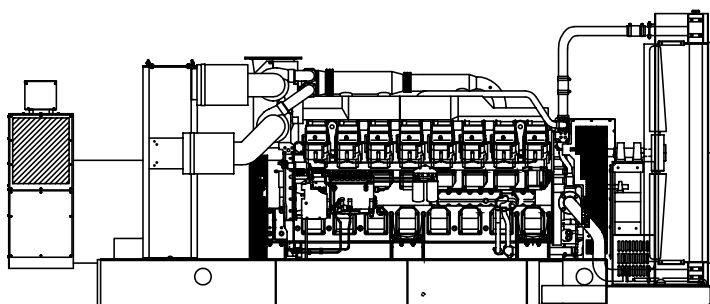




### Ratings Range

		50 Hz
Standby:	kW	1600
	kVA	2000
Prime:	kW	1450
	kVA	1813



### 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 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.
- Generator features:
  - The brushless, rotating-field generator has broadrange reconnectability.
  - The pilot-excited, permanent magnet-excited generator (PMG) provides superior short-circuit capability.
- Other features:
  - Controllers are available for all applications. See controller features inside.
  - 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.
  - 50°C ambient radiators are optional.

### Generator Ratings

Alternator	Voltage	Ph	Hz	150°C Rise		125°C Rise	
				Standby Rating kW/kVA	Amps	Prime Rating kW/kVA	Amps
7M4054	220/380	3	50	1580/1975	3000	1440/1800	2734
	230/400	3	50	1580/1975	2850	1440/1800	2598
	240/416	3	50	1580/1975	2741	1440/1800	2498
7M4058	220/380	3	50	1600/2000	3039	1450/1813	2755
	230/400	3	50	1590/1988	2870	1450/1813	2616
	240/416	3	50	1590/1988	2759	1450/1813	2516

RATINGS: All three-phase units are rated at 0.8 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 1.0% per 100 m (328 ft.) elevation above 1500 m (4921 ft.). *Temperature:* Derate 6.8% per 10°C (18°F) temperature above 40°C (104°F). 50Hz ratings are applicable on Singapore built models only.

# Alternator Specifications

Specifications	Generator
Type	4-Pole, Rotating-Field
Exciter type	Brushless, Permanent-Magnet Pilot Exciter
Voltage regulator	Solid State, Volts/Hz
Insulation:	NEMAMG1
Material . . . . .	Class H, Synthetic, Nonhygroscopic
Temperature rise . . . . .	125°C Prime, 150°C Standby
Bearing: quantity, type	1, Sealed
Coupling	Flexible Disc
Amortisseur windings	Full
Rotor balancing	150% 50Hz
Voltage regulation, no-load to full-load (with <0.5% drift due to temp Variation)	3-Phase Sensing, ±0.25%
One-step load acceptance	100% of Rating
Unbalanced load capability	100% of Rated Standby Current
Peak motor starting kVA:	(35% dip for voltages below)
380 V                    7M4054 (4 bus bar) . .	4800 (50 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 generator 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	50 Hz
Engine model	D1600 65.4A50
Engine type	4-Cycle, Turbocharged, Intercooled
Cylinder arrangement	16-V
Displacement, L (cu. in.)	65.4 (3989)
Bore and stroke, mm (in.)	170 x 180 (6.69 x 7.09)
Compression ratio	15.0:1
Piston speed, m/min. (ft./min.)	540 (1772)
Main bearings: quantity, type	-
Rated rpm	1500
Max. power at rated rpm, kWm (BHP)	1701 (2280)
Cylinder head material	Cast Iron
Crankshaft material	Forged Steel
Governor: type, make/model	Electronic, Woodward PROACT II
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	50 Hz
Exhaust manifold type	Dry
Exhaust flow at rated kW, m <sup>3</sup> /min. (cfm)	385 (13594)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	519 (966)
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	50 Hz
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):	
Qty., CCA rating	4, 1000
Battery voltage (DC)	12

### Fuel

Fuel System	50 Hz
Fuel supply line, min. ID, mm (in.)	25 (1.0)
Fuel return line, min. ID, mm (in.)	19 (0.75)
Max. lift, engine-driven fuel pump, m (ft.)	1 (3)
Max. fuel flow, Lph (gph)	510 (135)
Max. fuel pump restriction, kPa (in. Hg)	10 (3.0)
Fuel filter: quantity, type	4, Secondary
Recommended fuel	#2 Diesel

### Lubrication

Lubricating System	50 Hz
Type	Full Pressure
Oil pan capacity, L (qt.)	200 (211)
Oil pan capacity with filter, L (qt.)	250 (264)
Oil filter: quantity, type	4, Cartridge
Oil Cooler	Water-Cooled

# Application Data

## Cooling

Radiator System	50 Hz
Ambient temperature	40 (104)
Engine jacket water capacity, L (gal.)	170 (44.9)
Radiator system capacity, including engine, L (gal.)	420 (111.0)
Engine jacket water flow, Lpm (gpm)	1650 (436)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1063 (60452)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	1800 (70.9)
Fan, kWm (HP)	35 (47)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H <sub>2</sub> O)	0.125 (0.5)

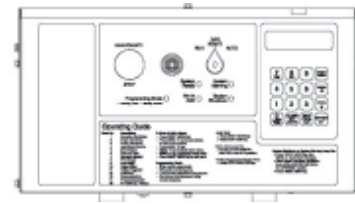
## Operation Requirements

Air Requirements	50 Hz
Radiator-cooled cooling air, m <sup>3</sup> /min. (scfm) ~	2039 (72000)
Combustion air, m <sup>3</sup> /min. (cfm)	146 (5155)
Heat rejected to ambient air:	
Engine, kW(Btu/min.) . . . . .	127 (7254)
Generator, kW (Btu/min.) . . . . .	82 (4663)
~ Air density = 1.20 kg/m <sup>3</sup> (0.075 lbm/ft <sup>3</sup> )	

Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	Standby Rating
100%	410 (108.4)
75%	302 (79.9)
50%	208 (55.0)
25%	116 (30.7)

Diesel, Lph (gph) at % load	Prime Rating
100%	369 (97.6)
75%	277 (73.1)
50%	193 (51.1)
25%	112 (29.6)

# Controllers



## Decision-Maker™ 550 Controller

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

## Standard Features and Accessories

### Additional Standard Features

- Alternator Protection (standard with Decision-Maker™ 550)
- Electronic, Isochronous Governor
- Oil Drain Extension
- Operation and Installation Literature
- Pilot-Excited, Permanent Magnet Generator (PMG)

### Accessories

#### Open Unit

- Exhaust Silencer, Hospital
- Exhaust Silencer, Critical
- Flexible Exhaust Connector, Stainless Steel

#### Cooling System

- Block Heater  
[recommended for ambient temperatures below 20°C (68°F)]
- Radiator Duct Flange

#### Fuel System

- Flexible Fuel Lines
- Fuel Pressure Gauge
- Fuel/Water Separator
- Subbase Fuel Tank with Day Tank

#### Electrical System

- Battery
- Battery Charger, Equalize/Float Type
- Battery Heater
- Battery Rack and Cables

#### Engine and Generator

- Air Cleaner, Heavy Duty
- Air Cleaner Restriction Indicator
- Bus Bar Kits (standard on 7M generators, 380-600 volt only)
- Crankcase Emissions Canister
- Engine Fluids (oil and coolant) Added
- Generator Strip Heater
- Line Circuit Breaker (NEMA type 1 enclosure)
- Line Circuit Breaker with Shunt Trip (NEMA type 1 enclosure)
- Oil Temperature Gauge
- Optional Generators
- Rated Power Factor Testing
- Spring Isolators

#### Paralleling System

- Load-Sharing Module
- Voltage Adjustment Control (manual)

### Maintenance and Literature

- General Maintenance Literature Kit
- Maintenance Kit (includes air, oil, and fuel filters)
- NFPA 110 Literature
- Overhaul Literature Kit
- Production Literature Kit

### Controller

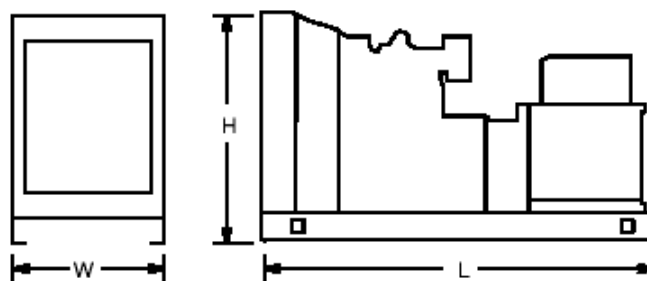
- Common Failure Relay Kit
- Communications Products and PC Software  
(Decision-Maker™ 550 only)
- Customer Connection Kit
- Dry Contact Kit (isolated alarm)
- Prime Power Switch (Decision-Maker™ 550 only)
- Remote Annunciator Panel
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop Kit
- Remote Mounting Cable
- Run Relay Kit

### Miscellaneous Accessories

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

### Dimensions and Weights

Overall Size, L x W x H, mm (in.): 5933 x 2212 X 2505  
 (233.6 x 87.1 X 98.6)  
 Weight (radiator model), wet, max., kg (lb.): 14000 (30837)



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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