLICATION GUIDE

Peak Shaving with Utility

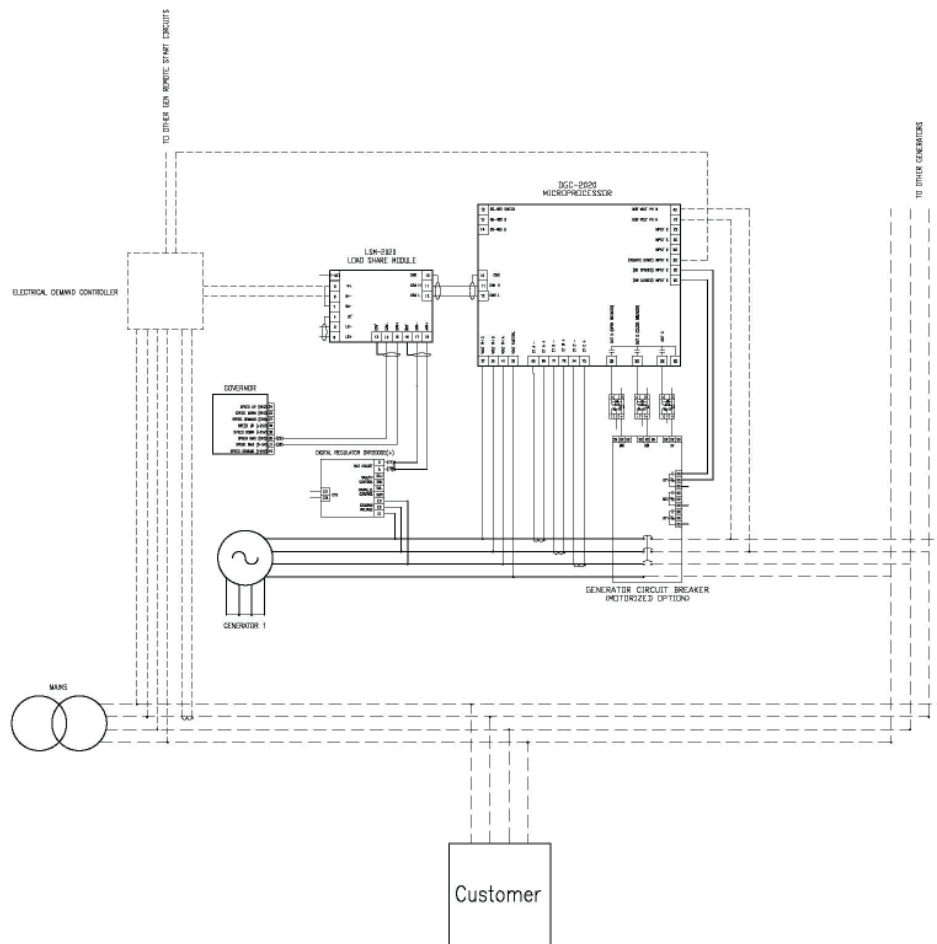


Figure 1: Peak Shaving with Utility

The dashed line (- -) denotes wiring/equipment supplied by a third party

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REMOTE DISPLAY PANEL

RDP-110 Data Sheet



HIGHLIGHTS

- Annunciation of 8 alarms and 7 pre-alarms as detected by the digital generator set controller (DGC)
- Four programmable LEDs via BESTlogic™ Plus
- RS-485 communications reduces the number of interconnection wires to four
- Interconnect distance up to 4000 ft
- UL recognized
- CSA certified



DESCRIPTION

The RDP-110 is a remote annunciation device used in conjunction with the DGC family of digital generator set controllers to provide remote annunciation of the emergency standby generator system. This panel allows for two programmable alarms, two programmable pre-alarms, and is compatible with NFPA 110. The DGC detects an alarm or pre-alarm condition and communicates via RS-485 to the RDP-110. The RDP-110 is available in two mounting configurations, surface and semi-flush mount.

STANDARD FEATURES

- (8) LED Alarms
 - Low coolant level
 - Low oil pressure
 - Engine overspeed
 - Fuel leak*
 - High coolant temperature
 - Engine overcrank
 - Emergency stop activated
 - Sender failure*
- (7) LED Pre-Alarms
 - High coolant temperature
 - Low oil pressure
 - Battery overvoltage*
 - Battery charger failure*
 - Low coolant temperature
 - Low fuel level
 - Weak battery
- (3) LED operating conditions
 - Switch not in auto
 - EPS supplying load
 - Display panel on
- Audible alarm horn rated at 80dB (from a distance of two feet)
- Lamp test and alarm silence
- Power supply inputs for 12, 24 VDC, or 120 VAC (at the RDP-110 location)
- Available in two mounting configurations: semi-flush and surface mounted.
- Conduit box included
- Designed for use in harsh environments

* Pre-configured, but can be reprogrammed and relabeled to match the function of the indicator

REMOTE DISPLAY PANEL

RDP-110 Data Sheet



SPECIFICATIONS

Power Input

- DC Voltage: 8-32 VDC (2.5W)
- AC Voltage: 84-144 VAC (5VA)

Isolation

- 1,800 VDC for one minute between chassis ground and AC voltage input.
- 700 VDC for one minute between any of the following groups: chassis ground, battery, AC voltage inputs

RFI (Radio Frequency Interference)

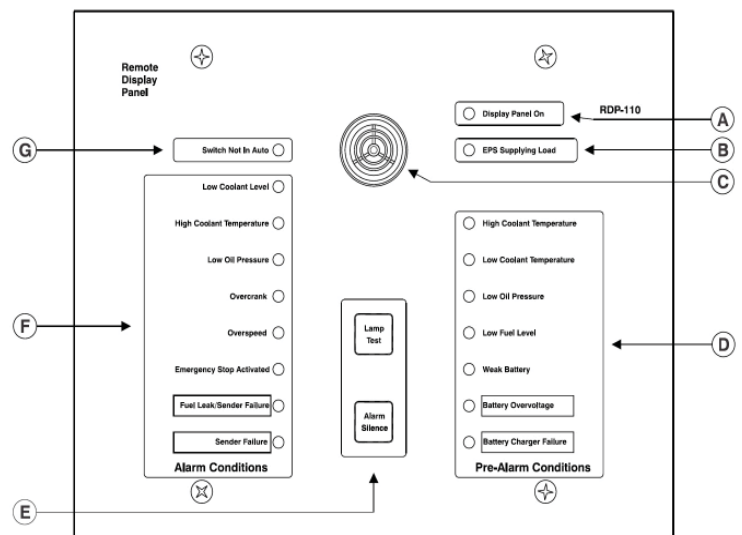
Type tested using 5 watt, handheld transceiver operating at random frequencies centered around 144MHz and 440MHz with the antenna located within six inches (15 centimeters) of the device in both vertical and horizontal planes.

Environmental and Physical

- Operating Temperature: -40 °C to 70 °C (-40 °F to 158 °F)
- Storage Temperature: -40 °C to 85 °C (-40 °F to 185 °F)
- Salt Fog: Qualified to ASTM 117B-1989
- Vibration: The device withstands 2g in each of the three mutually perpendicular planes, swept over the range of 10 to 500Hz for a total of six sweeps, 15 minutes each sweep, without structural damage or degradation of performance.
- Shock: 15g
- Weight: 6.5 lb (3 kg)
- Grounding: Twisted Pair Belden 9463 is grounded on the remote display side to earth ground.

PANEL DISPLAY

- A Green LED lights when power is applied to the RDP-110.
- B Green LED turns ON when the generator set is supplying more than 2% of rated load.
- C The horn sounds when an alarm or pre-alarm exists or the connected DGC is not operating in Auto mode.
- D Pre-Alarm LEDs light when the corresponding pre-alarm setting is exceeded.
- E RDP-110 controls consist of two pushbuttons. The Alarm Silence pushbutton silences the horn. The Lamp Test pushbutton can be used to verify operation of all RDP-110 LEDs and the horn.



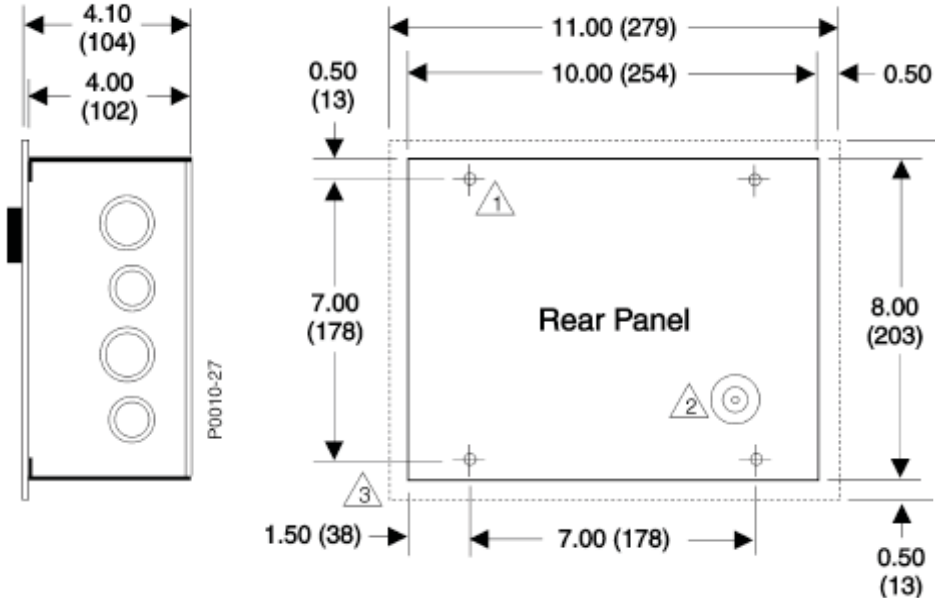
Front Panel Controls and Indicators

REMOTE DISPLAY PANEL

RDP-110 Data Sheet



DIMENSIONS



RDP-110 Mounting Dimensions

- △ Mounting hole diameter (4 places, on rear wall of enclosure) is 0.281 in. (7 mm).
- △ Grounding point is 10-31 threaded hole.
- △ Dashed line indicates outline of flush-mount panel.

Note: All dimensions are in inches (millimeters).

COMMERCIAL BATTERY

Data Sheet



Extra ruggedness and resistance to vibration, heat, chemicals, and physical abuse are built into every commercial battery that MTU Onsite Energy provides with their generator sets. The battery design features the latest in power storage technology as well as incorporates proven designs developed with the most experience in the business.

PRODUCT FEATURES

- **Case Design:** Tough, high-impact reinforced polypropylene case is heat sealed under extreme pressure to withstand heavy commercial service usage. This helps to prevent electrolyte leakage, improves reliability, and reduces breakage.
- **Internal Design:** Full-frame power path grids avoid sharp wires protruding through separators and directs the power straight to the lug for low resistance and higher cranking amps.
- **Terminals:** Standard terminals are solidly built preventing porosity, corrosion, black post, and harmful acid leaks.
- **Power Density:** Extra heavy-duty batteries deliver more cranking amps per pound.
- **Maintenance:** The battery uses pure de-mineralized electrolytes for reduced water loss, reduced gassing, longer battery life, and low maintenance.
- **Reliability:** Narrow ribs reduce separator corrosion to protect against shorts while deep-pocket envelopes dramatically improve reliability and extend service life.
- **Quality:** Over 250 quality control checks, combined with computer-aided design technology, provide a tough, durable battery in each commercial battery that MTU Onsite Energy provides with their generator sets.

BCI Group Size	Terminal Type	MTU Onsite Energy Part Number	Volt	Cranking Performance CCA (Cold Cranking Amps) -18° C / 0° F	Reserve Capacity	Overall Dimension							
						Length		Width		Height		Weight (Wet)	
						in	mm	in	mm	in	mm	lbs	kg
31	Post	120299	12	950	170	13	330	6.75	171	9.5	241	56.5	25.7
4D	Post	102493	12	1,050	290	20.75	527	8.5	216	10.125	258	99.5	45.2
8D	Post	102492	12	1,400	430	20.75	527	11	279	10	254	130.5	59.3

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BATTERY CHARGER

NRG Intelligent Engine Start Data Sheet



The Smart Choice for Mission-Critical Engine Starting:

- Fast, accurate, mission-critical charging gives best starting reliability
- 4-rate, temperature-compensated output offers longest battery life
- Replace nearly any charger without planning ahead
- Industry-first battery-fault alarm helps dispatch service early
- Lasting reliability – field MTBF > 1 million hours with industry-best warranty
- IBC seismic certification meets latest building codes, no installation



BENEFITS AND FEATURES

Failure to start due to battery problems is the leading cause of inoperable engine generator sets.

MTU Onsite Energy NRG battery charger maximizes starting system reliability while slashing generator set servicing costs:

- One NRG replaces almost any charger without extra site visits. Installers can select or change at any time 120, 208, or 240 volts AC input, 12 or 24-volt battery and output settings optimized for nearly any lead-acid or nickel cadmium battery.
- Easy to understand user interface provides state-of-the-art system status including digital metering, NFPA 110 alarms, and a battery fault alarm that can send service personnel to the site before failure to start.
- Batteries charged by NRG give higher performance and last longer. In uncontrolled environments, precision charging by MTU Onsite Energy increases battery life and watering intervals 400% or more.
- NRG meets all relevant industry standards – including UL, NFPA 110, and CE. Seismic Certification per International Building Code (IBC) 2000, 2003, 2006. All units are C-UL listed. 50/60 Hz units add CE marking to UL agency marks.

NRG reliability technology built into every charger includes:

- All-electronic operation with generous component de-rating
- Disconnected/reversed/incorrect voltage battery alarm and protection
- Protection of connected equipment against load dump transients
- Widest temperature rating and overtemperature protection
- Superior lightning and voltage transient protection
- Demonstrated field MTBF > 1 million hours
- Standard 3-year warranty (10 years magnetics and power semiconductors) and available 10-year complete warranty with reimbursement of field service costs

BATTERY CHARGER

NRG Intelligent Engine Start Data Sheet



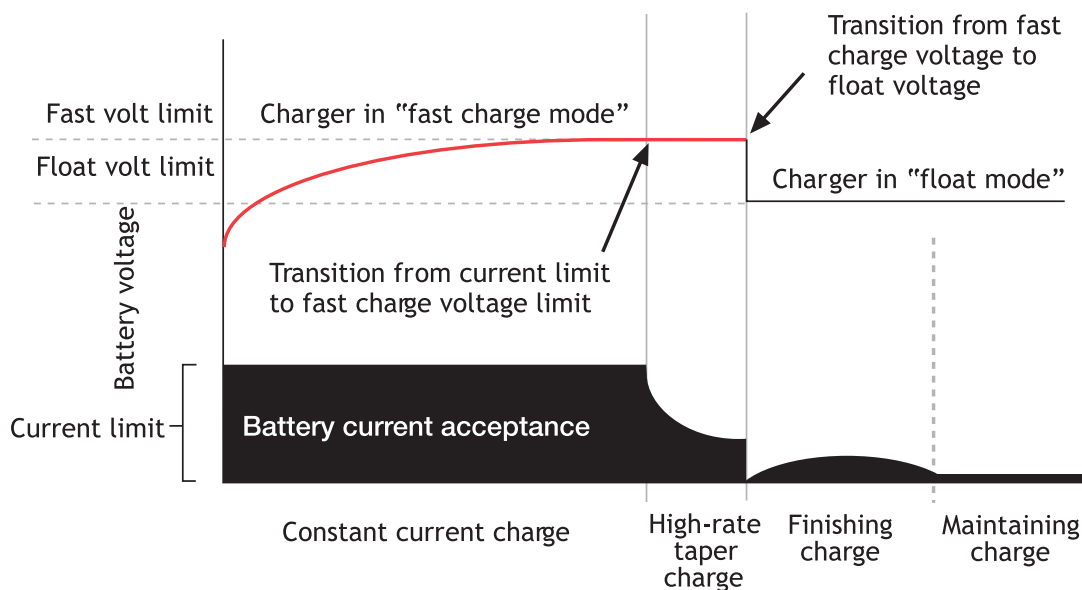
SPECIFICATIONS

AC Input

Voltage	110-120/208-240 VAC, ±10%, single phase, field selectable
Input current	10A charger: 6.6/3.3 amps maximum 20A charger: 12.6/6.3 amps maximum
Frequency	60 Hz ±5% standard; 50/60 Hz ±5% optional
Input protection	1-pole fuse, soft-start, transient suppression

Charger Output

Nominal voltage ratings	12 or 24 volt nominal
Optional voltage rating	12/24 volt, field selectable
Battery settings	Six discrete battery voltage programs - Low or high S.G. flooded - Low or high S.G. VRLA - Nickel cadmium 9, 10, 18, 19 or 20 cells
Regulation	±0.5% (1/2%) line and load regulation
Current	10 or 20 amps nominal
Electronic current limit	105% rated output typical—no crank disconnect required
Charge characteristic	Constant voltage, current limited, 4-rate automatic equalization
Temperature compensation	Enable or disable anytime, remote sensor optional
Output protection	Current limit, 1-pole fuse, transient suppression



BATTERY CHARGER


NRG Intelligent Engine Start Data Sheet



User Interface, Indication and Alarms

Digital meter Automatic meter alternately displays output volts, amps¹
 Accuracy ±2% volts, ±5% amp
 Alarms LED and Form C contact(s) per table:

	Alarm code "1" ²	Alarm Code "C" (meets requirements of NFPA 110)
AC good	LED	LED
Float mode	LED	LED
Fast charge	LED	LED
Temp comp active	LED	LED
AC fail	LED ⁴	LED and Form C contact
Low battery volts		LED and Form C contact
High battery volts		LED and Form C contact
Charger fail	LED ⁴	LED and Form C contact
Battery Fault ³	LED ⁴	LED and Form C contact



Front panel status display

- Three-position jumper allows user to select from three display settings: alternating volts / amps (normal), constant volts, or constant amps
- Alarms "1" available only on 10A charger
- Battery fault alarm indicates these fault conditions:
 - Battery disconnected - Battery polarity reversed - Mismatched charger battery voltage - Open or high resistance charger to battery connection
 - Open battery cell or excessive internal resistance
- Form C contact provides summary alarm of these conditions. BBHH chargers include this alarm configuration. Contacts rated 2A @ 30 VDC resistive

Controls

AC input voltage select	Field-selectable switch
Optional 12/24-volt output select	Field-selectable two-position jumper
Battery program select	Field-selectable six-position jumper
Meter display select	Field-selectable three-position jumper
Fast charger enable/disable	Field-selectable two-position jumper
Temp compensation enable	Standard. Can be disabled or re-enabled in the field
Remote temp comp enable	Connect optional remote sensor to temp comp port



Simple field adjustments

Environmental

Operating temperature	-20 °C to +60 °C, meets full specification to +45 °C
Over temperature protection	Gradual current reduction to maintain safe power device temperature
Humidity	5% to 95%, non-condensing
Vibration (10A unit)	UL 991 Class B (2G sinusoidal)
Transient immunity	ANSI/IEEE C62.41, Cat. B, EN50082-2 heavy industrial, EN 61000-6-2
Seismic Certification	IBC 2000, 2003, 2006 Maximum S _{ds} of 2.28 g

BATTERY CHARGER

NRG Intelligent Engine Start Data Sheet



Agency Standards

Safety	C-UL listed to UL 1236 (required for UL 2200 generator sets), CSA standard 22.2 no. 107.2-M89 CE: 50/60 Hz units DOC to EN 60335
Agency marking	60 Hz: C-UL-US listed 50/60 Hz: C-UL-US listed plus CE marked
EMC	Emissions: FCC Part 15, Class B; EN 50081-2 Immunity: EN 61000-6-2
NFPA standards	NFPA 70, NFPA 110. (NFPA 110 requires Alarms “C”)
Optional agency compliance	Units with Alarms “1” configuration available with additional compliance to UL category BBHH and NFPA 20

Construction

Housing/configuration	Material: Non-corroding aluminum. Configuration options: <ul style="list-style-type: none">• Fully enclosed: C-UL listed enclosure• Open frame: C-UL recognized
Packaging	Open-frame and Slimline configurations only available in bulk OEM quantities and packaging
Dimensions	See <i>Drawings and Dimensions</i> page for details
Printed circuit card	Surface mount technology, conformal coated
Cooling	Natural convection
Protection degree	Listed housing: NEMA-1 (IP20). Optional IP21 drip shield. Optional NEMA 3R enclosure
Damage prevention	Fully recessed display and controls
Electrical connections	Compression terminal blocks

Warranty

Standard warranty	Three year parts and labor warranty (10 years magnetics and power semiconductors) from date of shipment
Optional warranty	If specified at time of order, warranty coverage can be increased to reimburse customer’s documented field service costs up to the original charger price or increased to 5 or 10 years with field service cost reimbursement. Contact the factory for full details.

Optional features

Input	Input frequency, 50/60 Hz
Remote temp comp sensor	Recommended where battery and charger are in different locations
Drip shield meets s/b (IP21)	Protects from dripping water
NEMA 3R housing	Enables outdoor installation (remote temp sensor recommended)
UL BBHH listing	Available in 10A units with Alarms “1”
Field service warranty	Reimbursement of customer field service expenses up to charger price for 3, 5, or 10 years

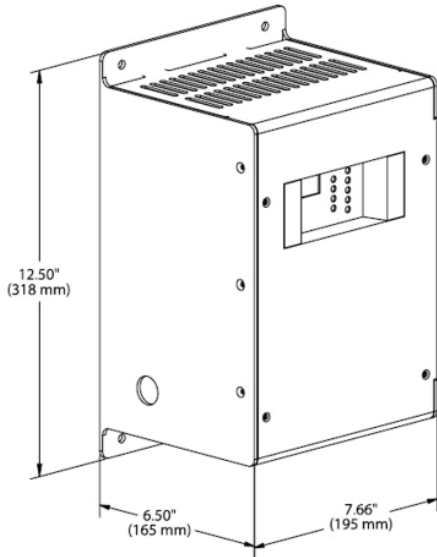
BATTERY CHARGER

NRG Intelligent Engine Start Data Sheet

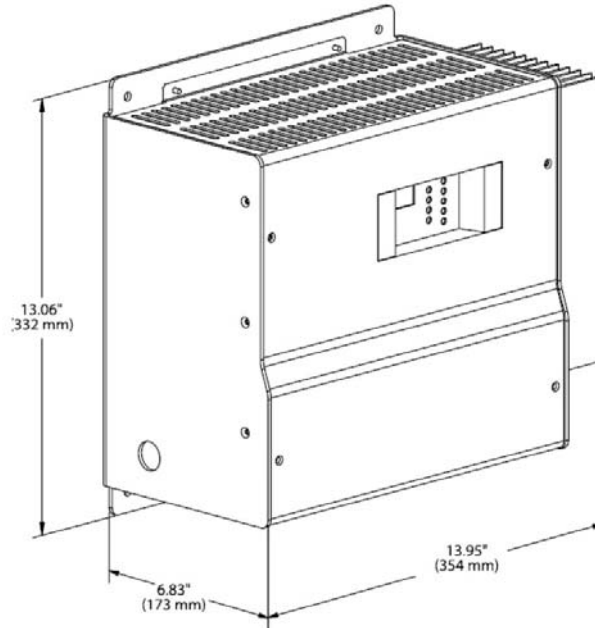


DIAGRAMS AND DIMENSIONS

10A Chargers



20A Chargers



Housing Dimensions Table			
Amps	Width	Depth	Height
10	7.66" (195 mm)	6.50" (165 mm)	12.50" (318 mm)
20	13.95" (354 mm)	6.83" (173 mm)	13.06" (332 mm)

BATTERY CHARGER

NRG Intelligent Engine Start Data Sheet



NRG Ordering Information					
Output volts	Output amps	Model	Available Configurations	NFPA 110 Alarms	Lbs/Kg
12/24	10	83187	Enclosed	Yes	24/10.9
12/24	20	90170	Enclosed, Open-frame	Yes	42/19.1
12/24	10	89983	Enclosed	Yes	24/10.9

All models offer field-selectable input 120/208-240 volts. 60 Hz input is standard with C-UL listing.
 Optional 50/60 Hz input includes C-UL listing and adds CE mark.



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BATTERY CHARGER

LC Data Sheet



DESCRIPTION

The LC battery charger is designed for engine starting duty creating a reliable non-stop DC power system for low current loads. With accurate charging, it delivers best-in-class performance and dependable battery life.

FEATURES

- Automatic 2-rate charging
- Temperature compensation
- Current limited
- Aluminum housing
- C-UL-US Listed
- IBC Seismic Certified

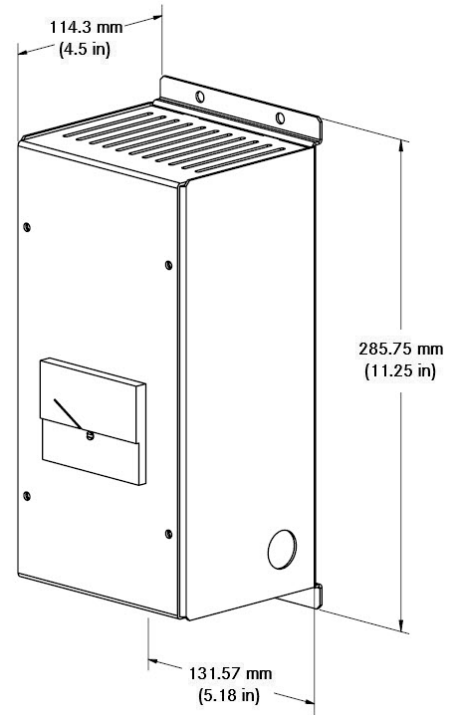


SPECIFICATIONS

Model	MTU Onsite Energy Part #	Input	Input Current	Output
LC12-500-2	31331	115 VAC, ±10%, 57-63 Hz	0.8A	12 VDC (nominal), 3.5 amps***
LC24-500-2	73683	115 VAC, ±10%, 57-63 Hz	0.8A	24 VDC (nominal), 3.5 amps***

***New chargers ordered for sealed lead acid batteries current limit at 2.5A

- Indication
 - Output DC ammeter, 2.5” scale 5% accuracy
- Voltage Regulation
 - Load and line regulation ±1% of the correct temperature compensated value
- Protection
 - Electronic current limit (no crank disconnect required). AC input fuse, DC overcurrent limiter.
- Adjustment
 - Internal adjustment for float voltage. Equalize voltage is fixed approximately 5% above float.
 - Intelligent Autoboot mode for rapid battery charging
- Environmental
 - -10 °C to ±50 °C operating temperature. 5% to 95% humidity, non-condensing.
- Mechanical
 - Non-corroding aluminum, wall mounting.



LC Battery Charger Dimensions

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BATTERY CHARGER

2608A Data Sheet



FEATURES

- Watertight, shock and corrosion resistant
- Short circuit and thermal protection
- LED status indicator
- Reverse polarity protection

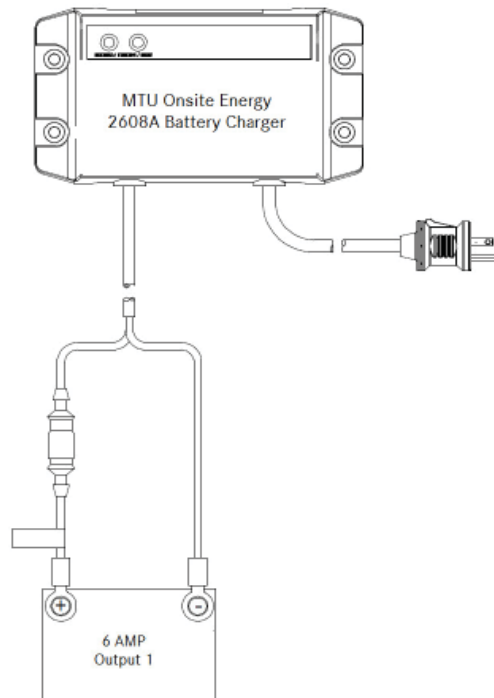
DESCRIPTION

The 2608A battery charger is designed to recharge batteries as well as extend the battery's life in applications where it is stored for long periods of time. This charger is "3-stage" electronic, completely automatic, and lightweight. Unlike automotive trickle chargers, the 2608A will not overcharge batteries. The visible red and green LED lights on the charger faceplate allow for easy operation.



SPECIFICATIONS

- MTU Onsite Energy Part #: 79100
- Output Volts: 12 Volts
- Output Amps: 6 Amps
- Load Banks: 1 Bank
- DC Cable Length: 1219.2 mm (48 in)
- Dimensions (L x W x H): 88.9 mm (3.5 in) x 162.56 mm (6.4 in) x 57.15 mm (2.25 in)
- Input Volts: 115 VAC - 50/60 Hz
- Input Amps Max: 2 Amps



2608A Battery Charger Schematic

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GASEOUS FUEL SYSTEM

Fuel System Specifications Data Sheet



MTU Onsite Energy has developed a custom fuel system using common gaseous fuel system components that features a state-of-the-art Engine Control Module (ECM) which has the latest technology available incorporated.

As today's emissions regulations get stricter on engines, other solutions are necessary to comply. This is accomplished with the new MTU Onsite Energy gaseous generator sets by using a closed loop fuel system utilizing sequential ignition and after treatment (where required). This system is capable of detecting engine faults and protecting itself from harm while also alerting the user with a Malfunction Indicator Light (MIL) through the DGC-2020 control panel. The ECM communicates with the DGC-2020 panel to allow a fully integrated system sharing necessary information between components reducing additional sensors. The MTU Onsite Energy fuel system is adept to operating conditions and changes parameters based on its surroundings for variables such as barometric pressure and intake air temperature. Knock sensing is also a built-in function to the fuel system allowing peak power for the environmental conditions of the unit when this protection is deemed necessary.

The MTU Onsite Energy fuel system utilizes a Windows®-based interface for viewing the engine parameters along with diagnostic tools for determining component failures, allowing quick solutions in the field.

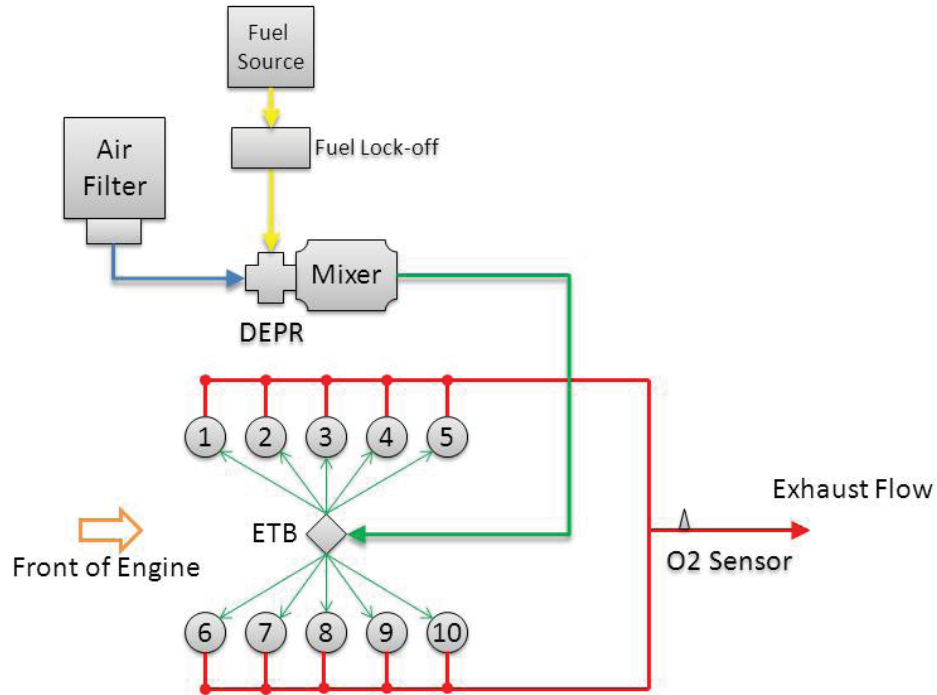
PRODUCT HIGHLIGHTS

MTU Onsite Energy fuel system capabilities include (but are not limited to):

- CAN J-1939 for full communication with DGC-2020 control panel amongst other devices capable of reading CANBus signals
- Closed Loop Lambda Control for EPA Compliance
- Sequential Ignition System
- Electronic Governing
- Controls engines up to 10 cylinders
- Electronic Fuel Lock-Off Control
- Built-In Engine Data Logger
- Built-In Engine Protection from engine faults
- Every fuel system pre-programmed for single fuel operation on both NG or LPG fuel
- Active Knock Control (where applicable)

GASEOUS FUEL SYSTEM

Fuel System Specifications Data Sheet



Fuel System Overview Diagram (10V shown)

**DEPR = Digital Electronic Pressure Regulator

FUEL SYSTEM

Single Valve Gas Solenoid Data Sheet



Internal pilot operated solenoid valve used to control the flow of fuel gases in generator systems. This compact valve design exceeds flow requirements and is also capable of withstanding temperatures as low as -40 °F.

DESCRIPTION

- Unique double disc design with overtravel provides redundant sealing for leak tight shutoff
- For on-off control of fuel gas
- 1/8" NPT pipe taps with plugs for routine testing

VALVE CONSTRUCTION

Valve Part Materials	
Body	Aluminum
Seals and Disc	NBR
Core Tube	305 Stainless Steel
Core Guide	Acetal
Rider Ring	PTFE
Core and Plugnut	430F Stainless Steel
Springs	302 Stainless Steel
Shading Coil	Copper
Pipe Plug	Zinc-Plated Steel

ELECTRICAL

Standard Coil and Class of Insulation	B
DC Watts	14.9

VALVE RESPONSE TIME

Opening Time	Less than 1 second
Closing Time	Less than 1 second

APPROVALS

UL Listed to standard 429 "Electrically Operated Valves" Guide YIOZ, File MP6 18 Safety Shutoff Valves.

CSA Certified to:

1. Standard C22.2 No. 139 "Electrically Operated Valves", File 01038 1
2. Automatic Gas Valves Z21.21 (6.5), C/I, File 112872
3. Automatic Gas Safety Shutoff Valves (3.9), File 112872

NPT	Voltage	Part Number
3/4"	12	46013
1"	12	46021
1 1/2"	12	86725
1 1/2"	24	87895
2"	24	86726

FUEL SYSTEM

Dual Valve Gas Solenoid Data Sheet



There are two primary types of valves. Valve 1 features two normally closed safety shutoff valves in one housing, as well as a maximum flow adjustment. Valve 2 features two normally closed safety shutoff valves with a gas pressure regulator in one housing. Both valve types are used in single and dual fuel systems to regulate the flow of gaseous fuels to generator systems, and are also fast opening and fast closing.

CERTIFICATIONS AND STANDARDS

- All models are:
- CSA Certified
 - UL Recognized

PART NUMBER LIST

12 Volt Systems	24 Volt Systems
102426	102427
102428	102429
	97687

SPECIFICATIONS

	Valve 1	Valve 2
Part Numbers	97687	102426, 102427, 102428 & 102429
Gases	Natural Gas, Propane	Natural Gas, Propane
Maximum Operating Pressure	5 psi	5 psi
Maximum Close-Off Pressure	C/F	7 psi
Ambient Temperature	5 °F to 140 °F	-40 °F to 140 °F
Cycle Rate	C/F	60 Cycles/Hour
Operating Time	100% Duty Cycle	100% Duty Cycle
Valve Construction		
Housing	Aluminum, Steel	Aluminum, Steel
Seal on Valve Seats	NBR-based rubber	NBR-based rubber
Valve Response Time		
Opening Time	Less than 1 second	Less than 1 second
Closing Time	Less than 1 second	Less than 1 second

SUPPLEMENTAL HARDWARE

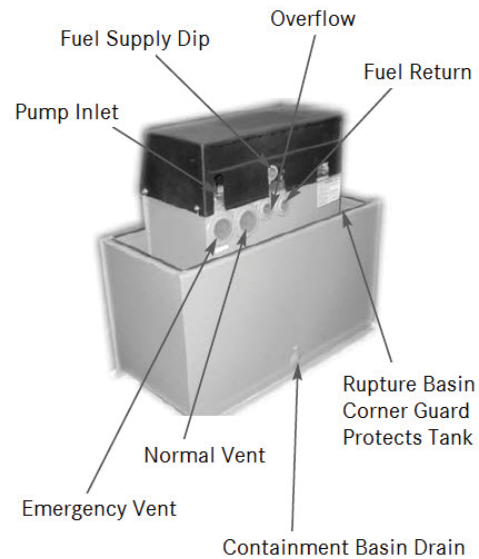
Valve	1 1/2" Flange	2" Flange	Gas Pressure Switch
97687	N/A	97686	N/A
102426	91990	91991	91987
102427	91990	91991	91987
102428	91992	N/A	91987
102429	91992	N/A	91987

FUEL SYSTEM

Day Tank Data Sheet



MTU Onsite Energy day tanks provide quality, reliable, and safe operations for onsite power diesel fuel applications. Day Tanks are used in close proximity to the engine for reliable draws of diesel fuel. Pulling the diesel from the main fuel storage tank into the day tank, the engine is then able to draw needed fuel from the day tank for power generation applications.



STANDARD FEATURES

- UL-142 Listed, NFPA 30 & 37 compliant
- Heavy gauge steel construction
- Rust inhibitor coated paint finish
- Removable, non-conductive cover
- 1/3 HP, 1 phase, 115 VAC, 60 Hz thermally protected motor
- 2 GPM, high lift gear pump with 3/8" NPT inlet and discharge
- TRS/TRX systems include Electronic Control Module (ECM)
- Tank Connections:
 - 1" NPT Engine Supply
 - 1" NPT Engine Return
 - NPT fitting for emergency vent
 - 1" NPT Overflow
 - 2" NPT Normal Vent
 - 4 1/2" Square Inspection Port and Gauge

OPTIONAL FEATURES

- 2" NPT Mushroom Cap with Screen
- Rupture Basin
 - Open top, indoor use applications
- Double Wall Basin
 - Closed top with pressure relief vent cap, outdoor or indoor use applications depending on local code requirements
- Immersion Heaters
- Float Switches
- Transformers and Motor Starters
- Controller Options

FUEL SYSTEM

Day Tank Data Sheet



TRS / TRE / TRX DAY TANKS – SINGLE WALL TABLE INSTRUCTIONS:

- Locate your tank capacity. Find the specification details for that tank in the horizontal row located next to the tank capacity. **Note:** The total height varies between the three styles when the pump, motor, controller, and gauge are included.
- If your tank includes a basin, consult the rupture basin charts on the next page for dimensions.

TRS / TRE / TRX Day Tanks – Single Wall								
Tank Capacity Liter (Gallon)	Steel Gauge	Emerg Vent NPT	Dimensions – mm (in)			Weight – kg (lb)		
			Length	Width	Height	TRS	TRE	TRX
38 (10)	12	2	304.8 (12)	609.6 (24)	304.8 (12)	31.75 (70)	28.58 (63)	21.77 (48)
57 (15)	12	2	304.8 (12)	609.6 (24)	406.4 (16)	35.83 (79)	32.66 (72)	25.85 (57)
95 (25)	12	2	304.8 (12)	609.6 (24)	609.6 (24)	44.45 (98)	41.28 (91)	34.47 (76)
189 (50)	12	2	457.2 (18)	609.6 (24)	787.4 (31)	61.69 (136)	58.51 (129)	51.71 (114)
227 (60)	12	2	508 (20)	609.6 (24)	787.4 (31)	64.86 (143)	61.69 (136)	54.88 (121)
284 (75)	12	2	609.6 (24)	609.6 (24)	787.4 (31)	71.67 (158)	68.49 (151)	61.69 (136)
378 (100)	12	3	609.6 (24)	609.6 (24)	1,117.6 (44)	90.26 (199)	87.09 (192)	80.29 (177)
568 (150)	12	3	914.4 (36)	609.6 (24)	1,117.6 (44)	114.31 (252)	111.13 (245)	104.33 (230)
757 (200)	12	3	1,168.4 (46)	609.6 (24)	1,117.6 (44)	134.72 (297)	131.54 (290)	124.74 (275)
1,041 (275)	12	4	1,676.4 (66)	609.6 (24)	1,117.6 (44)	175.09 (386)	171.91 (379)	165.11 (364)
1,136 (300)	12	4	1,016 (40)	914.4 (36)	1,270 (50)	166.02 (366)	162.84 (359)	156.04 (344)
1,325 (350)	12	4	1,168.4 (46)	914.4 (36)	1,270 (50)	181.44 (400)	178.26 (393)	171.46 (378)
1,514 (400)	12	4	1,397 (55)	914.4 (36)	1,270 (50)	204.57 (451)	201.39 (444)	194.59 (429)
1,703 (450)	12	4	1,549.4 (61)	914.4 (36)	1,270 (50)	219.99 (485)	216.82 (478)	210.01 (463)
1,893 (500)	12	4	1,727.2 (68)	914.4 (36)	1,270 (50)	237.68 (524)	234.51 (517)	227.7 (502)
2,082 (550)	10	4	1,879.6 (74)	914.4 (36)	1,270 (50)	322.5 (711)	319.33 (704)	312.53 (689)
2,271 (600)	10	5	2,057.4 (81)	914.4 (36)	1,270 (50)	345.64 (762)	342.46 (755)	335.66 (740)
2,650 (700)	10	5	1,778 (70)	1,219.2 (48)	1,270 (50)	364.69 (804)	361.51 (797)	354.71 (782)
3,028 (800)	10	5	2,032 (80)	1,219.2 (48)	1,270 (50)	401.88 (886)	398.71 (879)	391.9 (864)
3,407 (900)	10	5	2,286 (90)	1,219.2 (48)	1,270 (50)	439.53 (969)	436.36 (962)	429.55 (947)
3,785 (1,000)	10	5	2,540 (100)	1,219.2 (48)	1,270 (50)	477.18 (1,052)	474 (1,045)	467.2 (1,030)

DOUBLE WALL TANKS AND RUPTURE BASIN TABLE INSTRUCTIONS:

- Determine if you need 150% or 200% capacity as well as a rupture basin or double wall. 150% capacity is used for most applications, local codes will dictate if a 200% capacity is needed.
- Locate the appropriate table and find your tank’s fuel capacity in the tank capacity column.
- Follow the horizontal row next to the tank capacity to locate the containment option number needed for your application.

FUEL SYSTEM

Day Tank Data Sheet



150% Containment Options								
Tank Capacity Liter (Gallon)	Open Top Basin	Double Wall	Tank Dimensions – mm (in)			Weight – kg (lb)		
			Length	Width	Height	TRS	TRE	TRX
38 (10)	2900	7000	406.4 (16)	914.4 (36)	342.9 (13.5)	62.14 (137)	58.97 (130)	52.16 (115)
57 (15)	2905	7005	406.4 (16)	914.4 (36)	444.5 (17.5)	72.58 (160)	69.4 (153)	62.6 (138)
95 (25)	2910	7010	406.4 (16)	914.4 (36)	647.7 (25.5)	93.44 (206)	90.26 (199)	83.46 (184)
189 (50)	2920	7015	558.8 (22)	914.4 (36)	825.5 (32.5)	132.9 (293)	129.73 (286)	122.92 (271)
227 (60)	2940	7020	711.2 (28)	914.4 (36)	825.5 (32.5)	147.42 (325)	144.24 (318)	137.44 (303)
284 (75)	2940	7020	711.2 (28)	914.4 (36)	825.5 (32.5)	154.22 (340)	151.05 (333)	144.24 (318)
378 (100)	2950	7030	711.2 (28)	914.4 (36)	1,155.7 (45.5)	199.58 (440)	196.41 (433)	189.6 (418)
568 (150)	2960	7035	1,016 (40)	914.4 (36)	1,155.7 (45.5)	251.29 (554)	248.12 (547)	241.31 (532)
757 (200)	2970	7040	1,270 (50)	914.4 (36)	1,155.7 (45.5)	294.84 (650)	291.66 (643)	284.86 (628)
1,041 (275)	2990	7045	1,778 (70)	914.4 (36)	1,155.7 (45.5)	381.02 (840)	377.84 (833)	371.04 (818)
1,136 (300)	2989	7050	1,143 (45)	1,219.2 (48)	1,308.1 (51.5)	360.61 (795)	357.43 (788)	350.63 (773)
1,325 (350)	2991	7055	1,295.4 (51)	1,219.2 (48)	1,308.1 (51.5)	453.14 (999)	449.97 (992)	443.16 (977)
1,514 (400)	2992	7060	1,524 (60)	1,219.2 (48)	1,308.1 (51.5)	509.38 (1,123)	506.21 (1,116)	499.41 (1,101)
1,703 (450)	2993	7065	1,676.4 (66)	1,219.2 (48)	1,308.1 (51.5)	546.58 (1,205)	543.4 (1,198)	536.6 (1,183)
1,893 (500)	2994	7070	1,854.2 (73)	1,219.2 (48)	1,308.1 (51.5)	589.67 (1,300)	586.5 (1,293)	579.7 (1,278)
2,082 (550)	2995	7075	2,006.6 (79)	1,219.2 (48)	1,308.1 (51.5)	696.26 (1,535)	693.1 (1,528)	686.29 (1,513)
2,271 (600)	2996	7080	2,184.4 (86)	1,219.2 (48)	1,308.1 (51.5)	744.8 (1,642)	741.62 (1,635)	734.82 (1,620)
2,650 (700)	2980	7085	2,133.6 (84)	1,524 (60)	1,308.1 (51.5)	816.47 (1,800)	813.29 (1,793)	806.49 (1,778)
3,028 (800)	2981	7090	2,438.4 (96)	1,524 (60)	1,308.1 (51.5)	903.1 (1,991)	899.93 (1,984)	893.12 (1,969)
3,407 (900)	2982	7095	2,743.2 (108)	1,524 (60)	1,308.1 (51.5)	989.74 (2,182)	986.56 (2,175)	979.76 (2,160)
3,785 (1,000)	2983	7100	3,048 (120)	1,524 (60)	1,308.1 (51.5)	1,076.38 (2373)	1,073.2 (2,366)	1,066.4 (2,351)

Tank Within Containment Only For Overall Height – Add 8" TRS or TRE/TRX Add 1.25"

FUEL SYSTEM

Day Tank Data Sheet



200% Containment Options								
Tank Capacity Liter (Gallon)	Open Top Basin	Double Wall	Tank Dimensions – mm (in)			Weight – kg (lb)		
			Length	Width	Height	TRS	TRE	TRX
38 (10)	2905	7005	406.4 (16)	914.4 (36)	317.5 (12.5)	98.88 (218)	95.71 (211)	88.9 (196)
57 (15)	2910	7010	406.4 (16)	914.4 (36)	527 (20.5)	121.56 (268)	118.39 (261)	111.58 (246)
95 (25)	2920	7015	558.8 (22)	914.4 (36)	698.5 (27.5)	164.65 (363)	161.48 (356)	154.68 (341)
189 (50)	2940	7020	711.2 (28)	914.4 (36)	698.5 (27.5)	215.46 (475)	212.28 (468)	205.48 (453)
227 (60)	2940	7020	711.2 (28)	914.4 (36)	698.5 (27.5)	229.971 (507)	226.8 (500)	219.99 (485)
284 (75)	2950	7030	711.2 (28)	914.4 (36)	1,054.1 (41.5)	263.54 (581)	260.36 (574)	253.56 (559)
378 (100)	2960	7035	1,016 (40)	914.4 (36)	1,054.1 (41.5)	336.57 (742)	333.39 (735)	326.59 (720)
568 (150)	2970	7040	1,270 (50)	914.4 (36)	1,054.1 (41.5)	411.41 (907)	408.23 (900)	401.43 (885)
757 (200)	2990	7045	1,778 (70)	914.4 (36)	1,054.1 (41.5)	500.77 (1,104)	497.59 (1,097)	490.79 (1,082)
1,041 (275)	2997	7046	1,778 (70)	914.4 (36)	1,054.1 (41.5)	691.73 (1,525)	688.55 (1,518)	681.75 (1,503)
1,136 (300)	2993	7065	1,676.4 (66)	1,219.2 (48)	1,193.8 (47)	687.19 (1,515)	684.07 (1,508)	677.21 (1,493)
1,325 (350)	2994	7070	1,854.2 (73)	1,219.2 (48)	1,193.8 (47)	805.13 (1,775)	801.95 (1,768)	795.15 (1,753)
1,514 (400)	2995	7075	2,006.6 (79)	1,219.2 (48)	1,193.8 (47)	883.14 (1,947)	879.97 (1,940)	873.17 (1,925)
1,703 (450)	2996	7080	2,184.4 (86)	1,219.2 (48)	1,193.8 (47)	945.74 (2,085)	942.56 (2,078)	935.76 (2,063)
1,893 (500)	2980	7085	2,133.6 (84)	1,524 (60)	1,193.8 (47)	1,041.45 (2,296)	1,038.27 (2,289)	1,031.47 (2,274)
2,082 (550)	2981	7090	2,438.4 (96)	1,524 (60)	1,193.8 (47)	1,197.49 (2,640)	1,194.31 (2,633)	1,187.51 (2,618)
2,271 (600)	2982	7095	2,743.2 (108)	1,524 (60)	1,193.8 (47)	1,295.01 (2,855)	1,291.83 (2,848)	1,285.03 (2,833)
2,650 (700)	2983	7100	3,048 (120)	1,524 (60)	1,193.8 (47)	1,415.66 (3,121)	1,412.49 (3,114)	1,405.68 (3,099)
3,028 (800)	Consult Factory for 200% Containment Specifications							
3,407 (900)								
3,785 (1,000)								

Tank Within Containment Only For Overall Height – Add 8" TRS or TRE/TRX Add 1.25"

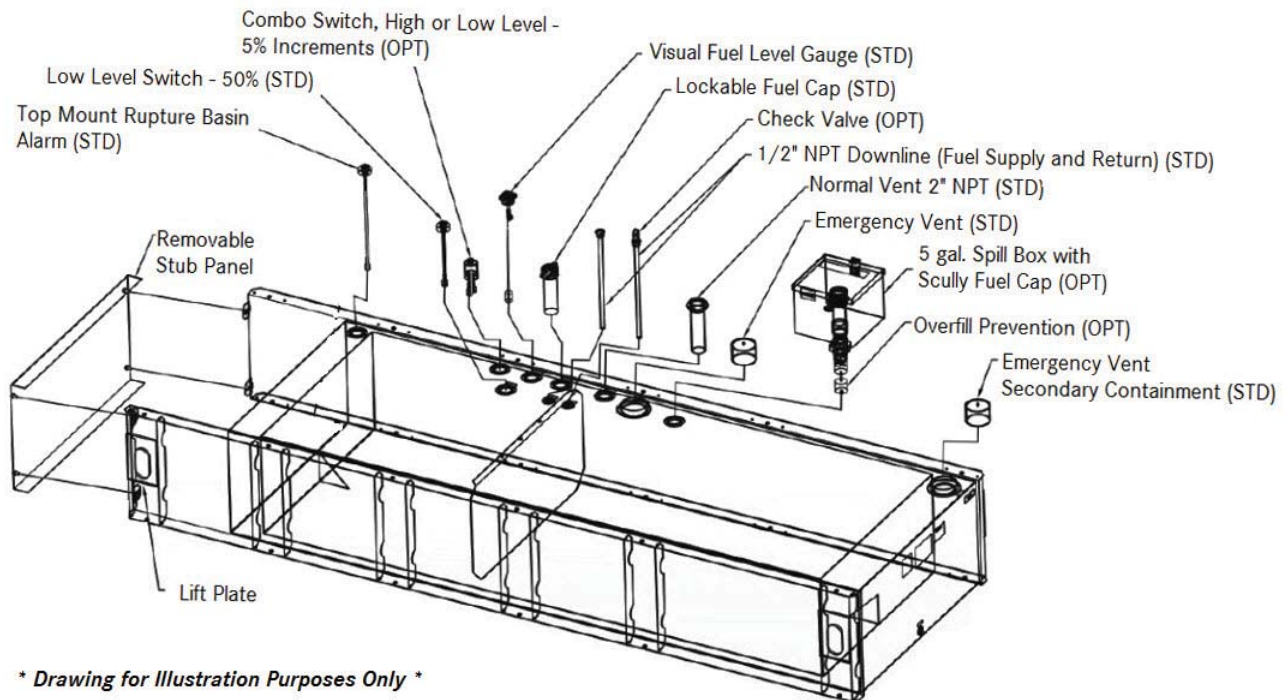
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FUEL SYSTEM

Sub-Base Tank Data Sheet



MTU Onsite Energy's sub-base fuel tanks are manufactured and listed per UL142 standards for steel above-ground tanks. UL142 assures that our tanks meet the structural and mechanical integrity requirements for mounting generator sets directly on top, providing our customers with a safe and efficient fuel storage system. These tanks are intended for above-ground storage of non-corrosive, stable flammable, and combustible liquids that have a specific gravity not exceeding that of water and are in accordance with the Flammable and Combustible Liquids Code, NFPA 30; the Standard for Installation of Oil Burning Equipment, NFPA 31; and the Automotive and Marine Service Station Code, NFPA 30A.



** Drawing for Illustration Purposes Only **

FUEL SYSTEM

Sub-Base Tank Data Sheet



STANDARD FEATURES

- General: Fuel supply and return, normal vent, emergency vent (quantity and size varies with tank size), manual fill, lockable fill cap, level alarm, basin drain (plugged), removable supply and return dip tubes, leak detection, powder coated black paint finish, and wall thickness of tanks (inner and outer) will vary depending on size.
- Electrical Stub-Up Area: Provides space for generator set electrical connections. Where feasible, removable access panel varying in size with regard to product it is used with. Provides internal generator set wiring capabilities through the fuel tank.
- Baffles: Separates cold engine supply fuel from hot returning fuel. Additional baffling as required for structural integrity.
- Fuel Level Gauge: A direct-reading fuel level gauge with electric sender.

OPTIONAL FEATURES

- High pre-alarm and low fuel level shutdown
- Adding electrical options and mechanical features allows sub-base tank to perform as a day tank
- Five-gallon spill/fill containment box with lockable hatch
- Fuel tanks to meet local jurisdictions/codes



MTU ONSITE ENERGY TRAILERS

Since 1952, MTU Onsite Energy's power professionals are helping to meet the world's growing demand for reliable primary and standby power. Working with our extensive network of experienced distributors, we provide a total design package to create engine generator sets meeting the most unique, custom requirements. MTU Onsite Energy utilizes sophisticated manufacturing techniques throughout our entire production facility. This assures our customers that they will receive top quality, customized, dependable power to meet and exceed their expectations.

MTU Onsite Energy is proud to serve customers all over the world.

A Tognum Group Company

MTU Onsite Energy / 100 Power Drive / Mankato / Minnesota 56001
Phone 507 625 7973 / Fax 507 625 2968 / Toll Free 800 325 5450

www.mtu-online.com



MOBILE POWER SOLUTIONS. WHERE YOU NEED IT.

TRAILERS

MTU Onsite Energy offers flexibility to configure the generator set trailer to meet job requirements. All trailers are constructed from heavy duty channel iron and steel. All MTU Onsite Energy trailers are approved for highway travel, meeting all Department of Transportation (DOT) requirements.

Standard Features:

- // Available on 30 kW to 275 kW engine generator sets
- // Black gloss finish paint
- // 2 5/16" ball hitch
- // Heavy duty fenders
- // Adjustable jackstand
- // Stop and turn light kit
- // Safety chains
- // Torflex axle
- // Electric brakes

Optional Features:

- // Sound attenuated enclosure
- // Voltage selector switch
- // Gasketed cable box
- // Towing ring
- // Wheel chock
- // Standing jacks
- // Hydraulic surge brakes
- // Fuel tanks
- // Bolt on spare tire
- // Tire mounting bracket
- // Trailer mounted fuel tanks



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2012-08



PRIME LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED WARRANTY PERIOD

Engine Generator Set: Parts and labor for twenty-four (24) months will begin with the first commissioning of the product(s). In all cases, the warranty period will expire not later than thirty-six (36) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product), and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE

PRIME LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
 - k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
 - s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.
 - w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
 - y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.

PRIME LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



- aa. Units purchased at the prime power rating that are being used in a standby power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment

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STANDBY LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



LIMITED WARRANTY

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LIMITED WARRANTY PERIOD

Engine Generator Set: Parts and labor for twenty-four (24) months will begin with the first commissioning of the product(s). In all cases, the warranty period will expire not later than thirty-six (36) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product), and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

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MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE

STANDBY LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
 - k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
 - s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.
 - w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
 - y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.

STANDBY LIMITED WARRANTY

Two (2) Year / 3,000 Hour Basic



- aa. Units purchased at the standby power rating that are being used in a prime power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment

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PRIME LIMITED WARRANTY

Two (2) Year / 6,000 Hour Basic Extended



LIMITED WARRANTY

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LIMITED WARRANTY PERIOD

Engine Generator Set: Parts and labor for twenty-four (24) months will begin with the first commissioning of the product(s). In all cases, the warranty period will expire not later than thirty-six (36) months from the date of shipment ex-works MTU Onsite Energy or after 6,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product), and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

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MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE

PRIME LIMITED WARRANTY

Two (2) Year / 6,000 Hour Basic Extended



FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
 - k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
 - s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.
 - w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
 - y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.

PRIME LIMITED WARRANTY

Two (2) Year / 6,000 Hour Basic Extended



- aa. Units purchased at the prime power rating that are being used in a standby power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment

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STANDBY LIMITED WARRANTY

Five (5) Year / 3,000 Hour Basic Extended



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons

LIMITED WARRANTY PERIOD

Engine Generator Set: Parts for sixty (60) months will begin with the first commissioning of the product(s), including labor for the first twenty-four (24) months. In all cases, the warranty period will expire not later than seventy-two (72) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product), and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

STANDBY LIMITED WARRANTY

Five (5) Year / 3,000 Hour Basic Extended



MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
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 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
 - s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.
 - w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.

STANDBY LIMITED WARRANTY

Five (5) Year / 3,000 Hour Basic Extended



- y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.
 - aa. Units purchased at the standby power rating that are being used in a prime power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment

STANDBY LIMITED WARRANTY

Five (5) Year / 3,000 Hour

Comprehensive Extended



LIMITED WARRANTY

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LIMITED WARRANTY PERIOD

Engine Generator Set: Parts and labor for sixty (60) months will begin with the first commissioning of the product(s). In all cases, the warranty period will expire not later than seventy-two (72) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product), and all local standards and codes applicable in the location of installation.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

STANDBY LIMITED WARRANTY

Five (5) Year / 3,000 Hour

Comprehensive Extended



MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
 - k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.
 - s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.

STANDBY LIMITED WARRANTY
Five (5) Year / 3,000 Hour
Comprehensive Extended



- w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
 - y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.
 - aa. Units purchased at the standby power rating that are being used in a prime power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment

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STANDBY LIMITED WARRANTY

Ten (10) Year / 3,000 Hour

Major Component Extended



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED WARRANTY PERIOD

Major Components: (Referenced below.) Parts for one hundred twenty (120) months will begin with the first commissioning of the product(s), including labor for the first sixty (60) months. Engine Generator Set: Parts for sixty (60) months will begin with the first commissioning of the product(s), including labor for sixty (60) months. In all cases, the warranty period will expire not later than one hundred thirty-two (132) months from the date of shipment ex-works MTU Onsite Energy or after 3,000 operation hours, whichever occurs first. Accessories: Parts and labor for one (1) year from date of shipment. For a description of accessories and items excluded from this Limited Warranty, review the listings below.

LIMITED WARRANTY CONDITIONS

Before there is any protection under this Limited Warranty, the distributor must: (1) complete the MTU Onsite Energy Warranty and the Start-Up Validation and Pre-Inspection form, and return them to MTU Onsite Energy within 60 days of the start-up date, and (2) complete the engine registration form and return it to the manufacturer as stated in the instructions with engine registration form (when applicable). In addition, this Limited Warranty is not valid or enforceable unless: (1) all supporting maintenance records are kept on file with the end user and made available upon request from factory, (2) the generator set is routinely exercised in accordance with operating instructions, and (3) the installation meets the general guidelines, standards, recommendations (as laid out in the Installation Guide provided with the product) and all local standards and codes applicable in the location of installation.

Owner / Buyer shall bear the full cost and risk of loss to transport the Product to and from the Seller's factory or other designation service outlet for service provided under this warranty.

Engine generator sets that are stored by Owner / Buyer longer than 180 days from date of shipment are subject to special requirements. Contact MTU Onsite Energy's Service Center for instructions.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, see contact information at the bottom of this page.

STANDBY LIMITED WARRANTY

Ten (10) Year / 3,000 Hour

Major Component Extended



THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

1. The following items are not considered nor will they be covered under this Limited Warranty. If there are questions as to coverage under this Limited Warranty, it is advisable to contact the factory in advance of filing a claim.
 - a. Battery or batteries of any type or kind. The battery manufacturer's warranty, if any, is the only warranty that applies to batteries. Any warranty claim should be handled with the manufacturer according to its policies.
 - b. Adjustments to fuel systems or governor system at time of start-up or any time after. A warranty claim for such adjustments is acceptable only when a defective part has been replaced, returned to the factory, and approved as defective.
 - c. Normal maintenance costs, including but not limited to adjustments, loose and/or leaking fittings or clamps, and tune-ups performed during start-up or anytime thereafter.
 - d. Due to shipping, manufacturer is not responsible for loose connections. All connections must be checked at time of start-up.
 - e. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.
 - f. Products that are modified in any form without the written consent of MTU Onsite Energy will void this Limited Warranty.
 - g. Shipping damage of any type.
 - h. Any installation errors or damage of the equipment when shipped as ordered.
 - i. Any overtime travel or labor to make repairs under warranty.
 - j. Any special access fees required to gain access to MTU Onsite Energy equipment, including but not limited to any training or safety policy requirements to gain access.
 - k. Additional costs associated with inaccessible installations, including but not limited to removal and reinstallation of the generator set.
 - l. Rental equipment used during warranty work including but not limited to generators, rigging equipment such as a crane or boom truck, load banks, and special test equipment above factory requirements.
 - m. Excess mileage charges. Any authorized service provider may perform warranty service anywhere, but will only be paid for mileage expenses from the nearest service center and limited to 400 miles / 644 Kilometers round-trip.
 - n. Any equipment not factory approved and engineered for use on MTU Onsite Energy products. This includes but is not limited to aftermarket items such as special fuel systems, enclosures, exhaust systems, or switch gear that had been sought out and quoted by a third party to be included in billing of the MTU Onsite Energy equipment.
 - o. Misuse or abuse during installation and thereafter.
 - p. Normal wear and tear, maintenance, and consumable items that are not required as part of a warranty repair. Consumable items include but are not limited to belts, hoses, coolant, oil, filters, and fuses.
 - q. Acts of nature or acts of God such as lightning, wind, flood, tornado, hurricane, or earthquake.
 - r. Any damage due to situations beyond the control of the manufacturing of the product or workmanship of the product.

STANDBY LIMITED WARRANTY

Ten (10) Year / 3,000 Hour

Major Component Extended



- s. Installation or operation outside the guidelines as stated in the Installation Guide and Owner's Manual.
 - t. Diesel engine "Wet Stacking" due to lightly loaded diesel engines.
 - u. Misapplication of the equipment such as usage outside the original design parameters as stated on the nameplate of the equipment.
 - v. Travel expense on portable equipment.
 - w. Trailer lights, wiring, and brakes.
 - x. More than one trip to the job site because a service vehicle was not stocked with normal service parts.
 - y. Lodging expense of person(s) performing service, unless approved in advance by factory.
 - z. Engine fluids.
 - aa. Units purchased at the standby power rating that are being used in a prime power application.
 - ab. Any repair labor time that is determined to be excessive, e.g., two or more people performing a one-person job.
 - ac. Any expenses associated with investigating performance complaints in which no defect is found.
 - ad. Any associated costs for replacing components that are found not to be defective.
 - ae. Any adjustments covered in the start-up and inspection forms that are to be completed during start-up.
2. The accessories that are limited to one (1) year parts and labor from date of shipment include but are not limited to:
- a. Cords, receptacles, and cord reels
 - b. Gas flex pipes
 - c. Housing lights, space heaters, and associated equipment
3. Major Components:
- a. Engine: Cylinder block, camshaft, crankshaft, connecting rods, and flywheel.
 - b. Generator end: (Alternator) Main rotor, main stator, and drive disk.
 - c. Transfer Switch: Main contacts.

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STANDBY LIMITED WARRANTY

Two (2) Year Basic

Automatic Transfer Switch (ATS)



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED ATS WARRANTY PERIOD

Parts and labor for two (2) years from factory invoice date. A valid warranty requires that buyer must provide proof of purchase of the original ATS at the time of request for warranty consideration.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, contact MTU Onsite Energy, Attention: Service Department, 100 Power Drive, Mankato, MN 56001, +1 507 625 7973.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED. NO WARRANTIES SHALL BE IMPLIED OR OTHERWISE CREATED UNDER THE UNIFORM COMMERCIAL CODE, INCLUDING BUT NOT LIMITED TO A WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

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STANDBY LIMITED WARRANTY

Five (5) Year Basic Extended

Automatic Transfer Switch (ATS)



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED ATS WARRANTY PERIOD

Parts for five (5) years from factory invoice date including labor for the first two (2) years from factory invoice date. A valid warranty requires that buyer must provide proof of purchase of the original ATS at the time of request for warranty consideration.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, contact MTU Onsite Energy, Attention: Service Department, 100 Power Drive, Mankato, MN 56001, +1 507 625 7973.

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MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

STANDBY LIMITED WARRANTY

Five (5) Year Comprehensive Extended Automatic Transfer Switch (ATS)



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED ATS WARRANTY PERIOD

Parts and labor for five (5) years from factory invoice date. A valid warranty requires that buyer must provide proof of purchase of the original ATS at the time of request for warranty consideration.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, contact MTU Onsite Energy, Attention: Service Department, 100 Power Drive, Mankato, MN 56001, +1 507 625 7973.

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MTU ONSITE ENERGY SHALL NOT BE LIABLE FOR ANY CLAIM GREATER IN AMOUNT THAN THE PURCHASE PRICE OF THE PRODUCT AT ISSUE, AND IN NO EVENT SHALL MTU ONSITE ENERGY BE LIABLE FOR ANY SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES. STATE LAWS REGARDING THE RIGHTS OF CONSUMERS MAY VARY FROM STATE TO STATE.

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STANDBY LIMITED WARRANTY

Ten (10) Year Major Components Extended Automatic Transfer Switch (ATS)



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED ATS WARRANTY PERIOD

Major Components: (Main Contacts Only.) For ten (10) years, including parts and labor for the first five (5) years from factory invoice date. A valid warranty requires that buyer must provide proof of purchase of the original ATS at the time of request for warranty consideration.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, contact MTU Onsite Energy, Attention: Service Department, 100 Power Drive, Mankato, MN 56001, +1 507 625 7973.

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STANDBY LIMITED WARRANTY

One (1) Year Basic Parts



LIMITED WARRANTY

Your MTU Onsite Energy product has been manufactured and inspected with care by experienced craftspeople. If you are the original consumer, MTU Onsite Energy warrants, for the limited warranty period indicated below, each product will be free from defects in materials and workmanship, and will perform under normal use and service from valid start-up performed by MTU Onsite Energy. This Limited Warranty shall apply only when the product has been properly installed, serviced, and operated in accordance with the applicable MTU Onsite Energy instruction manuals. If this Limited Warranty applies, the liability of MTU Onsite Energy shall be limited to the replacement, repair, or appropriate adjustment of the product, at MTU Onsite Energy's option. This Limited Warranty does not apply to malfunctions caused by normal wear and tear, or by damage, unreasonable use, misuse, repair, or service by unauthorized persons.

LIMITED WARRANTY PERIOD

Parts have a one (1) year limited warranty from invoice date. MTU Onsite Energy's obligation under this warranty is expressly limited to supplying replacement parts and does not cover any other associated costs incurred. Parts replaced under this warranty will carry the remaining warranty time from the original purchased part, and if required, MTU Onsite Energy has the right to request proof-of-purchase of the original purchased part. All parts being considered for warranty must be returned to MTU Onsite Energy for evaluation, unless MTU Onsite Energy authorizes the part to not be returned.

All Automatic Transfer Switches sold by MTU Onsite Energy fall within a different warranty other than the Parts Warranty.

TO OBTAIN WARRANTY SERVICE

Warranty service may only be performed by MTU Onsite Energy authorized service providers. **Service provided by unauthorized persons will void this Limited Warranty. Non-MTU Onsite Energy replacement part(s) will void this Limited Warranty.** Contact your nearest MTU Onsite Energy Service Representative to obtain warranty service. For assistance in locating your nearest authorized service representative, contact MTU Onsite Energy, Attention: Service Department, 100 Power Drive, Mankato, MN 56001, +1 507 625 7973.

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Engineer's Guidebook

Version History



Indicated below is a summary of changes that occurred with each release of the Engineer's Guidebook.

Version	Release Date	Change Type	Print	Online	Description
2013-07	07/02/2013	New	X	X	Color Options Data Sheet
			X	X	Enclosure and Sound Data Sheets for Diesel and Gas
			X	X	Spec Sheets: GS100-6S, GS125-6S, DS1200D6S
			X	X	ATS Optional Accessories List
			X	X	Master Control Panel Data Sheet
			X	X	Paralleling Application Guides
			X	X	Commercial Battery Data Sheet
			X	X	LC Battery Charger Data Sheet
			X	X	Day Tank Fuel System Data Sheet
			X	X	Sub-Base Tank Fuel System Data Sheet
		Updated	X	X	Cover
			X	X	Added page numbering to Table of Contents
			X	X	How To Order or Download Your Copy
			X	X	Incumbent Model Number Definition
			X	X	Product Standardization Model Number Definition
			X	X	Training, Parts & Service
			X	X	Performance Assurance Certification
			X	X	Existing Spec Sheet Changes: Please refer to the <i>2013 Spec Sheet Change Summary</i> on the MTU Onsite Energy Company site (www.mtuonsiteenergy.com).
			X	X	RDP-110 Data Sheet
			X	X	Warranties
		Deleted	X	X	Registration Card
			X	X	Enclosures Brochure (replaced by Enclosure and Sound Data Sheets)
			X	X	Fuel Tanks Brochure (replaced by Day Tank and Sub-Base Tank Data Sheets)
			X	X	Sound Data Sheets (replaced by Enclosure and Sound Data Sheets)
			X	X	Guest 2605A Battery Charger Data Sheet

