



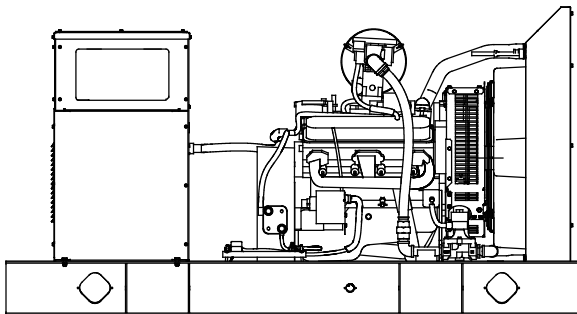
**EPA-Certified for Stationary Applications**

**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.
- The 60 Hz generator set meets NFPA 110, Level 1, when equipped with the necessary accessories and installed per NFPA standards.
- A one-year limited warranty covers all systems and components. Two- and five-year extended limited warranties are also available.
- Alternator features:
  - The unique Fast-Response™ X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.

**Ratings Range**

		60 Hz	50 Hz
Standby:	kW	44-64	40-53
	kVA	44-80	40-66
Prime:	kW	39-56	36-47
	kVA	39-70	36-59



**Generator Set Ratings**

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise Standby Rating		LP Gas 130°C Rise Standby Rating		Natural Gas 105°C Rise Prime Rating		LP Gas 105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
4P7BX	120/208	3	60	54/68	189	54/68	189	48/60	166	48/60	166
	127/220	3	60	57/71	186	57/71	186	51/63	167	51/63	167
	120/240	3	60	54/68	164	54/68	164	48/60	144	48/60	144
	120/240	1	60	44/44	183	44/44	183	39/39	162	39/39	162
	139/240	3	60	60/75	180	60/75	180	54/67	162	54/67	162
	220/380	3	60	49/61	93	49/61	93	44/55	83	44/55	83
	277/480	3	60	60/75	90	60/75	90	54/67	81	54/67	81
	347/600	3	60	57/71	68	57/71	68	51/63	61	51/63	61
	110/190	3	50	44/55	167	44/55	167	39/49	148	39/49	148
	115/200	3	50	47/59	170	47/59	170	41/52	150	41/52	150
	120/208	3	50	46/58	161	46/58	161	40/51	141	40/51	141
	110/220	3	50	44/55	144	44/55	144	39/49	128	39/49	128
	110/220	1	50	40/40	182	40/40	182	36/36	163	36/36	163
	220/380	3	50	44/55	83	44/55	83	39/49	74	39/49	74
230/400	3	50	47/59	85	47/59	85	41/52	75	41/52	75	
240/416	3	50	46/58	80	46/58	80	40/51	70	40/51	70	
4P8X	120/208	3	60	60/75	208	62/78	215	54/67	187	55/68	190
	127/220	3	60	60/75	197	62/78	203	54/67	177	55/68	180
	120/240	3	60	60/75	180	62/78	186	54/67	162	55/68	165
	120/240	1	60	54/54	225	54/54	225	48/48	200	48/48	200
	139/240	3	60	60/75	180	62/78	186	54/67	162	55/68	165
	220/380	3	60	60/75	114	62/78	118	54/67	102	55/68	104
	277/480	3	60	60/75	90	62/78	93	54/67	81	55/68	82
	347/600	3	60	60/75	72	62/78	75	54/67	64	55/68	66
	110/190	3	50	48/60	182	50/62	188	43/54	164	44/56	170
	115/200	3	50	48/60	173	50/62	179	43/54	155	44/56	161
	120/208	3	50	45/56	155	45/56	155	40/50	138	40/50	138
	110/220	3	50	48/60	157	50/62	163	43/54	141	44/56	146
	110/220	1	50	48/48	218	48/48	218	43/43	195	43/43	195
	220/380	3	50	48/60	91	50/62	94	43/54	82	44/56	85
230/400	3	50	48/60	87	50/62	89	43/54	77	44/56	80	
240/416	3	50	45/56	78	45/56	78	40/50	69	40/50	69	

NOTE: Generator Set Ratings are continued on page 2.

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: The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Prime Power Ratings: 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 and ISO-3046-1. For limited running time and continuous ratings, consult the factory. Obtain technical information bulletin (TIB-101) for ratings guidelines, complete ratings definitions, and site condition derates. The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever. For dual fuel engines, use the natural gas ratings for both the primary and secondary fuels.

Alternator	Voltage	Ph	Hz	Natural Gas 130°C Rise		LP Gas 130°C Rise		Natural Gas 105°C Rise		LP Gas 105°C Rise	
				Standby Rating kW/kVA	Amps	Standby Rating kW/kVA	Amps	Prime Rating kW/kVA	Amps	Prime Rating kW/kVA	Amps
4P10X	120/208	3	60	60/75	208	63/79	219	54/67	187	56/70	194
	127/220	3	60	60/75	197	64/80	210	54/67	177	56/70	183
	120/240	3	60	60/75	180	63/79	189	54/67	162	56/70	168
	120/240	1	60	59/59	246	61/61	254	52/52	216	52/52	216
	139/240	3	60	60/75	180	64/80	192	54/67	162	56/70	168
	220/380	3	60	60/75	114	63/79	120	54/67	102	56/70	106
	277/480	3	60	60/75	90	64/80	96	54/67	81	56/70	84
	347/600	3	60	60/75	72	64/80	77	54/67	64	56/70	67
	110/190	3	50	48/60	182	53/66	200	43/54	164	47/59	179
	115/200	3	50	48/60	176	53/66	191	43/54	155	47/59	170
	120/208	3	50	48/60	169	53/66	183	43/54	149	47/59	163
	110/220	3	50	48/60	157	53/66	173	43/54	141	47/59	154
	110/220	1	50	50/50	227	52/52	236	45/45	204	46/46	209
	220/380	3	50	48/60	91	53/66	100	43/54	82	47/59	89
	230/400	3	50	48/60	87	53/66	95	43/54	77	47/59	85
	240/416	3	50	48/60	85	53/66	92	43/54	74	47/59	81
4Q10X	120/240	1	60	60/60	250	60/60	250	54/54	225	54/54	225
	110/220	1	50	53/53	241	53/53	241	47/47	213	47/47	213

## Alternator Specifications

Specifications	Alternator
Manufacturer	Kohler
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Rare-Earth Permanent Magnet
Leads: quantity, type	
4PX	12, Reconnectable
4QX	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	Controller Dependent
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V, 400 V 4P7BX (12 lead)	180 (60 Hz), 136 (50 Hz)
480 V, 400 V 4P8X (12 lead)	261 (60 Hz), 218 (50 Hz)
480 V, 400 V 4P10X (12 lead)	275 (60 Hz), 220 (50 Hz)
240 V, 220 V 4Q10X (4 lead)	144 (60 Hz), 132 (50 Hz)

- The unique Fast-Response™ X excitation system delivers excellent voltage response and short-circuit capability using a rare-earth, permanent magnet (PM)-excited alternator.
- The brushless, rotating-field alternator has 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 dripproof construction.

## 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	60 Hz	50 Hz
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)	1, 630	
Battery voltage (DC)	12	

# Application Data

## Fuel

Fuel System	60 Hz	50 Hz
Fuel type	Natural Gas, LP Gas, or Dual Fuel	
Fuel supply line inlet	1 NPTF	
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.

## Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	4.3 (4.5)	
Oil pan capacity with filter, L (qt.)	4.7 (5.0)	
Oil filter: quantity, type	1, Cartridge	

## Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F) *	50 (122)	
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)	

\* Enclosure with enclosed silencer reduces ambient temperature capability by 5°C (9°F).

## 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>)

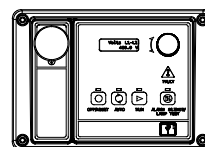
Fuel Consumption ‡	60 Hz	50 Hz
Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings	
100%	22.4 (790)	18.1 (640)
75%	19.4 (685)	15.6 (550)
50%	14.7 (520)	11.8 (415)
25%	9.9 (350)	7.8 (275)
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Ratings	
100%	9.3 (330)	7.9 (280)
75%	7.1 (250)	6.2 (220)
50%	5.4 (190)	4.7 (165)
25%	3.8 (135)	3.1 (110)
Natural Gas, m <sup>3</sup> /hr. (cfh) at % load	Prime Ratings	
110%	22.4 (790)	18.1 (638)
100%	21.5 (758)	17.3 (612)
75%	18.1 (638)	14.6 (513)
50%	13.7 (483)	11.0 (387)
25%	9.5 (334)	7.4 (262)
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Prime Ratings	
110%	9.3 (328)	7.9 (279)
100%	8.3 (294)	7.2 (253)
75%	6.6 (231)	5.7 (203)
50%	5.1 (179)	4.4 (155)
25%	3.6 (128)	2.9 (103)

‡ 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

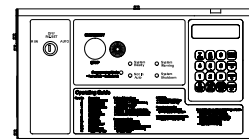


### Decision-Maker® 3000 Controller

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 thru a PC via network or serial configuration
- Controller supports Modbus® protocol
- Integrated hybrid voltage regulator with ±0.5% regulation
- Built-in alternator thermal overload protection
- NFPA 110 Level 1 capability

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
- NFPA 110 Level 1 capability

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

## 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

## Available Options

### Approvals and Listings

- CSA Approval
- IBC Seismic Certification
- UL 2200 Listing

### Enclosed Unit

- Sound Enclosure (with enclosed critical silencer)
- Weather Enclosure (with enclosed critical silencer)

### Open Unit

- Exhaust Silencer, Critical (kit: PA-352663)
- Flexible Exhaust Connector, Stainless Steel

### Fuel System

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

### Controller

- Common Fault Relay
- Communication Products and PC Software
- Customer Connection (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 (Recommended for ambient temperatures below 10°C (50°F))
- Radiator Duct Flange

### 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
- Certified Test Report
- Engine Fluids Added
- Rated Power Factor Testing
- Rodent Guards

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

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

### Other Options

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

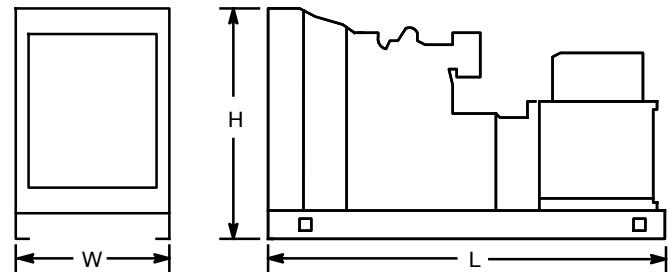
## Dimensions and Weights

Overall Size, L x W x H, mm (in.):

Wide Skid 2200 x 1040 x 1175 (86.6 x 40.9 x 46.3)

Narrow Skid 2200 x 864 x 1175 (86.6 x 34.0 x 46.3)

Weight (radiator model), wet, kg (lb.): 878 (1937)



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

## DISTRIBUTED BY: