Model: 3250REOZD

Diesel

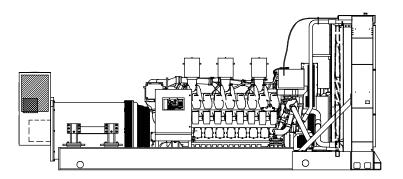
KOHLER. Power Systems



Tier 2 EPA-Certified for Stationary Emergency Applications

Ratings Range

-		60 Hz	50 Hz
Standby:	kW	3000-3250	2340-2640
-	kVA	3750-4063	2925-3300
Prime:	kW	2800	2320-2400
	kVA	3500	2900-3000



Generator Set Ratings

Standard Features

380 V - 13.8 kV

- 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).
 - Electronic engine controls manage the engine.
 - Multiple circuit breaker configurations.

Alternator Voltage Ph Hz kW/kVA Amps 10M1108 277/480 3 60 3000/3750 4511 10M1108 220/380 3 50 2340/2925 4444 10M1110 277/480 3 60 3250/4063 4886 10M1110 220/380 3 50 2640/3300 5014 10M1126 347/600 3 60 3000/3750 3608 10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	kW/kVA Amps 2800/3500 4210 2320/2900 4406 2800/3500 4210
10M1108 220/380 3 50 2340/2925 4444 10M1110 277/480 3 60 3250/4063 4886 220/380 3 50 2640/3300 5014 10M1110 347/600 3 60 3000/3750 3608 10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	2320/2900 4406
220/380 3 50 2340/2925 4444 10M1110 277/480 3 60 3250/4063 4886 220/380 3 50 2640/3300 5014 10M1126 347/600 3 60 3000/3750 3608 10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	
10M1110 220/380 3 50 2640/3300 5014 10M1126 347/600 3 60 3000/3750 3608 10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	2800/3500 4210
220/380 3 50 2640/3300 5014 10M1126 347/600 3 60 3000/3750 3608 10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	IEI0
10M1128 347/600 3 60 3250/4063 3909 10M1184 2400/4160 3 60 3000/3750 520	2400/3000 4558
10M1184 2400/4160 3 60 3000/3750 520	2800/3500 3368
, , ,	2800/3500 3368
	2800/3500 486
2400/4160 3 60 3000/3750 520	2800/3500 486
10M1186 1905/3300 3 50 2400/3000 525	2400/3000 525
2400/4160 3 60 3250/4063 564	2800/3500 486
10M1188 1905/3300 3 50 2640/3300 577	2400/3000 525
7200/12470 3 60 3000/3750 174	2800/3500 162
10M1254 7620/13200 3 60 3000/3750 164	2800/3500 153
7970/13800 3 60 3000/3750 157	2800/3500 146
7200/12470 3 60 3250/4063 188	2800/3500 162
10M1256 7620/13200 3 60 3250/4063 178	2800/3500 153
7970/13800 3 60 3250/4063 170	2800/3500 146
7200/12470 3 60 3250/4063 188	2800/3500 162
10M1459 7620/13200 3 60 3250/4063 178	0000/0500 150
7970/13800 3 60 3250/4063 170	2800/3500 153

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 (TII=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	 NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and mater starting. 	
Туре	4-Pole, Rotating-Field	temperature rise and motor starting.	
Exciter type	Brushless, Permanent- Magnet	 Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds. 	
Voltage regulator	Solid State, Volts/Hz	 Sustained short-circuit current enabling downstream circuit 	
Insulation:	NEMA MG1	breakers to trip without collapsing the alternator field.	
Material	Class H, Synthetic, Nonhygroscopic	 Self-ventilated and dripproof construction. 	
Temperature rise	130°C Standby	 Superior voltage waveform from two-thirds pitch windings 	
Bearing: quantity, type	2, Sealed	and skewed stator.	
Coupling	Flexible Coupling	 Digital solid-state, volts-per-hertz voltage regulator with 	
Amortisseur windings	Full	±0.25% no-load to full-load regulation.	
Rotor balancing	125%	 Brushless alternator with brushless pilot exciter for excellent 	
Voltage regulation, no-load to full-load		load response.	
(with <0.5% drift due to temp. variation)	3-Phase Sensing, ±0.25%		
One-step load acceptance	100% of Rating	Peak motor starting kVA: (35% dip for voltages below)	
Unbalanced load capability	100% of Rated Standby Current	12470V 10M1254 (6 lead w/4 bus bar) 6300 (60 Hz) 13200V 10M1254 (6 lead w/4 bus bar) 6850 (60 Hz)	
		13800V 10M1254 (6 lead w/4 bus bar) 7450 (60 Hz)	
Peak motor starting kVA: 480/380V 10M1108 (6 lead w/4 bus bar)	(35% dip for voltages below) 6750 (60 Hz) 5150 (50 Hz)	12470V 10M1256 (6 lead w/4 bus bar) 7750 (60 Hz)	
480/380V 10M1108 (6 lead w/4 bus bar) 480/380V 10M1110 (6 lead w/4 bus bar)	8700 (60 Hz) 7500 (50 Hz)	13200V 10M1256 (6 lead w/4 bus bar) 8500 (60 Hz)	
600V 10M1126 (6 lead w/4 bus bar)	7650 (60 Hz)	13800V 10M1256 (6 lead w/4 bus bar) 9100 (60 Hz)	
600V 10M1128 (6 lead w/4 bus bar)	7650 (60 Hz)	12470V 10M1459 (6 lead w/4 bus bar) 7200 (60 Hz)	
4160V 10M1184 (6 lead w/4 bus bar)	6400 (60 Hz)	13200V 10M1459 (6 lead w/4 bus bar) 7800 (60 Hz)	
4160/3300V 10M1186 (6 lead w/4 bus bar)	7700 (60 Hz) N/A (50 Hz)	13800V 10M1459 (6 lead w/4 bus bar) 8400 (60 Hz)	
4160/3300V 10M1188 (6 lead w/4 bus bar)	7700 (60 Hz) N/A (50 Hz)		
N/A—not available at time of print.			

