

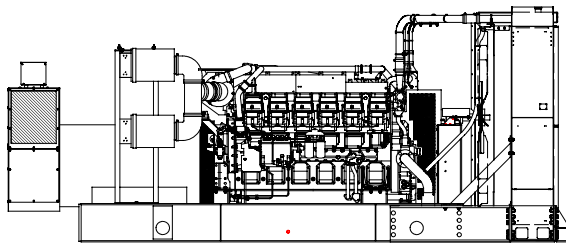


**Tier 2 EPA-Certified for Stationary Emergency Applications**

### Ratings Range

60 Hz

<b>Standby:</b>	<b>kW</b>	940-1280
	<b>kVA</b>	1175-1600
<b>Prime:</b>	<b>kW</b>	860-1160
	<b>kVA</b>	1075-1450



### 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.
- The generator set complies with ISO 8528-5, Class G3, requirements for transient performance.
- A one-year limited warranty covers all systems and components. Two-, five-, and ten-year extended 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:
  - The low coolant level shutdown prevents overheating (standard on radiator models only).
  - The generator set is direct-mounted to the skid.
  - An electronic, isochronous governor delivers precise frequency regulation.

### 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
7M4046	220/380	3	60	940/1175	1785	940/1175	1785	860/1075	1633	860/1075	1633
	240/416	3	60	1180/1475	2047	1110/1388	1926	1090/1363	1891	1020/1275	1770
	277/480	3	60	1250/1563	1879	1220/1525	1834	1140/1425	1714	1120/1400	1684
7M4048	220/380	3	60	1030/1288	1956	1030/1288	1956	940/1175	1785	940/1175	1785
	240/416	3	60	1250/1563	2169	1180/1475	2047	1140/1425	1978	1100/1375	1908
	277/480	3	60	1270/1588	1909	1270/1588	1909	1160/1450	1744	1160/1450	1744
7M4050	220/380	3	60	1160/1450	2203	1160/1450	2203	1060/1325	2013	1060/1325	2013
	240/416	3	60	1280/1600	2221	1280/1600	2221	1160/1450	2012	1160/1450	2012
	277/480	3	60	1280/1600	1925	1280/1600	1925	1160/1450	1744	1160/1450	1744
7M4052	220/380	3	60	1280/1600	2431	1280/1600	2431	1160/1450	2203	1160/1450	2203
	240/416	3	60	1280/1600	2221	1280/1600	2221	1160/1450	2012	1160/1450	2012
	277/480	3	60	1280/1600	1925	1280/1600	1925	1160/1450	1744	1160/1450	1744
7M4172	220/380	3	60	1270/1588	2412	1260/1575	2393	1160/1450	2203	1160/1450	2203
7M4174	220/380	3	60	1280/1600	2431	1280/1600	2431	1160/1450	2203	1160/1450	2203
7M4288	347/600	3	60	1280/1600	1540	1280/1600	1540	1160/1450	1395	1160/1450	1395
7M4366	2400/4160	3	60	1280/1600	222	1280/1600	222	1160/1450	201	1160/1450	201
7M4368	2400/4160	3	60	1280/1600	222	1280/1600	222	1160/1450	201	1160/1450	201

**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
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%
Voltage regulation, no-load to full-load (with <0.5% drift due to temp. variation)	3-Phase Sensing, ±0.25%
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      7M4046 (4 bus bar)	3900
480 V      7M4048 (4 bus bar)	3700
480 V      7M4050 (4 bus bar)	4500
480 V      7M4052 (4 bus bar)	5500
380 V      7M4172 (4 bus bar)	2600
380 V      7M4174 (4 bus bar)	4200
600 V      7M4288 (4 bus bar)	5400
4160 V     7M4366 (6 lead)	3900
4160 V     7M4368 (6 lead)	4900

- 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 ±0.25% no-load to full-load regulation.
- Brushless alternator with brushless pilot exciter for excellent load response.

## Application Data

### Engine

Engine Specifications	
Manufacturer	Mitsubishi
Engine model	S12R-Y2PTAW-1
Engine type	4-Cycle, Turbocharged
Cylinder arrangement	12 V
Displacement, L (cu. in.)	49.0 (2992)
Bore and stroke, mm (in.)	170 x 180 (6.69 x 7.09)
Compression ratio	14.5:1
Piston speed, m/min. (ft./min.)	648 (2126)
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	1403 (1881)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Governor type	Electronic
Frequency regulation, no-load to full-load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

### Exhaust

Exhaust System	
Exhaust manifold type	Dry
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	356 (12570)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	497 (927)
Maximum allowable back pressure, kPa (in. Hg)	5.9 (1.7)
Exhaust outlet size at engine hookup, mm (in.)	See ADV drawing

### Engine Electrical

Engine Electrical System		
Battery charging alternator:		
Ground (negative/positive)		Negative
Volts (DC)		24
Ampere rating		30
Starter motor rated voltage (DC)		Dual, 24
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each		Four, 1150
Battery voltage (DC)		12

### Fuel

Fuel System	
Fuel supply line, min. ID, mm (in.)	19 (0.75)
Fuel return line, min. ID, mm (in.)	19 (0.75)
Max. fuel flow, Lph (gph)	480 (127)
Max. fuel pump restriction, kPa (in. Hg)	10 (3.0)
Fuel filter: quantity, type	4, Secondary
Recommended fuel	#2 Diesel

### Lubrication

Lubricating System	
Type	Full Pressure
Oil pan capacity, L (qt.)	150 (159)
Oil pan capacity with filter, L (qt.)	180 (190)
Oil filter: quantity, type	4, Cartridge
Oil cooler	Water-Cooled

# Application Data

## Cooling

Radiator System	
Ambient temperature, °C (°F)*	40 (104)
Engine jacket water capacity, L (gal.)	130 (34)
Radiator system capacity, including engine, L (gal.)	327 (86)
Engine jacket water flow, Lpm (gpm)	1850 (489)
Charge cooler water flow, Lpm (gpm)	340 (90)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1829 (72)
Fan kWm (HP)	57 (76)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)

High Ambient Radiator System	
Ambient temperature, °C (°F)*	50 (122)
Engine water capacity, L (gal.)	130 (34)
Radiator system capacity, including engine, L (gal.)	341 (90)
Engine jacket water flow, Lpm (gpm)	1850 (489)
Charge cooler water flow, Lpm (gpm)	340 (90)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Heat rejected to charge cooler water at rated kW, dry exhaust, kW (Btu/min.)	511 (29045)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1829 (72)
Fan kWm (HP)	57 (76)
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†	
Exhaust manifold type	Dry
Connection sizes:	
Jacket water engine inlet, mm (in.)	95 (3.75)
Jacket water engine outlet, mm (in.)	95 (3.75)
Intercooler water engine inlet, mm (in.)	83 (3.25)
Intercooler water engine outlet, mm (in.)	83 (3.25)
Static head allowable above engine, kPa (ft. H <sub>2</sub> O)	98 (32.8)

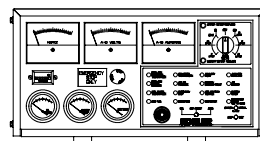
† Contact your local distributor for cooling system options and specifications based on your specific requirements.

## Operation Requirements

Air Requirements	
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)‡	1756 (62000)
High ambient radiator-cooled cooling air, m <sup>3</sup> /min. (scfm)‡	1699 (60000)
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)‡	677 (23900)
Combustion air, m <sup>3</sup> /min. (cfm)	135 (4767)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	118 (6703)
Alternator, kW (Btu/min.)	71 (4038)
‡ Air density = 1.20 kg/m <sup>3</sup> (0.075 lbm/ft <sup>3</sup> )	

Fuel Consumption	
Diesel, Lph (gph) at % load	Standby Rating
100%	392 (103.4)
75%	284 (75.1)
50%	193 (51.0)
25%	110 (29.2)
Diesel, Lph (gph) at % load	Prime Rating
100%	344 (90.9)
75%	259 (68.4)
50%	176 (46.4)
25%	105 (27.6)

## Controllers

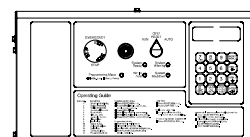


### Decision-Maker® 3+ Controller

Provides system control and monitoring capabilities.

- Analog display using AC meters, engine gauges, and voltage selector switch.
- 16-light status, warning, and shutdown fault annunciation.
- Alarm horn, emergency stop switch, and hour meter features.
- Remote annunciation options.
- Remote start and prime power options.

Refer to G6-30 for additional controller features and accessories.

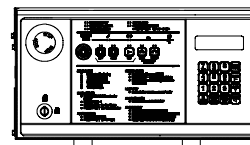


### Decision-Maker® 550 Controller

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.

## Additional Standard Features

- Alternator Protection  
 (standard with Decision-Maker® 550 and 6000 controllers)
- Alternator Strip Heater (standard on 3300 volt and above)
- Oil Drain Extension
- Operation and Installation Literature
- Reactive Droop Compensation  
 (standard with Decision-Maker® 550 and 6000 controllers)

## Available Options

### Approvals and Listings

- CSA Approval
- IBC Seismic Certification
- Rated Power Factor Testing
- UL 2200 Listing

### Enclosed Unit

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

### Open Unit

- Exhaust Silencer, Hospital (kit: PA-361626)
- Exhaust Silencer, Critical (kit: PA-361617)
- Flexible Exhaust Connector, Stainless Steel

### Fuel System

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

### Controller

- Common Failure Relay
- Communication Products and PC Software  
 (Decision-Maker® 550 and 6000 controllers)
- Customer Connection  
 (Decision-Maker® 3+ and 550 controllers)
- Dry Contact (isolated alarm)
- Prime Power Switch  
 (Decision-Maker® 550 and 6000 controllers)
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop
- Remote Mounting Cable  
 (Decision-Maker® 3+ and 550 controllers)
- Remote Serial Annunciator Panel
- Run Relay

### Cooling System

- Block Heater;  
 Recommended for Ambient Temperatures Below 20°C (68°F)
- High Ambient Radiator
- Remote Radiator Cooling Setup

### Electrical System

- Alternator Strip Heater (available up to 600 volt)
- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Safeguard Breaker (Decision-Maker® 3+ controller only)

### Paralleling System

- Decision-Maker® Paralleling System (DPS)  
 (Decision-Maker® 6000 controller only)
- Reactive Droop Compensator  
 (Decision-Maker® 3+ controller only)
- Remote Voltage Adjustment Control
- Voltage Regulator Relocation (Decision-Maker® 3+ controller only)

### Miscellaneous

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Crankcase Emissions Canister
- Engine Fluids
- Oil Temperature Gauge
- Integral Vibration Isolation Mounting
- Solid Mounting/Spring Isolators

### Literature

- General Maintenance
- NFPA 110
- Overhaul
- Production

### Warranty

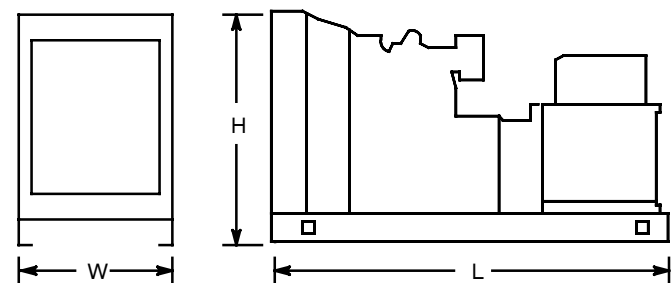
- 2-Year Basic
- 2-Year Prime
- 5-Year Basic
- 5-Year Comprehensive
- 10-Year Major Components

### Other Options

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

## Dimensions and Weights

Overall Size, L x W x H, max., mm (in.): 5785 x 2232 x 2490  
 (227.8 x 87.9 x 98.0)  
 Weight (radiator model), wet, max., kg (lb.): 12020 (26500)



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

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