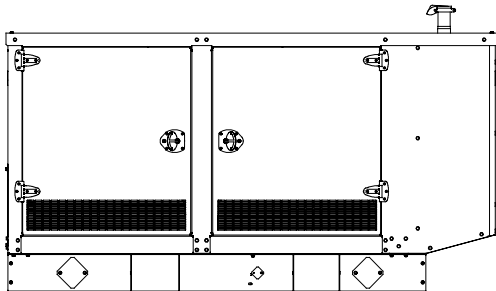




**Ratings Range**

Standby:	kW kVA	60 Hz	50 Hz
		44-64 44-80	40-53 40-66



**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.
- UL 2200 listing is available. (60 Hz only)
- The generator set accepts rated load in one step.
- The 60 Hz generator set engine is certified by the Environmental Protection Agency (EPA) to conform to the New Source Performance Standard (NSPS) for stationary spark-ignited emissions.
- A one-year limited warranty covers all systems and components. Two- and five-year extended warranties are also available.

**Generator Set Ratings**

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise Standby Rating		LPGas 130°C Rise Standby Rating	
				kW/kVA	Amps	kW/kVA	Amps
4P7BX	120/208	3	60	54/68	189	54/68	189
	127/220	3	60	57/71	186	57/71	186
	120/240	3	60	54/68	164	54/68	164
	120/240	1	60	44/44	183	44/44	183
	139/240	3	60	60/75	180	60/75	180
	220/380	3	60	49/61	93	49/61	93
	277/480	3	60	60/75	90	60/75	90
4P10X	110/190	3	50	44/55	167	44/55	167
	115/200	3	50	47/59	170	47/59	170
	120/208	3	50	46/58	161	46/58	161
	110/220	1	50	40/40	182	40/40	182
	110/220	3	50	44/55	144	44/55	144
	220/380	3	50	44/55	83	44/55	83
	230/400	3	50	47/59	85	47/59	85
4Q10X	240/416	3	50	46/58	80	46/58	80
	120/208	3	60	60/75	208	63/79	219
	127/220	3	60	60/75	197	64/80	210
	120/240	3	60	60/75	180	63/79	189
	120/240	1	60	59/59	246	61/61	254
	139/240	3	60	60/75	180	64/80	192
	220/380	3	60	60/75	114	63/79	120
4P10X	277/480	3	60	60/75	90	64/80	96
	110/190	3	50	48/60	182	53/66	200
	115/200	3	50	48/60	176	53/66	191
	120/208	3	50	48/60	169	53/66	183
	110/220	1	50	50/50	227	52/52	236
	110/220	3	50	48/60	157	53/66	173
	220/380	3	50	48/60	91	53/66	100
4Q10X	230/400	3	50	48/60	87	53/66	95
	240/416	3	50	48/60	85	53/66	92
4Q10X	120/240	1	60	60/60	250	60/60	250
	110/220	1	50	53/53	241	53/53	241

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. 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 DERATING: *Altitude:* Derate 1.3% per 100 m (328 ft.) elevation above 200 m (656 ft.). *Temperature:* Derate 3.0% per 10°C (18°F) temperature above 25°C (77°F). For dual fuel engines, use the natural gas ratings for both the primary and secondary fuels.

# Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent Magnet
Leads: quantity, type	12, Reconnectable
4P7BX, 4P10X	4, 110-120/220-240
4QX	Solid State, Volts/Hz
Voltage regulator	NEMA MG1
Insulation:	Class H
Material	130°C, Standby
Temperature rise	1, Sealed
Bearing: quantity, type	Flexible Disc
Coupling	Full
Amortisseur windings	Controller Dependent
Voltage regulation, no-load to full-load	100% of Rated Standby Current
Unbalanced load capability	100% of Rating
One-step load acceptance	(35% dip for voltages below)
Peak motor starting kVA:	180 (60 Hz), 136 (50 Hz)
480 V, 400 V 4P7BX (12 lead)	275 (60 Hz), 220 (50 Hz)
480 V, 400 V 4P10X (12 lead)	144 (60 Hz), 132 (50 Hz)
240 V, 220 V 4Q10X (4 lead)	

- The unique Fast-Response™ X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
- Brushless, rotating-field alternator with broadrange reconnectability.
- 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 alternator field.
- Self-ventilated and drip-proof 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.

## Application Data

### Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	General Motors	
Engine: model, type	Industrial Powertrain Vortec 5.7 L, 4-Cycle Natural Aspiration	
Cylinder arrangement	V-8	
Displacement, L (cu. in.)	5.7 (350)	
Bore and stroke, mm (in.)	101.6 x 88.4 (4.00 x 3.48)	
Compression ratio	9.1:1	
Piston speed, m/min. (ft./min.)	318 (1044)	265 (870)
Main bearings: quantity, type	5, M400 Copper Lead	
Rated rpm	1800	1500
Max. power at rated rpm, kW (HP)	78.3 (105)	65.6 (88)
Cylinder head material	Cast Iron	
Piston type and material	High Silicon Aluminum	
Crankshaft material	Nodular Iron	
Valve (exhaust) material	Forged Steel	
Governor type	Electronic	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.5%	
Frequency	Fixed	
Air cleaner type, all models	Dry	

### Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	16.4 (580)	13.6 (480)
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.)	76 (3.0) OD	

### Engine Electrical

Engine Electrical System	
Ignition system	Electronic
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)	One, 630
Battery voltage (DC)	12

### Fuel

Fuel System	
Fuel type	LP Gas, Natural Gas, or Dual Fuel
Fuel supply line inlet	1 1/4 NPT
Natural gas fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.74-2.74 (7-11)
LPG vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.24-2.74 (5-11)
Dual fuel engine, LPG vapor withdrawal fuel supply pressure, kPa (in. H <sub>2</sub> O)	1.24 (5)

Fuel Composition Limits *	Nat. Gas	LP Gas
Methane, % by volume	90 min.	—
Ethane, % by volume	4.0 max.	—
Propane, % by volume	1.0 max.	85 min.
Propene, % by volume	0.1 max.	5.0 max.
C <sub>4</sub> and higher, % by volume	0.3 max.	2.5 max.
Sulfur, ppm mass	25 max.	
Lower heating value, MJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	33.2 (890)	84.2 (2260)

\* Fuels with other compositions may be acceptable. If your fuel is outside the listed specifications, contact your local distributor for further analysis and advice.

# Application Data

## Lubrication

### Lubricating System

Type	Full Pressure
Oil pan capacity, L (qt.)	4.7 (5.0)
Oil pan capacity with filter, L (qt.)	6.2 (6.5)
Oil filter: quantity, type	1, Cartridge

## Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	45 (113)	
Engine jacket water capacity, L (gal.)	6.8 (1.8)	
Radiator system capacity, including engine, L (gal.)	20.8 (5.5)	
Engine jacket water flow, Lpm (gpm)	117.3 (31)	98.4 (26)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	54.8 (3120)	45.7 (2600)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	533 (21)	
Fan, kWm (HP)	4.5 (6.0)	2.6 (3.5)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)	

## Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)†	170 (6000)	136 (4800)
Combustion air, m <sup>3</sup> /min. (cfm)	5.2 (185)	4.4 (155)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	30.9 (1760)	26.5 (1510)
Alternator, kW (Btu/min.)	7.7 (440)	6.9 (390)

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

### Fuel Consumption‡

Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	60 Hz	50 Hz
100%	22.4 (790)	18.1 (640)
75%	19.4 (685)	15.6 (550)
50%	14.7 (520)	11.8 (415)
25%	9.9 (350)	7.8 (275)

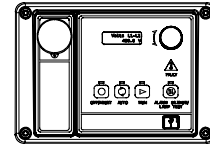
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	60 Hz	50 Hz
100%	9.3 (330)	7.9 (280)
75%	7.1 (250)	6.2 (220)
50%	5.4 (190)	4.7 (165)
25%	3.8 (135)	3.1 (110)

‡ Nominal Fuel Rating: Natural gas, 37 MJ/m<sup>3</sup> (1000 Btu/ft<sup>3</sup>)  
LP Vapor, 93 MJ/m<sup>3</sup> (2500 Btu/ft<sup>3</sup>)

LP vapor conversion factors:

8.58 ft.<sup>3</sup> = 1 lb.  
0.535 m<sup>3</sup> = 1 kg.  
36.39 ft.<sup>3</sup> = 1 gal.

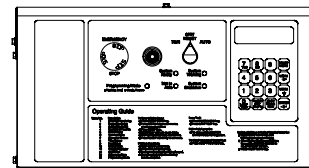
## Controllers



### Decision-Maker® 3000 Controller

Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Digital display and menu control provide easy local data access
  - Measurements are selectable in metric or English units
  - Remote communication through a PC via network or serial configuration
  - Integrated hybrid voltage regulator with ±0.5% regulation
  - Built-in alternator thermal overload protection
- Refer to G6-100 for additional controller features and accessories.



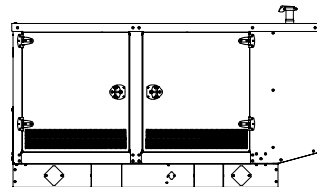
### Decision-Maker® 550 Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities.

- Digital display and keypad provide easy local data access
- Measurements are selectable in metric or English units
- Remote communication thru a PC via network or modem configuration
- Controller supports Modbus® protocol
- Integrated voltage regulator with ±0.25% regulation
- Built-in alternator thermal overload protection

Refer to G6-46 for additional controller features and accessories.

## Sound Enclosure



- Sound level at 7 m (23 ft.) with full load: 69 dB(A)
- Sound attenuating enclosure uses acoustic insulation that meets UL 94 HF1 flammability classification and repels moisture absorption.
- Vertical air inlet and outlet discharge with 90 degree bends to redirect air and reduce noise.
- Internal-mounted critical silencer and flexible exhaust connector.
- Skid-mounted, steel (standard) or aluminum (optional) construction with hinged doors.
- Fade-, scratch-, and corrosion-resistant Kohler® Cashmere Power Armor™ textured e-coat paint.
- Lockable, flush-mounted door latches.
- Certified to withstand 241 kph (150 mph) wind load rating (aluminum enclosures only).

## Additional Standard Features

- Alternator Protection
- Battery Rack and Cables
- Electronic, Isochronous Governor
- Gas Fuel System (includes fuel mixer, electronic secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Steel Sound Enclosure (with enclosed critical silencer)

## Available Options

### Approvals and Listings

- UL 2200 Listing (60 Hz only)
- CSA Approval

### Enclosure

- Aluminum Sound Enclosure (with enclosed critical silencer)

### Fuel System

- Dual Fuel NG/LPG (automatic changeover)
- Flexible Fuel Line (required when the generator set skid is spring mounted)
- Gas Filter
- Additional Gas Solenoid Valve

### Controller

- Common Fault Relay
- Communication Products and PC Software (Decision-Maker® 550 controller only)
- Customer Connection (Decision-Maker® 550 controller only)
- Dry Contact (isolated alarm) (Decision-Maker® 550 controller only)
- Input/Output Module (Decision-Maker® 3000 controller only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel (Decision-Maker® 550 controller only)
- Remote Emergency Stop
- Run Relay

### Cooling System

- Block Heater, 1500 W, 110–120 V
- Block Heater, 1500 W, 190–240 V [recommended for ambient temperatures below 10°C (50°F)]

### Electrical System

- Alternator Strip Heater
- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Line Circuit Breaker (NEMA1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA1 enclosure)

### Miscellaneous

- Air Cleaner Restrictor Indicator
- Engine Fluids Added
- Rated Power Factor Testing
- Rodent Guards

### Literature

- General Maintenance
- Overhaul
- Production

### Warranty

- 2-Year Basic
- 5-Year Basic
- 5-Year Comprehensive

### Other Options

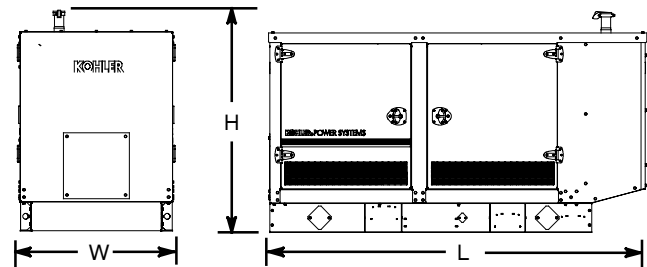
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## Dimensions and Weights

Overall Size, L x W x H, mm (in.): 2585 x 1078 x 1513  
 (102 x 42.4 x 59.6)

Weight, wet, kg (lb.):  
 With steel sound enclosure ..... 1127 (2486)  
 With aluminum sound enclosure ..... 1035 (2283)

Weight includes generator set with engine fluids and largest alternator option, sound enclosure, and silencer.



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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