Engine

Application Data

Engine Specifications	60 Hz	50 Hz
Manufacturer	Detroit Diesel/MTU	
Engine: model	20V4000G83L	20V4000G63L
Engine: type	4-Cycle, Turbocharged, Intercooled	
Cylinder arrangement	20	V
Displacement, L (cu. in.)	95.4 (5822)
Bore and stroke, mm (in.)	170 x 210 (6.7 x 8.3)	
Compression ratio	16.5:1	
Piston speed, m/min. (ft./min.)	756 (2480)	
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	3490 (4680)	2850 (3820)
Cylinder head material	Cast Iron	
Crankshaft material	Forged Steel	
Valve (exhaust) material	High Alloy Steel	
Governor: type, make/model	ADEC Electronic Control	
Frequency regulation, no-load to full-load	Isochronous	
Frequency regulation, steady state	±0.25%	
Frequency	Fixed	
Air cleaner type, all models	Dry	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz	
Battery charging alternator:			
Ground (negative/positive)	Negative		
Volts (DC)	24	1	
Ampere rating	70		
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	60 Hz	50 Hz
Fuel supply line, min. ID, mm (in.)	20 (0.79)	
Fuel return line, min. ID, mm (in.)	el return line, min. ID, mm (in.) 20 (0.79)	
Max. fuel flow, Lph (gph)	1620 (428.0)	
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-10/50	(-3/15)
Max. return line restriction, kPa (in. Hg)	50 (14.7)	
Fuel filter	1, Secondary	
Recommended fuel	#2 D	iesel

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m ³ /min. (cfm)	702 (24791)	528 (18646)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	525 (977)	
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)	
Exhaust outlet size at engine hookup, mm (in.)	3 @ 251 (9.88)	

Lubrication

Lubricating System	60 Hz	50 Hz
Туре	Full Pressure	
Oil pan capacity, dipstick mark max., L (qt.)	340	(359)
ingine oil capacity, initial filling, L (qt.) 390		(412)
Oil filter: quantity, type	5, Spin-On	
Oil cooler	Water-	Cooled

Application Data

Cooling

Radiator System **	60 Hz	50 Hz	
Ambient temp., standby rating, °C (°F)*	40 (40 (104)	
Engine water capacity, L (gal.)	205	(54)	
Radiator system capacity, including engine, L (gal.)	818 (216)		
Engine jacket water flow, Lpm (gpm)	1567 (414)	1333 (352)	
Charge cooler water flow, Lpm (gpm)	567 (150)	542 (143)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1300 (73930)	1050 (59766)	
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	970 (55163)	500 (28640)	
Water pump type	Centrifugal		
Fan diameter, including blades, mm (in.)	2743 (108)		
Fan, kWm (HP)	86 (116)	66 (89)	
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. $\rm H_2O)$	0.125 (0.5)		

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

** Applies to models at 3250 kW, 60 Hz and 2640 kW, 50 Hz with alternators 10M1110, 10M1128, 10M1188, 10M1256, and 10M1459.

Radiator System ††	60 Hz	50 Hz	
Ambient temp., standby rating, °C (°F)*	43 (43 (109)	
Engine water capacity, L (gal.)	205	205 (54)	
Radiator system capacity, including engine, L (gal.)	818 (216)		
Engine jacket water flow, Lpm (gpm)	1567 (414)	1333 (352)	
Charge cooler water flow, Lpm (gpm)	567 (150)	542 (143)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1155 (65742)	1050 (59766)	
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	843 (47983)	500 (28640)	
Water pump type	Centrifugal		
Fan diameter, including blades, mm (in.)	2743 (108)		
Fan, kWm (HP)	86 (116)	66 (89)	
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. $\rm H_2O)$	0.125 (0.5)		
* =			

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

†† Applies to all models up to 3000 kW, 60 Hz and 2340/2400 kW, 50 Hz.

