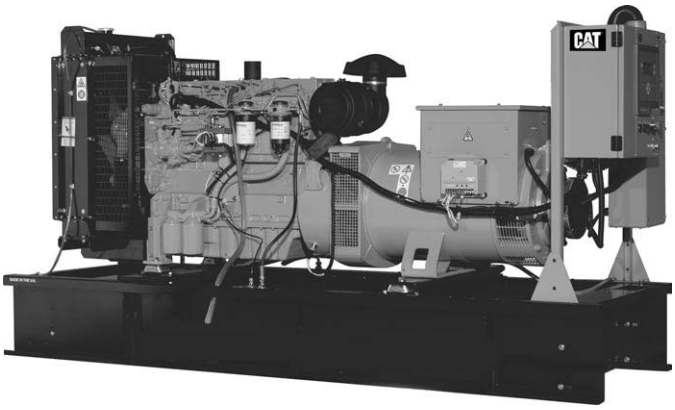
DIESEL GENERATOR SET

CATERPILLAR®



STANDBY 60-100 kW
PRIME 54-90 kW

60 Hz

Model	Standby kW (kVA)	Prime kW (kVA)
D60-4S	60 (60)	54 (54)
D75-4S	75 (75)	67.5 (67.5)
D80-4	80 (100)	72 (90)
D90-4S	90 (90)	82 (82)
D100-4	100 (125)	90 (112.5)
D100-4S	100 (100)	90 (90)

Tier II EPA Approved, Emissions Certified

FEATURES

GENERATOR SET
- Complete system designed and built at ISO 9001 certified facilities
- Factory tested to design specifications at full load conditions

ENGINE
- Governor, electronic
- Electrical system, 12 VDC
- Cartridge type filters
- Battery rack and cables
- Coolant and lube drains piped to edge of base

GENERATOR
- Insulation system, class H
- Drip proof generator air intake (NEMA 2, IP23)
- Electrical design in accordance with BS5000 Part 99, EN61000-6, IEC60034-1, NEMA MG-1.33

CONTROL SYSTEM
- EMCP 3.1 digital control panel
- Vibration isolated NEMA 1 enclosure with lockable hinged door
- DC and AC wiring harnesses

MOUNTING ARRANGEMENT
- Heavy-duty fabricated steel base with lifting points
- Anti-vibration pads to ensure vibration isolation
- Complete OSHA guarding
- Stub-up pipe ready for connection to silencer pipework
- Flexible fuel lines to base with NPT connections

COOLING SYSTEM
- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50° C (122° F)

CIRCUIT BREAKER
- UL/CSA listed
- 3-pole with solid neutral
- NEMA 1 steel enclosure, vibration isolated
- Electrical stub-up area directly below circuit breaker

AUTOMATIC VOLTAGE REGULATOR
- Voltage within ± 0.5% 3-phase and ± 1.0% single phase at steady state from no load to full load
- Provides fast recovery from transient load changes

EQUIPMENT FINISH
- All electroplated hardware
- Anticorrosive paint protection
- High gloss polyurethane paint for durability and scuff resistance

QUALITY STANDARDS
- BS4999, BS5000, BS5514, EN61000-6, IEC60034, NEMA MG-1.33, NFPA 110 (with optional equipment)

DOCUMENTATION
- Operation and maintenance manuals provided
- Wiring diagrams included

WARRANTY
- All equipment carries full manufacturer's warranty.

OPTIONAL EQUIPMENT*

ENCLOSURE
- B Series weather protective enclosure (includes internal silencer system)
  – Single point lift
  – Panel viewing window
  – External emergency stop pushbutton
- Sound attenuated enclosure (includes internal silencer system)

SILENCER SYSTEM – OPEN UNIT
- Level 1 silencer
- Level 2 silencer
- Level 3 silencer
- Mounting kit
- Through-wall installation kits

ENGINE
- Battery heater
- Lube oil drain pump
- High lube oil temperature shutdown
- Lube oil sump heater

CIRCUIT BREAKER
- Auxiliary voltfree contacts
- Shunt trip (100+ amp breakers)

GENERATOR
- Anti-condensation heater
- Permanent magnet generator
- AREP excitation system (D80-4, D100-4)
- Generator upgrade 1 size (D80-4, D100-4)

CONTROL SYSTEM
- No control system
- EMCP 3.2 digital control panel

MOUNTING ACCESSORIES
- Seismic (Zone 4) vibration isolators

FUEL SYSTEM
- Metal fuel tank
- UL listed closed top-diked skid-mounted fuel tank base (12/24-hour capacity) with fuel alarm (low level/leak detected)
- Critical high fuel alarm
- Critical low fuel level shutdown

COOLING SYSTEM
- Coolant heater
- Low coolant temperature alarm
- Low coolant level shutdown
- Radiator transition flange

REMOTE ANNUNCIATORS
- 16-channel remote annunciator panel (supplied loose)

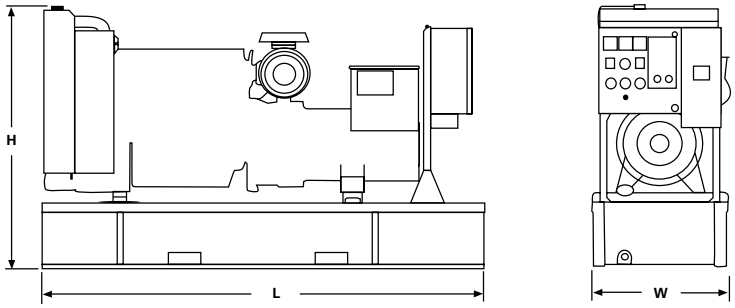
MISCELLANEOUS ACCESSORIES
- Toolkit
- Additional operator's manual pack
- Special enclosure color
- UL listing
- CSA certification
- French or Spanish language labels

EXTENDED SERVICE CONTRACTS
- Extended Service Coverage available

TESTING
- Factory witness test (restricted to 6 hours – full load, 1.0 pf)

* Some options may not be available on all models. Not all options are listed.

GENERATOR SET DIMENSIONS AND WEIGHTS



Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight kg (lb)*
D60-4S	2347 (92.4)	1100 (43.3)	1321 (52.0)	1342 (2,959)
D75-4S	2347 (92.4)	1100 (43.3)	1321 (52.0)	1382 (3,047)
D80-4	2347 (92.4)	1100 (43.3)	1321 (52.0)	1432 (3,157)
D90-4S	2347 (92.4)	1100 (43.3)	1321 (52.0)	1432 (3,157)
D100-4	2347 (92.4)	1100 (43.3)	1321 (52.0)	1432 (3,157)
D100-4S	2347 (92.4)	1100 (43.3)	1321 (52.0)	1502 (3,311)

NOTE: General configuration not to be used for installation. See specific dimensional drawings for detail.

*Includes oil and coolant

SPECIFICATIONS

GENERATOR

Voltage regulation ..... ± 0.5% 3-phase and ± 1.0% single phase at steady state from no load to full load
Frequency ..... ± 0.25% for constant load, no load to full load
Waveform distortion ..... THD < 4%, at no load
Radio interference ..... Compliance with EN61000-6
Telephone interference ..... TIF < 50, THF < 2%
Overspeed limit ..... 2250 rpm
Insulation ..... Class H
Temperature rise ..... Within Class H limits
Available voltages ..... 1-phase – 120/240, 115/230, 110/220
3-phase – 277/480, 266/460, 120/240, 127/220, 120/208, 347/600
Deration ..... Consult factory for available outputs
Ratings ..... At 30° C (86° F), 152.4 m (500 ft), 60% humidity, 1.0 pf (1-phase), 0.8 pf (3-phase)

ENGINE

Manufacturer ..... Caterpillar
Type 4-cycle
Bore – mm (in) 105.0 (4.13)
Stroke – mm (in) 127.0 (5.00)
Governor Type ..... Electronic
Class G2
Piston speed – m/sec (ft/sec) 7.62 (25.0)
Engine speed – rpm 1800
Air cleaner type ..... Dry, replaceable paper element type with restriction indicator

D80-4, D60-4S, D75-4S – C4.4

Aspiration ..... Turbocharged
Cylinder configuration ..... In-line 4
Displacement – L (cu in) 4.4 (269)
Compression ratio 19.3:1
Max power at rated rpm – kW (hp)
  Standby 94 (126)
  Prime 85 (114.5)
BMEP – kPa (psi)
  Standby 1422 (206)
  Prime 1292 (187)
Regenerative power – kW (hp) 13.8 (18.5)

D90-4S, D100-4, D100-4S – C4.4

Aspiration ..... Turbocharged
Cylinder configuration ..... In-line 4
Displacement – L (cu in) 4.4 (269)
Compression ratio 19.3:1
Max power at rated rpm – kW (hp)
  Standby 117.5 (157.5)
  Prime 106.9 (143.2)
BMEP – kPa (psi)
  Standby 1778 (258)
  Prime 1616 (234)
Regenerative power – kW (hp) 13.8 (18.5)

CONTROL PANEL

- Heavy duty sheet steel enclosure with lockable hinged door
- Vibration isolated from generating set
- LCD display
- AC metering
- DC metering
- Fail to start shutdown
- Low oil pressure shutdown
- High engine temperature
- Low/high battery voltage
- Underspeed/overspeed
- Loss of engine speed detection
- 2 spare fault channels
- 20 event fault log
- 2 LED status indicators
- Lockdown emergency stop push button

RATING DEFINITIONS AND CONDITIONS

Standby – Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator is peak rated (as defined in ISO8528-3).

Prime – Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation to the annual hours of operation and the generator set can supply 10 percent overload power for 1 hour in 12 hours.

D80-4 (3-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating	kW	kVA	80	100	72	90
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CG4/CH4						
Total oil capacity	L	U.S. gal	7.9	1.4	7.9	1.4
Oil pan	L	U.S. gal	6.4	1.2	6.4	1.2
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	23.8	6.3	21.7	5.7
75% load	L/hr	gal/hr	18.5	4.2	16.9	4.5
50% load	L/hr	gal/hr	13.2	3.5	12.2	3.2
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	4.4	7.9	4.0	7.0
Heat rejected to coolant at rated power	kW	Btu/min	52.5	2,986	47.8	2,719
Total heat radiated to room at rated power	kW	Btu/min	15.7	893	13.8	785
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	5.95	218	5.9	207
Maximum air cleaner restriction	kPa	in H_2O	5	20	5	20
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	26.4	933	26.4	933
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.5	15	4.5
Exhaust flow at rated kW	m^3/min	cfm	13.47	565	14.5	514
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	544	1,011	495	919
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		96		96	

Generator Technical Data		277/480V	266/460V	127/220V	120/240V 120/208V	347/600V
Motor Starting Capability: (kVA)						
(30% voltage dip)	Self excited	206	191	177	160	N/A
	PM excited**	271	252	233	211	271
	AREP excited	271	252	233	211	271
Full Load Efficiencies:	Standby	91.7	91.4	91.3	90.9	91.7
	Prime	91.8	91.8	91.5	91.3	91.8
Reactances (per unit):	X_d	2.87	3.12	3.41	3.82	2.87
	X'_d	0.11	0.12	0.13	0.15	0.11
Reactances shown are applicable to the standby rating.	X''_d	0.067	0.073	0.079	0.089	0.067
	X_q	1.72	1.87	2.05	2.29	1.72
	X''_q	0.083	0.090	0.099	0.110	0.083
	X_2	0.075	0.082	0.089	0.100	0.075
	X_0	0.004	0.004	0.005	0.005	0.004
Time Constants:		t'_d 100 ms	t''_d 10 ms	t'_{do} 2555 ms		t_a 15 ms

* dB(A) levels are for guidance only
** With PMG Excited Option AVR12

D60-4S (1-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating (at 240V)	kW	kVA	60	60	54	54
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CG-4/CH4						
Total oil capacity	L	U.S. gal	7.9	1.4	7.9	1.4
Oil pan	L	U.S. gal	6.4	1.2	6.4	1.2
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	19.1	5.0	17.5	4.6
75% load	L/hr	gal/hr	14.8	3.9	13.6	3.6
50% load	L/hr	gal/hr	10.8	2.9	10.0	2.6
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	4.4	7.7	4.0	7.0
Heat rejected to coolant at rated power	kW	Btu/min	52.5	2,986	47.8	2,719
Total heat radiated to room at rated power	kW	Btu/min	15.6	887	14.1	802
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	5.95	210	5.4	191
Maximum air cleaner restriction	kPa	in H_2O	7.5	30.1	7.5	30.1
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	19.2	678	19.2	678
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15.0	4.5	15.0	4.5
Exhaust flow at rated kW	m^3/min	cfm	16.0	565	14.5	514
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	544	1,011	495	919
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		96		96	

Generator Technical Data		120/240V	115/230V	110/220V
Motor Starting Capability: (30% voltage dip)	(kVA)			
	Self excited	128	119	101
	PM excited**	128	119	101
Full Load Efficiencies:	Standby	88.3	87.6	86.9
	Prime	88.3	87.6	86.9
Reactances (per unit):	X_d	2.14	2.33	2.55
Reactances shown	X'_d	0.17	0.18	0.20
are applicable to	X''_d	0.086	0.093	0.102
the standby rating.	X_q	1.29	1.41	1.54
	X''_q	0.105	0.115	0.125
Time Constants:		t'_d 80 ms	t''_d 7 ms	t'_{do} 1354 ms / t_a 12 ms

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** With PMG Excited Option AVR12

D75-4S (1-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating (at 240V)	kW	kVA	75	75	67.5	67.5
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CF-4						
Total oil capacity	L	U.S. gal	7.9	1.4	7.9	1.4
Oil pan	L	U.S. gal	6.4	1.2	6.4	1.2
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	22.9	6.0	20.9	5.5
75% load	L/hr	gal/hr	17.8	4.7	16.3	4.3
50% load	L/hr	gal/hr	12.7	3.4	12.0	3.2
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	4.4	7.9	4.0	7.2
Heat rejected to coolant at rated power	kW	Btu/min	52.5	2,986	47.8	2,719
Total heat radiated to room at rated power	kW	Btu/min	17.0	967	15.1	859
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	7.79	279	7.38	260
Maximum air cleaner restriction	kPa	in H_2O	5.0	20	5.0	20
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	19.2	678	19.2	678
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.5	15	4.5
Exhaust flow at rated kW	m^3/min	cfm	22.5	794	20.0	705
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	580	1,076	540	1,004
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		95		95	

Generator Technical Data		120/240V	115/230V	110/220V
Motor Starting Capability: (kVA)				
(30% voltage dip)	Self excited	170	160	150
	PM excited**	170	160	150
Full Load Efficiencies:	Standby	88.9	88.4	87.7
	Prime	89.3	88.8	88.2
Reactances (per unit):	X_d	2.02	2.20	2.40
Reactances shown	X'_d	0.15	0.16	0.18
are applicable to	X''_d	0.077	0.084	0.092
the standby rating.	X_q	1.21	1.32	1.44
	X''_q	0.095	0.103	0.113
Time Constants:		t'_d 80 ms	t''_d 7 ms	t'_{do} 1431 ms	t_a 12 ms

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** With PMG Excited Option AVR12

D90-4S (1-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating (at 240V)	kW	kVA	90	90	82	82
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CG4/CH4						
Total oil capacity	L	U.S. gal	7.9	1.4	7.9	1.4
Oil pan	L	U.S. gal	6.4	1.2	6.4	1.2
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	27.3	7.2	24.9	6.6
75% load	L/hr	gal/hr	20.9	5.5	19.0	5.0
50% load	L/hr	gal/hr	14.7	3.9	14.0	3.7
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	5.5	9.9	5.0	9.0
Heat rejected to coolant at rated power	kW	Btu/min	65.6	3,731	59.7	3,396
Total heat radiated to room at rated power	kW	Btu/min	21.2	1,206	18.8	1,069
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	7.79	279	7.38	260
Maximum air cleaner restriction	kPa	in H_2O	5.0	20	5.0	20
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	26.4	933	26.4	933
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.5	15	4.5
Exhaust flow at rated kW	m^3/min	cfm	22.5	794	20.0	705
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	580	1,076	540	1,004
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		95		95	

Generator Technical Data		120/240V	115/230V	110/220V
Motor Starting Capability: (30% voltage dip)	(kVA)			
	Self excited	145	135	126
	PM excited**	145	135	126
Full Load Efficiencies:	Standby	88.6	88	87.8
	Prime	89.1	88.5	87.8
Reactances (per unit):	X_d	2.99	3.25	3.55
Reactances shown are applicable to the standby rating.	X'_d	0.25	0.28	0.30
	X''_d	0.148	0.161	0.176
	X_q	1.80	1.96	2.14
	X''_q	0.184	0.201	0.219
Time Constants:		t'_d 165 ms	t''_d 13 ms	t'_{do} 2555 ms / t_a 20 ms

* dB(A) levels are for guidance only
** With PMG Excited Option AVR12

D100-4 (3-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating	kW	kVA	100	125.0	90	112.5
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CG4/CH4						
Total oil capacity	L	U.S. gal	8.0	2.1	8.0	2.1
Oil pan	L	U.S. gal	5.5	1.4	5.5	1.4
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	29.8	7.9	26.8	7.1
75% load	L/hr	gal/hr	22.5	5.9	20.4	5.4
50% load	L/hr	gal/hr	15.8	4.2	14.6	3.9
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	Ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	5.5	9.9	5.0	9.0
Heat rejected to coolant at rated power	kW	Btu/min	65.6	3,731	59.7	3,396
Total heat radiated to room at rated power	kW	Btu/min	20.7	1,177	18.3	1,041
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	78	276	7.75	274
Maximum air cleaner restriction	kPa	in H_2O	8	32	8	32
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	26.4	933	26.4	933
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.5	15	4.5
Exhaust flow at rated kW	m^3/min	cfm	20.4	721	18.4	651
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	574	1,065	517	963
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		95		95	

Generator Technical Data		277/480V	266/460V	127/220V	120/240V 120/208V	347/600V
Motor Starting Capability: (kVA)						
(30% voltage dip)	Self excited	206	191	177	160	N/A
	PM excited**	271	252	233	211	271
	AREP excited	271	252	233	211	271
Full Load Efficiencies:	Standby	91.0	90.9	90.5	90.0	91.0
	Prime	91.4	91.0	90.9	90.4	91.4
Reactances (per unit):	X_d	3.58	3.90	4.26	4.77	3.58
	X'_d	0.14	0.15	0.17	0.19	0.14
Reactances shown are applicable to the standby rating.	X''_d	0.083	0.091	0.099	0.111	0.083
	X_q	2.15	2.34	2.56	2.86	2.15
	X''_q	0.104	0.113	0.123	0.138	0.104
	X_2	0.094	0.102	0.112	0.125	0.094
	X_0	0.005	0.005	0.006	0.006	0.005
Time Constants:		t'_d 100 ms	t''_d 10 ms	t'_{do} 2555 ms		t_a 15 ms

* dB(A) levels are for guidance only
** With PMG Excited Option AVR12

D100-4S (1-Phase)

Materials and specifications are subject to change without notice.

Generator Set Technical Data – 1800 rpm/60 Hz			Standby		Prime	
Power Rating (at 240V)	kW	kVA	100	100	90	90
Lubricating System						
Type: full pressure						
Oil filter: spin-on, full flow						
Oil cooler: watercooled						
Oil type required: API CF-4						
Total oil capacity	L	U.S. gal	7.9	1.4	7.9	1.4
Oil pan	L	U.S. gal	6.4	1.2	6.4	1.2
Fuel System						
Generator set fuel consumption						
100% load	L/hr	gal/hr	29.6	7.8	26.8	7.1
75% load	L/hr	gal/hr	22.4	5.9	20.4	5.4
50% load	L/hr	gal/hr	15.9	4.2	15.0	4.0
Engine Electrical System						
Voltage/ground: 12/negative						
Battery charging generator ampere rating	amps		65		65	
Cooling System						
Water pump type: centrifugal						
Radiator system capacity incl. engine	L	U.S. gal	12.6	3.3	12.6	3.3
Maximum coolant static head	m H_2O	ft H_2O	10.2	33.5	10.2	33.5
Coolant flow rate	L/hr	U.S. gal/hr	11 640	3,075	11 640	3,075
Minimum temperature to engine	°C	°F	70	158	70	158
Temperature rise across engine	°C	°F	5.5	9.9	5.0	9.0
Heat rejected to coolant at rated power	kW	Btu/min	65.6	3,731	59.7	3,396
Total heat radiated to room at rated power	kW	Btu/min	21.2	1,206	18.8	1,069
Radiator fan load	kW	hp	5.0	6.7	5.0	6.7
Air Requirements						
Combustion air flow	m^3/min	cfm	7.79	279	7.38	260
Maximum air cleaner restriction	kPa	in H_2O	5.0	20	5.0	20
Radiator cooling air (zero restriction)	m^3/min	cfm	276	9,746	276	9,746
Generator cooling air	m^3/min	cfm	26.4	933	26.4	933
Allowable air flow restriction (after radiator)	kPa	in H_2O	0.120	0.48	0.120	0.48
Cooling airflow (@ rated speed)						
Rate with restriction	m^3/min	cfm	244	8,616	244	8,616
Exhaust System						
Maximum allowable backpressure	kPa	in Hg	15	4.5	15	4.5
Exhaust flow at rated kW	m^3/min	cfm	22.5	794	20.0	705
Exhaust temperature at rated kW –						
Dry exhaust	°C	°F	580	1,076	540	1,004
Generator Set Noise Rating*						
(without attenuation) at 1 m (3 ft)	dB(A)		95		95	

Generator Technical Data		120/240V	115/230V	110/220V
Motor Starting Capability: (kVA)				
(30% voltage dip)	Self excited	188	174	162
	PM excited**	188	174	162
Full Load Efficiencies:	Standby	90.5	90.0	89.4
	Prime	90.5	90.0	89.4
Reactances (per unit):	X_d	2.67	2.91	3.18
Reactances shown are applicable to the standby rating.	X'_d	0.21	0.23	0.25
	X''_d	0.127	0.138	0.151
	X_q	1.60	1.74	1.90
	X''_q	0.151	0.164	0.180
Time Constants:		t'_d 165 ms	t''_d 13 ms	t'_{do} 2734 ms / t_a 20 ms

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