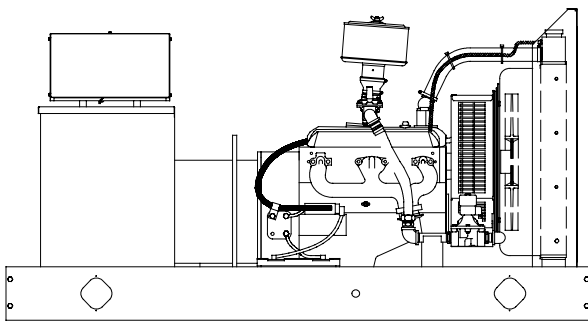




**Ratings Range**

		60 Hz	50 Hz
Standby:	kW	54-64	45-53
	kVA	54-80	45-66
Prime:	kW	50-59	39-50
	kVA	50-74	40-62



**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-, five-, and ten-year extended warranties are also available.
- Alternator features:
  - The unique Fast-Response™ II excitation system delivers excellent voltage response and short circuit capability using a permanent magnet (PM)-excited alternator.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
  - 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 Set Ratings**

Alternator	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
4P10	120/208	3	60	60/75	208	55/69	191	62/78	215	57/71	198
	127/220	3	60	60/75	197	55/69	180	61/76	200	55/69	180
	120/240	3	60	60/75	180	55/69	165	63/79	189	59/74	177
	120/240	1	60	54/54	225	50/50	208	54/54	225	50/50	208
	139/240	3	60	60/75	180	53/66	159	60/75	180	53/66	159
	220/380	3	60	60/75	114	55/69	104	60/75	114	56/70	106
	277/480	3	60	60/75	90	53/66	80	60/75	90	53/66	80
	347/600	3	60	60/75	72	53/66	64	60/75	72	53/66	64
	110/190	3	50	49/61	185	45/56	170	50/63	191	46/57	173
	115/200	3	50	47/59	170	42/52	150	47/59	170	42/52	150
	120/208	3	50	45/56	155	39/49	136	45/56	155	39/49	136
	110/220	1	50	45/45	205	40/40	182	45/45	205	40/40	182
	110/220	3	50	49/61	160	45/56	147	51/64	168	46/57	150
	220/380	3	50	49/61	93	45/56	85	50/63	96	46/57	87
	230/400	3	50	47/59	85	42/52	75	47/59	85	42/52	75
	240/416	3	50	45/56	78	39/49	68	45/56	78	39/49	68
4S7	120/208	3	60	60/75	208	55/69	191	63/79	219	59/74	205
	127/220	3	60	60/75	197	55/69	180	63/79	207	59/74	194
	120/240	3	60	60/75	180	55/69	165	63/79	189	59/74	177
	120/240	1	60	54/54	225	50/50	208	57/57	238	53/53	221
	139/240	3	60	60/75	180	55/69	165	64/80	192	59/74	177
	220/380	3	60	60/75	114	55/69	104	63/79	120	59/74	112
	277/480	3	60	60/75	90	55/69	83	64/80	96	59/74	89
	347/600	3	60	60/75	72	55/69	66	64/80	77	59/74	71
	110/190	3	50	48/60	182	45/56	170	53/66	201	49/61	184
	115/200	3	50	49/61	176	45/56	162	53/66	191	50/62	179
	120/208	3	50	49/61	169	45/56	155	53/66	183	50/62	172
	110/220	3	50	48/60	157	45/56	147	53/66	173	49/61	160
	110/220	1	50	45/45	205	41/41	186	47/47	214	44/44	200
	220/380	3	50	48/60	91	45/56	85	53/66	100	49/61	92
	230/400	3	50	48/60	87	45/56	81	53/66	95	50/62	89
	240/416	3	50	49/61	85	45/56	78	53/66	92	50/62	86
4V7	120/240	1	60	57/57	238	51/51	213	61/61	254	55/55	229
	110/220	1	50	47/47	214	42/42	191	51/51	232	46/46	209

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 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 units having a weather housing with roof-mounted silencer or an enclosure with enclosed silencer, add 5° C (9° F) for 60 Hz and 10° C (18° F) for 50 Hz to the ambient temperature. Dual fuel engines are optimized to run on the primary fuel (natural gas) and, as a result, the LPG ratings may not be attained. 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, Permanent-Magnet
Leads: quantity, type	
4P10, 4S7	12, Reconnectable
4V7	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	
Permanent magnet (PM) alternator	±2% Average
550 controller (with 0.5% drift due to temperature variation)	3-Phase Sensing, ±0.25%
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 4P10 (12 lead)	255 (60Hz), 180 (50Hz)
480 V, 380 V 4S7 (12 lead)	270 (60Hz), 190 (50Hz)
240 V, 220 V 4V7 (4 lead)	215 (60Hz), 175 (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 alternator 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.
- Fast-Response™ II 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 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	Field-Convertible	
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, Distributor	
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	60 Hz	50 Hz
Fuel type	LP Gas or Natural Gas	
Fuel supply line inlet	1 NPTF	
Natural gas/LPG fuel supply pressure, measured at the generator set fuel inlet downstream of any fuel system equipment accessories, kPa (in. H <sub>2</sub> O)	1.74-2.74 (7.0-11.0)	

### 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, kJ/m <sup>3</sup> (Btu/ft <sup>3</sup> ), min.	26.6 (890)	67.5 (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	60 Hz	50 Hz
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) *	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)	

\* Weather housing with roof-mounted silencer and enclosure with enclosed silencer reduce ambient temperature capability by 5°C (9°F) for 60 Hz and 10°C (18°F) for 50 Hz.

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.

## Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)‡	170 (6000)	136 (4800)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise and ambient temperature of 29°C (85°F), m <sup>3</sup> /min. (cfm)	144 (5100)	125 (4400)
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
<b>Natural Gas, m<sup>3</sup>/hr. (cfh) at % load</b>	<b>Standby Rating</b>	
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)
<b>Natural Gas, m<sup>3</sup>/hr. (cfh) at % load</b>	<b>Prime Rating</b>	
100%	21.2 (748)	17.1 (604)
75%	18.0 (636)	14.4 (510)
50%	13.8 (486)	11.0 (387)
25%	9.5 (335)	7.4 (263)

LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Standby Rating	
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)

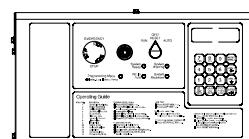
LP Gas, m <sup>3</sup> /hr. (cfh) at % load	Prime Rating	
100%	8.4 (298)	7.2 (256)
75%	6.6 (232)	5.8 (204)
50%	5.1 (179)	4.4 (154)
25%	3.7 (130)	3.0 (105)

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

LP vapor conversion factors:

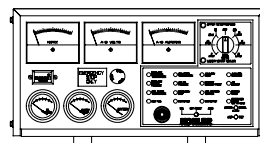
8.58 ft.<sup>3</sup> = 1 lb.  
0.535 m<sup>3</sup> = 1 kg.  
36.39 ft.<sup>3</sup> = 1 gal.

## Controllers



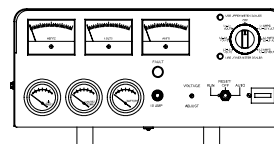
### Decision-Maker™ 550 Controller

Audiovisual annunciation with NFPA 110 Level 1 capability. Programmable microprocessor logic and digital display features. Alternator 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.



### Decision-Maker™ 1 Controller

Single-light annunciation and basic controls with NFPA capability. Relay logic, AC meters, and engine gauge features. 12-volt engine electrical system capability only. Remote or automatic start options. Refer to G6-29 for additional controller features and accessories. **Note:** Not available with 600-volt alternator.

## Additional Standard Features

- Alternator Protection (standard with 550 controller)
- Battery Rack and Cables
- Electronic, Isochronous Governor
- Gas Fuel System (includes fuel mixer, secondary gas regulator, gas solenoid valve, and flexible fuel line between the engine and the skid-mounted fuel system components)
- Integral Vibration Isolation
- 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)
- Weather Housing (with roof-mounted silencer)

### Open Unit

- Exhaust Silencer, Critical (kits: PA-324468, PA-352663)
- Flexible Exhaust Connector, Stainless Steel

### Fuel System

- Flexible Fuel Line  
(required when the generator set skid is spring mounted)
- Gas Filter
- Secondary Gas Solenoid Valve

### Controller (550 and 16-Light)

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

### Cooling System

- Block Heater  
[recommended for ambient temperatures below 10°C (50°F)]
- City Water Cooling
- Radiator Duct Flange
- Remote Radiator Cooling

### 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)
- Safeguard Breaker (available with 16-light controller)

### Miscellaneous

- Air Cleaner Restrictor Indicator
- Engine Fluids (oil and coolant) Added
- Rated Power Factor Testing
- Rodent Guards

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

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

### Other Options

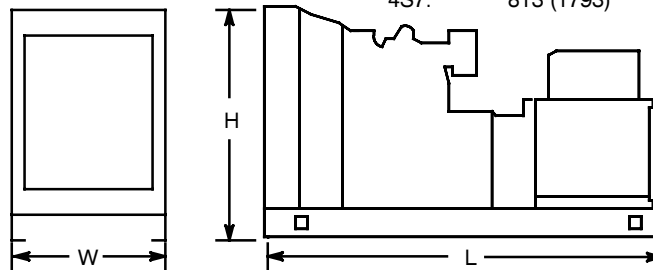
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## Dimensions and Weights

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

4P10/4V7:	Wide Skid	2200 x 1040 x 1172 (86.6 x 40.9 x 46.1)
	Narrow Skid	2200 x 865 x 1172 (86.6 x 34.0 x 46.1)
4S7:	Wide Skid	2200 x 1040 x 1211 (86.6 x 40.9 x 47.7)
	Narrow Skid	2200 x 865 x 1211 (86.6 x 34.0 x 47.7)

Weight (radiator model), wet, kg (lb.): 4P10/4V7: 755 (1665)  
 4S7: 813 (1793)



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: