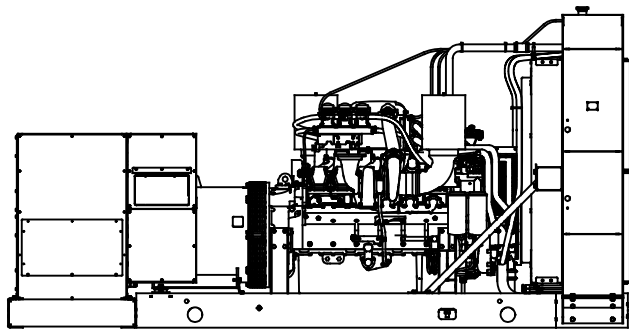




**Tier 2 EPA-Certified for Stationary Emergency Applications**

**Ratings Range**

		60 Hz	50 Hz
Standby:	kW	725-800	584-696
	kVA	906-1000	730-870
Prime:	kW	680-725	528-632
	kVA	850-906	660-790



**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 standard one-year limited warranty covers all generator set systems and components. Two-, five-, and ten-year extended limited warranties are also available.
- Alternator features:
  - The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
  - The brushless, rotating-field alternator has broadrange reconnectability.
- Other features:
  - Kohler designed controllers for guaranteed system integration and remote communication. See Controllers on page 3.
  - The low coolant level shutdown prevents overheating (standard on radiator models only).
  - Integral vibration isolation eliminates the need for under-unit vibration spring isolators.
  - An electronic, isochronous governor delivers precise frequency regulation.
  - Multiple circuit breaker configurations.

**Generator Set Ratings**

Alternator	Voltage	Ph	Hz	150°C Rise Standby Rating		130°C Rise Standby Rating		125°C Rise Prime Rating		105°C Rise Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps	kW/kVA	Amps
5M4034	240/416	3	60	725/906	1258	725/906	1258	680/850	1180	680/850	1180
	277/480	3	60	790/988	1188	750/938	1128	720/900	1083	710/888	1067
	220/380	3	50	652/815	1238	640/800	1215	600/750	1140	588/735	1117
	230/400	3	50	632/790	1140	612/765	1104	600/750	1083	560/700	1010
5M4036	240/416	3	50	604/755	1048	584/730	1013	552/690	958	528/660	916
	240/416	3	60	795/994	1379	785/981	1362	720/900	1249	720/900	1249
	277/480	3	60	795/944	1195	795/994	1195	720/900	1083	720/900	1083
	220/380	3	50	688/860	1307	652/815	1238	624/780	1185	612/765	1162
5M4038	230/400	3	50	688/860	1241	688/860	1241	624/780	1126	624/780	1126
	240/416	3	50	668/835	1159	640/800	1110	624/780	1083	584/730	1013
	240/416	3	60	800/1000	1388	800/1000	1388	725/906	1258	725/906	1258
	277/480	3	60	800/1000	1203	800/1000	1203	725/906	1090	725/906	1090
5M4166	220/380	3	50	696/870	1322	696/870	1322	632/790	1200	632/790	1200
	230/400	3	50	696/870	1256	696/870	1256	632/790	1140	632/790	1140
5M4278	240/416	3	50	696/870	1207	696/870	1207	632/790	1096	632/790	1096
	220/380	3	60	800/1000	1519	800/1000	1519	725/906	1377	725/906	1377
	347/600	3	60	800/1000	962	800/1000	962	725/906	872	725/906	872

RATINGS: All three-phase units are rated at 0.8 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.

# Alternator Specifications

Specifications	Alternator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet Pilot Exciter
Leads: quantity, type	10, Reconnectable
Voltage regulator	Solid-State, Volts/Hz
Insulation:	NEMA MG1
Material	Class H, Synthetic, Nonhygroscopic
Temperature rise	130°C, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	125%
Rotor balancing	125%
Voltage regulation, no-load to full-load	Controller Dependent
One-step load acceptance at 60 Hz	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
480 V      5M4034 (10 lead)	2600 (60 Hz), 2000 (50 Hz)
480 V      5M4036 (10 lead)	3200 (60 Hz), 2400 (50 Hz)
480 V      5M4038 (4 lead)	3050 (60 Hz), 2350 (50 Hz)
380 V      5M4166 (4 lead)	2700 (60 Hz)
600 V      5M4278 (4 lead)	3900 (60 Hz)

- 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.
- Superior voltage waveform from two-thirds pitch windings and skewed stator.
- Digital solid-state, volts-per-hertz voltage regulator with  $\pm 0.25\%$  no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

## Application Data

### Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	Detroit Diesel/MTU	
Engine: model	12V2000 G85 R123-8A37	12V2000 G65 R123-8A38
Engine: type	4-Cycle, Turbocharged, Intercooled	
Cylinder arrangement	12-V	
Displacement, L (cu. in.)	23.9 (1458)	
Bore and stroke, mm (in.)	130 x 150 (5.12 x 5.91)	
Compression ratio	16.0:1	
Piston speed, m/min. (ft./min.)	540 (1772)	
Main bearings: quantity, type	7, Precision Half Shells	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	890 (1194)	765 (1026)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	Austenitic Steel	
Governor: type, make/model	ADEC Electronic Control	
Frequency regulation, no-load to full load	Isochronous	
Frequency regulation, steady state	$\pm 0.25\%$	
Frequency	Fixed	
Air cleaner type, all models	Dry	

### Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	174 (6145)	123 (4344)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	580 (1076)	565 (1049)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)	
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing	

### Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:		
Ground (negative/positive)		Negative
Volts (DC)		24
Ampere rating		70
Starter motor rated voltage (DC)		24
Battery, recommended cold cranking amps (CCA):		
Qty., CCA rating each		Two, 1150
Battery voltage (DC)		12

### Fuel

Fuel System	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)		12 (0.5)
Fuel return line, min. ID, mm (in.)		6 (0.25)
Max. fuel flow, Lph (gph)		480 (127)
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)		-30/50 (-8.8/14.8)
Max. return line restriction, kPa (in. Hg)		50 (14.7)
Fuel filter: quantity, type		1, Secondary
Recommended fuel		#2 Diesel

### Lubrication

Lubricating System	60 Hz	50 Hz
Type		Full Pressure
Oil pan capacity dipstick mark max., L (qt.)		67 (71)
Oil pan capacity, initial filling, L (qt.)		77 (81)
Oil filter: quantity, type		2, Cartridge
Oil cooler		Water-Cooled

# Application Data

## Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)*	50 (122)	
Engine water capacity, L (gal.)	130 (34)	
Radiator system capacity, including engine, L (gal.)	310 (82)	
Engine jacket water flow, Lpm (gpm)	833 (220)	667 (176)
Charge cooler water flow, Lpm (gpm)	258 (68)	233 (62)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	315 (17930)	305 (17360)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	270 (15368)	185 (10530)
Water pump type	Centrifugal	
Fan diameter, including blades, mm (in.)	1524 (60)	
Fan, kWm (HP)	43 (58)	25 (34)
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).

Remote Radiator System†	60 Hz	50 Hz
Exhaust manifold type	Dry	
Connection sizes:		
Water inlet/outlet, mm (in.)	77 (3)	
Intercooler inlet/outlet, mm (in.)	51 (2)	
Static head allowable above engine, kPa (ft. H <sub>2</sub> O)	149 (50)	

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

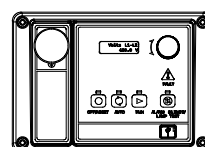
## Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)‡	1285 (45380)	1071 (37817)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise, m <sup>3</sup> /min. (scfm)‡	311 (11000)	
Combustion air, m <sup>3</sup> /min. (cfm)	66 (2330)	54 (1907)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	40 (2275)	
Alternator, kW (Btu/min.)	47 (2673)	

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

Fuel Consumption	60 Hz	50 Hz
<b>Diesel, Lph (gph) at % load</b>		
100%	219.6 (58.0)	183.4 (48.4)
75%	165.5 (43.7)	136.8 (36.2)
50%	111.9 (29.6)	93.9 (24.8)
25%	60.9 (16.1)	51.2 (13.5)
<b>Diesel, Lph (gph) at % load</b>		
100%	199.9 (52.8)	165.8 (43.8)
75%	150.6 (39.8)	124.9 (33.0)
50%	101.9 (26.9)	86.2 (22.8)
25%	56.7 (15.0)	47.2 (12.5)

## Controllers

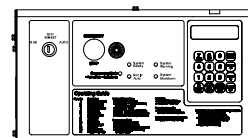


### Decision-Maker® 3000 Controller

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 modem configuration
- 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.

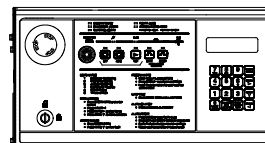


### Decision-Maker® 550 Controller

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.



### Decision-Maker® 6000 Paralleling Controller

Provides advanced control, system monitoring, and system diagnostics with remote monitoring capabilities for paralleling multiple generator sets.

- Paralleling capability with first-on logic, synchronizer, kW and kVAR load sharing, and protective relays
- 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 G6-107 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

## Standard Features

- Alternator Protection
- Customer Connection  
 (standard with Decision-Maker® 6000 controller only)
- Engine Closed Crankcase Breather
- Local Emergency Stop Switch
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Core Guard

## Available Options

### Approvals and Listings

- CSA Certified
- IBC Seismic Certification
- UL 2200 Listing

### Enclosed Unit

- Sound Enclosure/Fuel Tank Package
- Weather Enclosure/Fuel Tank Package

### Open Unit

- Exhaust Silencer, Critical  
 (kits: PA-354880, qty. 2, PA-354898 qty. 1, or PA-354894 qty. 1)
- Exhaust Silencer, Hospital  
 (kits: PA-354905 qty. 2, PA-354912 qty. 1, or PA-354907 qty. 1)
- Flexible Exhaust Connector, Stainless Steel

### Fuel System

- Flexible Fuel Lines
- Fuel Pressure Gauge
- Fuel/Water Separator

### Controller

- Common Failure Relay  
 (Decision-Maker® 550 and 6000 controllers only)
- Communication Products and PC Software
- Customer Connection (Decision-Maker® 550 controller only)
- Decision-Maker® Paralleling System (DPS)  
 (Decision-Maker® 6000 controller only)
- Dry Contact (isolated alarm)  
 (Decision-Maker® 550 and 6000 controllers only)
- Input/Output Module (Decision-Maker® 3000 controller only)
- Prime Power Switch (Decision-Maker® 550 and 6000 controllers)
- Remote Audiovisual Alarm Panel (Decision-Maker® 550 only)
- Remote Emergency Stop
- Remote Mounting Cable
- Remote Serial Annunciator Panel
- Run Relay

### Cooling System

- Block Heater; 9000 W, 208 V, 1 Ph
- Block Heater; 9000 W, 240 V, (Select 1 Ph or 3 Ph)
- Block Heater; 9000 W, 380 V, 3 Ph
- Block Heater; 9000 W, 480 V, (Select 1 Ph or 3 Ph)  
 Recommended for Ambient Temperatures Below 10°C (50°F)
- Remote Radiator Setup

### Electrical System

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

- Battery Rack and Cables
- Bus Bar
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)

### Paralleling System

- Manual Speed Adjustment  
 (Decision-Maker® 3000 and 550 controllers only)
- Remote Voltage Adjustment Control
- Voltage Sensing (Decision-Maker® 6000 controller only)

### Miscellaneous

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Engine Fluids (oil and coolant) Added
- Rated Power Factor Testing

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

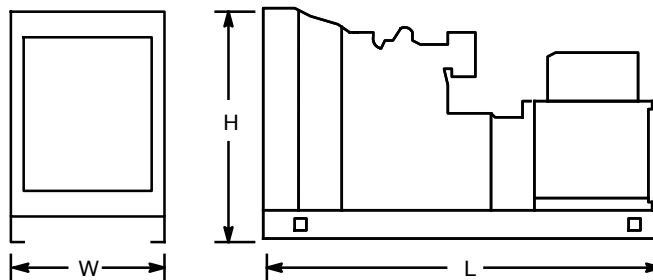
- 2-Year Basic Limited Warranty
- 2-Year Prime Limited Warranty
- 5-Year Basic Limited Warranty
- 5-Year Comprehensive Limited Warranty
- 10-Year Major Components Limited Warranty

### Other Options

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

## Dimensions and Weights

Overall Size, max., L x W x H, mm (in.): 4749 x 1929 x 2364  
 (187.0 x 75.9 x 93.1)  
 Weight, radiator model, max. wet, kg (lb.): 6123 (13500)



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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