Remote Radiator System [†]	60 Hz	50 Hz
Connection sizes:	Class 150 ANSI Flange	
Water inlet/outlet, mm (in.)	191 (7.5) Bolt Circle	
Intercooler inlet/outlet, mm (in.)	152 (6.0) Bolt Circle	
Static head allowable		
above engine, kPa (ft. H ₂ 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 ³ /min. (scfm)‡	3823 (135000)	2973 (105000)
Cooling air required for generator set when equipped with CWC or remote radiator, based on 14°C (25°F) rise, m ³ /min. (scfm)‡	806 (2	28450)
Combustion air, m ³ /min. (cfm)	264 (9323)	198 (6992)
Heat rejected to ambient air:		
Engine, kW (Btu/min.)	90 (5	5118)
Generator, kW (Btu/min.)	120 (6830)	

‡ Air density = 1.20 kg/m³ (0.075 lbm/ft³).

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	Standby Rating	
100%	848.8 (224.2)	652.8 (172.5)
75%	645.9 (170.6)	479.5 (126.7)
50%	447.1 (118.1)	331.4 (87.6)
25%	254.4 (67.2)	168.8 (49.3)
Diesel, Lph (gph) at % load	Prime Rating	
100%	714.3 (188.7)	587.1 (155.1)
75%	557.1 (147.2)	440.3 (116.3)
50%	408.7 (108.0)	305.8 (80.8)
25%	222.1 (58.7)	171.2 (45.2)

Controllers

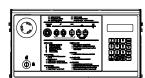


Decision-Maker[®] 550 Controller

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 $\pm 0.25\%$ 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
- Alternator Strip Heater (standard on 3300 volt and above)
- Closed Crankcase Breather System
- Flexible Exhaust Connector, Stainless Steel
- Local Emergency Stop Switch
- Low Coolant Level Shutdown
- Oil Drain Extension
- Operation and Installation Literature
- Radiator Core Guard
- Winding RTDs (standard on 3300 volt and above)

Available Options

Approvals and Listings

- California OSHPD Approval
- CSA Approval
- IBC Seismic Certification
- UL 2200 Listing

Enclosed Unit

- Sound Enclosure (Contact Factory)
- Weather Enclosure (Contact Factory)

Open Unit

- Exhaust Silencer, Critical (kit: GM30322-KP1)
- Exhaust Silencer, Hospital (kit: GM30321-KP1)

Fuel System

- Flexible Fuel Lines
- Fuel/Water Separator
- Subbase Fuel Tank (Contact Factory)

Controller

- Common Failure Relay
- Communication Products and PC Software
- Customer Connection (Standard with Decision-Maker[®] 6000 controller)
- Decision-Maker Paralleling System (DPS) (Decision-Maker[®] 6000 controller only) (Contact Factory)
- Dry Contact (One-, Ten-, or Twenty-Relay Options)
- Prime Power Switch
- Remote Audiovisual Alarm Panel
- Remote Emergency Stop
- Remote Mounting Cable (Decision-Maker® 550 controller only)
- Remote Serial Annunciator Panel
- 🗋 Run Relay

Cooling System

- Block Heater; 12000 W
- Recommended for Ambient Temperatures Below 10°C (50°F)
- Remote Radiator Cooling Setup

Electrical System

- Alternator Strip Heater (available up to 600 volt)
- Battery
- Battery Charger, 10 Amp. 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)

Paralleling System

- Manual Speed Adjustment (Decision-Maker® 550 controller only)
- Manual Voltage Control (Decision-Maker[®] 550 controller only) (Contact Factory)
- □ Remote Voltage Adjust Control (Decision-Maker® 550 only)

Miscellaneous

- ☐ Air Cleaner Restriction Indicator
- Centrifugal Oil Filter (Prime Power only)
- Engine Fluids (oil and coolant) Added
- Rated Power Factor Testing
- Spring Isolators

Literature

- Decision-Maker® Paralleling System (DPS)
- General Maintenance
- NFPA 110
- Overhaul
- Production

Warranty

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

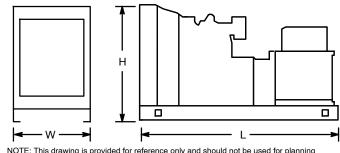
Other Options

Dimensions and Weights

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

8087 x 3062 x 3292 (318.4 x 120.6 x 129.6)

Weight (radiator model), wet, max., kg (lb.): 26273 (57800) Note: See ADV drawing for specific dimensions and weight based on generator selection



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: