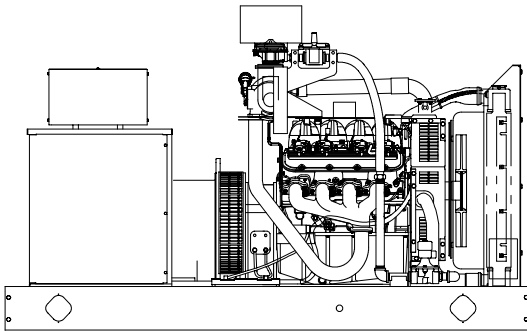




### Ratings Range

		60 Hz	50 Hz
Standby:	kW	95-130	84-104
	kVA	95-163	84-130
Prime:	kW	90-115	77-96
	kVA	90-144	77-120



### Standard Features

- Kohler Co. provides one-source responsibility for the generating system and accessories.
- The generator set and its components are prototype-tested, factory-built, and production-tested.
- The 60 Hz generator set offers a UL-2200 listing.
- The generator set accepts rated load in one step.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended warranties are also available.
- Generator features:
  - Kohler's unique Fast-Response™ excitation system delivers the fastest voltage response in the industry.
  - The brushless, rotating-field generator has broadrange reconnectability.
  - Kohler's permanent magnet-excited generator (PMG) provides superior short-circuit capability.
- Other features:
  - A rugged industrial gas engine delivers rated power at 1800 rpm (60 Hz) and 1500 rpm (50 Hz).
  - Controllers are available for all applications. See controller features inside.
  - The electronic, isochronous governor incorporates an integrated drive-by-wire throttle body actuator delivering precise frequency regulation.

### Generator Ratings

Generator	Voltage	Ph	Hz	Natural Gas				LP Gas			
				130°C Rise Standby Rating		105°C Rise Prime Rating		130°C Rise Standby Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
4S11	120/208	3	60	125/156	434	115/144	399	105/131	364	96/120	333
	127/220	3	60	125/156	410	115/144	377	105/131	344	96/120	315
	120/240	3	60	125/156	376	115/144	346	105/131	316	96/120	289
	120/240	1	60	95/95	396	90/90	375	95/95	396	86/86	358
	139/240	3	60	125/156	376	115/144	346	105/131	316	96/120	289
	220/380	3	60	120/150	228	110/138	209	105/131	199	96/120	182
	277/480	3	60	125/156	188	115/144	173	105/131	158	96/120	144
	347/600	3	60	125/156	150	115/144	138	105/131	126	96/120	115
	110/190	3	50	104/130	395	96/120	365	96/120	365	88/110	334
	115/200	3	50	104/130	375	96/120	346	96/120	346	88/110	318
	120/208	3	50	104/130	361	96/120	333	96/120	333	88/110	305
	110/220	3	50	104/130	341	96/120	315	96/120	315	88/110	289
	110/220	1	50	84/84	382	77/77	350	84/84	382	77/77	350
	220/380	3	50	104/130	198	96/120	182	96/120	182	88/110	167
230/400	3	50	104/130	188	96/120	173	96/120	173	88/110	159	
240/416	3	50	104/130	180	96/120	167	96/120	167	88/110	153	
4S13	120/208	3	60	130/163	451	115/144	399	110/138	382	100/125	347
	127/220	3	60	130/163	426	115/144	377	110/138	361	100/125	328
	120/240	3	60	130/163	391	115/144	346	110/138	331	100/125	301
	120/240	1	60	100/100	417	91/91	379	100/100	417	91/91	379
	139/240	3	60	130/163	391	115/144	346	110/138	331	100/125	301
	220/380	3	60	125/156	237	115/144	218	110/138	209	100/125	190
	277/480	3	60	130/163	195	115/144	173	110/138	165	100/125	150
	347/600	3	60	130/163	156	115/144	138	110/138	132	100/125	120
	110/190	3	50	104/130	395	96/120	365	96/120	365	88/110	334
	115/200	3	50	104/130	375	96/120	346	96/120	346	88/110	318
	120/208	3	50	104/130	361	96/120	333	96/120	333	88/110	305
	110/220	3	50	104/130	341	96/120	315	96/120	315	88/110	289
	110/220	1	50	90/90	409	80/80	364	90/90	409	80/80	364
	220/380	3	50	104/130	198	96/120	182	96/120	182	88/110	167
230/400	3	50	104/130	188	96/120	173	96/120	173	88/110	159	
240/416	3	50	104/130	180	96/120	167	96/120	167	88/110	153	
4V11	120/240	1	60	110/110	458	105/105	438	100/100	417	91/91	379
	110/220	1	50	96/96	436	87/87	395	88/88	400	80/80	364

**RATINGS:** All three-phase units are rated at 0.8 power factor. All single-phase units are rated at 1.0 power factor. **Standby Ratings:** 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. There is no overload capability for this rating. Ratings are in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. **Prime Power Ratings:** 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. Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. **GENERAL GUIDELINES FOR DERATION:** *Altitude:* Derate 0.5% per 100 m (328 ft.) elevation above 1500 m (4921 ft.) up to a maximum elevation of 3000 m (9842 ft.). *Temperature:* Derate 2.0% per 10°C (18°F) temperature above 25°C (77°F) up to 50°C (122°F).

# Alternator Specifications

Specifications	Generator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet
Leads: quantity, type	
4S11, 4S13 .....	12, Reconnectable
4V11 .....	4, 110-120/220-240
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMA MG1
Material .....	Class H
Temperature rise .....	130°C, Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Voltage regulation, no-load to full-load	3-phase, ±2%
Unbalanced load capability	100% of Rated Standby Current
One-step load acceptance	100% of Rating
Peak motor starting kVA:	(35% dip for voltages below)
480 V, 380 V 4S11 (12 lead) .....	460 (60Hz), 350 (50Hz)
480 V, 380 V 4S13 (12 lead) .....	510 (60Hz), 370 (50Hz)
240 V, 220 V 4V11 (4 lead) .....	— (60Hz), — (50Hz)

- 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.
- Sustained short-circuit current enabling downstream circuit breakers to trip without collapsing the generator field.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.
- Solid-state, volts-per-hertz voltage regulator with ±2% no-load to full-load regulation.
- Fast-Response™ brushless alternator with brushless exciter for excellent load response.

## Application Data

### Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	General Motors	
Engine: model, type	Industrial Powertrain, Vortec 8.1 L, 4-Cycle, Turbocharged	
Cylinder arrangement	V-8	
Displacement, L (cu. in.)	8.1 (496)	
Bore and stroke, mm (in.)	108 x 111 (4.25 x 4.37)	
Compression ratio	9.1:1	
Piston speed, m/min. (ft./min.)	399 (1311)	332 (1092)
Main bearings: quantity, type	Alum. Lead Silicon Alloy	
Rated rpm	1800	1500
Max. power at rated rpm, kW (HP)	146 (195)	118 (158)
Cylinder head material	Cast Iron	
Piston type and material	Strutless Flat Top, Hypereutectic Cast Alum.	
Crankshaft material	Cast Nodular Undercut Rolled Fillet	
Valve (exhaust) material	Int.-A193 Exh. Inconel	
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.5%	
Frequency	Field-Convertible	
Air cleaner type, all models	Dry	

### Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	26.1 (920)	18.7 (660)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	649 (1200)	
Maximum allowable back pressure, kPa (in. Hg)	10.2 (3.0)	
Exhaust outlet size at engine hookup, mm (in.)	71 (2.8)	

### Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Ignition system	Individual Coil Near Plug Ignition	
Battery charging alternator:		
Ground (negative/positive) .....	Negative	
Volts (DC) .....	12	
Ampere rating .....	70	
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Qty., rating for -18°C (0°F) .....	1, 630	
Battery voltage (DC)	12	

### Fuel

Fuel System	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply line inlet	1.5 NPTF	
Natural gas/LPG fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.74-2.74 (7.0-11.0)	

### Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	8.0 (8.5)	
Oil pan capacity with filter, L (qt.)	8.5 (9.0)	
Oil filter: quantity, type	1, Cartridge	

# Application Data

## Cooling (Standard Radiator)

Cooling System	60 Hz	50 Hz
Ambient temperature, °C (°F)*	50 (122)	
Engine jacket water capacity, L (gal.)	10.0 (2.6)	
Radiator system capacity, including engine, L (gal.)	24.2 (6.4)	
Engine jacket water flow, Lpm (gpm)	125 (33)	102 (27)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	110 (6260)	72 (4100)
Heat rejected to engine oil at rated kW, kW (Btu/min.)	1.4 (81)	1.2 (68)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	599 (23.6)	
Fan, kWm (HP)	10.4 (14.0)	6.0 (8.1)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)	

\* Weather housing with roof-mounted silencer and enclosure with enclosed silencer reduce ambient temperature capability by 10°C (18°F).

Remote Radiator System†	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:		
Water inlet, ID hose, mm (in.) . . . . .	44.45 (1.75)	
Water outlet, ID hose, mm (in.) . . . . .	38.10 (1.50)	
Static head allowable above engine, kPa (ft. H <sub>2</sub> O)	4.32 (17.0)	

† Contact your local distributor for cooling system options and specifications based on your specific requirements.

City Water Cooling (CWC) System	60 Hz	50 Hz
Exhaust manifold type	Dry	
System capacity, L (gal.)	—	
City water consumption at 10°C (50°F), Lpm (gpm)	—	
Connection sizes:		
Water inlet, mm (in.) . . . . .	—	—
Water outlet, mm (in.) . . . . .	—	—

## Operation Requirements

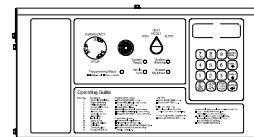
Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)‡	306 (10800)	232 (8200)
Cooling air required for generator set when equipped with CWC or remote radiator, based on 14°C (25°F) rise and ambient temperature of 29°C (85°F), m <sup>3</sup> /min. (cfm)	307 (10840)	193 (6820)
Combustion air, m <sup>3</sup> /min. (cfm)	8.8 (312)	6.2 (220)
Heat rejected to ambient air:		
Engine, kW (Btu/min.) . . . . .	72.0 (4100)	44.1 (2510)
Generator, kW (Btu/min.) . . . . .	13.7 (780)	9.8 (560)

‡ Air density = 1.20 kg/m<sup>3</sup> (0.075 lbm/ft<sup>3</sup>)

Fuel Consumption§	60 Hz	50 Hz
<b>Natural Gas, m<sup>3</sup>/hr. (cfh) at % load</b>		
<b>Standby Rating</b>		
100%	46.8(1651)	39.6(1400)
75%	38.9(1372)	31.3(1105)
50%	27.9 (984)	22.8 (806)
25%	18.4 (650)	15.1 (535)
0%	10.4 (369)	8.8 (310)
<b>Natural Gas, m<sup>3</sup>/hr. (cfh) at % load</b>		
<b>Prime Rating</b>		
100%	43.9(1549)	36.6(1293)
75%	35.8(1266)	29.0(1023)
50%	26.1 (923)	21.4 (757)
25%	17.7 (624)	14.6 (515)
0%	10.4 (369)	8.8 (310)
<b>LP Gas, m<sup>3</sup>/hr. (cfh) at % load</b>		
<b>Standby Rating</b>		
100%	16.5 (582)	14.4 (509)
75%	13.3 (469)	11.8 (416)
50%	10.0 (354)	8.4 (298)
25%	6.4 (226)	5.8 (205)
0%	3.7 (130)	3.1 (108)
<b>LP Gas, m<sup>3</sup>/hr. (cfh) at % load</b>		
<b>Prime Rating</b>		
100%	15.3 (541)	13.5 (475)
75%	12.4 (438)	10.9 (384)
50%	9.4 (331)	8.0 (281)
25%	6.1 (217)	5.6 (196)
0%	3.7 (130)	3.1 (108)

§ Fuel consumption is based on 1015 Btu/standard cu. ft. natural gas.

## Controllers



### Available Controllers

#### Decision-Maker™ 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Generator safeguard circuit protection. 12- or 24-volt engine electrical system capability. Remote start, remote annunciation, and remote communication options. Refer to G6-46 for additional controller features and accessories.

#### Decision-Maker™ 3+, 16-Light Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Microprocessor logic, AC meters, and engine gauge features. 12- or 24-volt engine electrical system capability. Remote start, prime power, and remote annunciation options. Refer to G6-30 for additional controller features and accessories.

## Standard Features and Accessories

### Additional Standard Features

- Alternator Protection (standard with Decision-Maker™ 550)
- Battery Rack and Cables
- Electronic, Isochronous Governor
- Integral Vibration Isolation
- Low Fuel Pressure Shutdown
- Oil Drain Extension
- Operation and Installation Literature
- Pilot-Excited, Permanent-Magnet Generator (PMG)

### Accessories

#### Enclosed Unit

- Weather Housing (includes critical silencer, mounting, tailpipe, and skid end caps)
- Sound Enclosure

#### Open Unit

- Exhaust Silencer, Critical (kits: PA-324292, PA-324470)
- Flexible Exhaust Connector, Stainless Steel

#### Cooling System

- Block Heater
- City Water Cooling
- Radiator Duct Flange
- Remote Radiator Cooling

#### Fuel System

- Flexible Fuel Lines
- Gas Strainer
- LP Gas Liquid Withdrawal
- Manual Valve
- Secondary Gas Solenoid Valve

#### Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater

#### Engine and Generator

- Air Cleaner Restrictor Indicator
- Bus Bar Kits
- CSA Certification
- Generator Strip Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)
- Optional Generators
- Rated Power Factor Testing
- Rodent Guards
- Safeguard Breaker (not available with Decision-Maker™ 550)
- Voltage Regulation, 1%
- Voltage Regulator Sensing, Three-Phase

#### Literature and Maintenance

- General Maintenance Literature Kit
- Maintenance Kit (includes standard air, oil, and fuel filters)
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

#### Controller

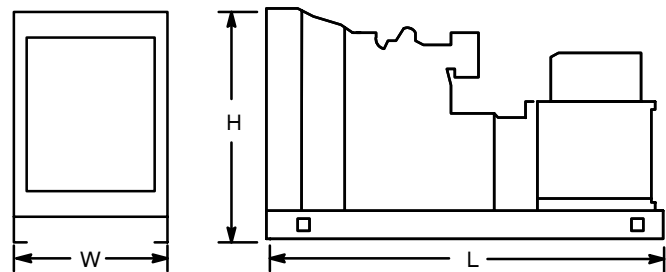
- Common Failure Relay Kit
- Communication Products and PC Software (Decision-Maker™ 550 controller only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Engine Prealarm Sender Kit
- Local Emergency Stop Kit
- Prime Power Switch (Decision-Maker™ 550 controller only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cables
- Run Relay Kit

#### Miscellaneous Accessories

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### Dimensions and Weights

Overall Size, L x W x H, mm (in.):  
 Wide Skid 2400 x 1040 x 1484 (94.5 x 40.9 x 58.4)  
 Narrow Skid 2400 x 865 x 1484 (94.5 x 34.1 x 58.4)  
 Weight (radiator model), wet, kg (lb.): 1134 (2500)



NOTE: This drawing is provided for reference only and should not be used for planning installation. Contact your local distributor for more detailed information.

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