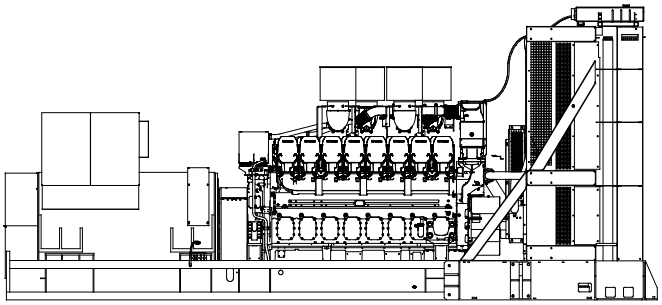
KOHLER®

Industrial Diesel Generator Set - KD3000-YF
for Stationary Emergency Applications

KDxxxx-YF designates a 50 Hz generator set with a fuel optimized engine.



Ratings Range

		50 Hz
Standby:	**kW**	2640
	kVA	3300
Prime:	**kW**	2400
	kVA	3000

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 accepts rated load in one step.
- A standard three-year or 1000-hour limited warranty for standby applications. Five-year basic, five-year comprehensive, and ten-year extended limited warranties are also available.
- A standard two-year or 8700-hour limited warranty for prime power applications.
- Other features:
  - Kohler designed controllers for one-source system integration and remote communication. See Controller on page 4.
  - The low coolant level shutdown prevents overheating (standard on radiator models only).

General Specifications

Orderable Generator Model Number	GMKD3000
Manufacturer	Kohler
Engine: model	KD83V16
Alternator Choices	KH07632TO4D
Performance Class	Per ISO 8528-5
One Step Load Acceptance	100%
Voltage	380 V, 415 V, 3300 V, 11000 V
Controller	APM802
Fuel Consumption, L/hr (gal./hr) 100% at Standby	639 (168.9)
Fuel Consumption, L/hr (gal./hr) 100% at Prime Power	547 (144.6)
Data Center Continuous (DCC) Rating (Refer to TIB-101 for definitions)	Same as the Prime Rating below

Generator Set Ratings

				130°C Rise Standby Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
KH07632TO4D	220/380	3	50	2640/3300	5014	2400/3000	4559
	240/415	3	50	2640/3300	4591	2400/3000	4174
	1905/3300	3	50	2640/3300	578	2400/3000	525
	6350/11000	3	50	2640/3300	174	2400/3000	158

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.

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Engine Specifications	50 Hz
Manufacturer	Kohler
Engine: model	KD83V16
Engine: type	4-Cycle, Turbocharged, Intercooled
Cylinder arrangement	16-V
Displacement, L (cu. in.)	83 (5048)
Bore and stroke, mm (in.)	175 x 215 (6.89 x 8.46)
Compression ratio	16.0:1
Piston speed, m/min. (ft./min.)	645 (2116)
Main bearings: quantity, type	9, Precision Half Shells
Rated rpm	1500
Max. power at rated rpm, kWm (BHP)	2835 (3802)
Cylinder head material	Cast Iron
Crankshaft material	Steel
Valve (exhaust) material	Steel
Governor: type, make/model	KODEC Electronic Control
Frequency regulation, no-load to-full load	Isochronous
Frequency regulation, steady state	±0.25%
Frequency	Fixed
Air cleaner type, all models	Dry

Lubricating System	50 Hz
Type	Full Pressure
Oil pan capacity with filter (initial fill), L (qt.)	420 (444)
Oil filter: quantity, type	8, Cartridge
Oil cooler	Water-Cooled

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. fuel flow, Lph (gph)	835 (221)
Min./max. fuel pressure at engine supply connection, kPa (in. Hg)	-30/30 (-8.8/8.8)
Maximum diesel fuel lift, m (ft.)	3.7 (12)
Max. return line restriction, kPa (in. Hg)	30 (8.9)
Fuel filter: quantity, type	3, Primary Engine Filter 2, Fuel/Water Separator
Recommended fuel	#2 Diesel ULSD

Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	**Standby Rating**
100%	639 (168.9)
75%	514 (136.0)
50%	323 (85.3)
25%	199 (52.6)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	547 (144.6)
75%	426 (112.5)
50%	304 (80.3)
25%	182 (48.1)

Radiator System	50 Hz
Ambient temperature, °C (°F)	40 (104)
Engine jacket water capacity, L (gal.)	375 (99)
Radiator system capacity, including engine, L (gal.)	1192 (315)
Engine jacket water flow, Lpm (gpm)	2256 (596)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1040 (59144)
Charge cooler water flow, Lpm (gpm)	583 (154)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	610 (34690)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	2743 (108)
Fan, kWm (HP)	70 (93.8)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

Remote Radiator System†	50 Hz
Exhaust manifold type	Dry
Connection sizes:	Class 150 ANSI Flange
Water inlet/outlet, mm (in.)	216 (8.5) Bolt Circle
Intercooler inlet/outlet, mm (in.)	178 (7.0) Bolt Circle
Static head allowable above engine, kPa (ft. H_2O)	250 (83.6)

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

Exhaust System	50 Hz
Exhaust flow at rated kW, m^3/min. (cfm)	554 (19556)
Exhaust temperature at rated kW at 25°C (77°F) ambient, dry exhaust, °C (°F)	472 (882)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing

Electrical System	50 Hz
Battery charging alternator:	
Ground (negative/positive)	Negative
Volts (DC)	24
Ampere rating	140
Starter motor qty. at starter motor power rating, rated voltage (DC)	Standard: 2 @ 9 kW, 24
Battery, recommended cold cranking amps (CCA):	
Quantity, CCA rating each, type (with standard starters)	4, 1110, AGM
Battery voltage (DC)	12

Air Requirements	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm)‡	3823 (135000)
Cooling air required for generator set when equipped with city water cooling or remote radiator, based on 14°C (25°F) rise, m^3/min. (scfm)‡	1154 (40738)
Combustion air, m^3/min. (cfm)	200 (7054)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	143 (8132)
Alternator, kW (Btu/min.)	179 (10200)

‡ Air density = 1.20 kg/m^3 (0.075 lbm/ft^3)

Alternator Specifications		50 Hz
Type		4-Pole, Rotating-Field
Exciter type		Brushless, Permanent-Magnet Pilot Exciter
Voltage regulator		Solid-State, Volts/Hz
Insulation:		NEMA MG1, UL 1446, Vacuum Pressure Impregnated (VPI)
Material		Class H, Synthetic, Nonhygroscopic
Temperature rise		130°C, 150°C Standby
Bearing: quantity, type		2, Sealed
Coupling type		Coupling
Amortisseur windings		Full
Alternator winding type		Form Wound
Rotor balancing		125%
Voltage regulation, no-load to full-load		±0.25%
Unbalanced load capability		100% of Rated Standby Current
Peak motor starting kVA:		(35% dip for voltages below)
380 V	KH07632TO4D	6165
3300 V	KH07632TO4D	7143
11000 V	KH07632TO4D	8181

Alternator Standard Features

- The pilot-excited, permanent magnet (PM) alternator provides superior short-circuit capability.
- All models are brushless, rotating-field alternators.
- 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.
- Brushless alternator with brushless pilot exciter for excellent load response.

NOTE: See TIB–102 Alternator Data Sheets for alternator application data and ratings, efficiency curves, voltage dip with motor starting curves, and short circuit decrement curves.

Controller

APM802 Controller
Provides advanced control, system monitoring, and system diagnostics for optimum performance and compatibility.

- Graphic display with touch screen and menu control provide easy local data access
- Measurements are selectable in metric or English units
- User language is selectable
- Two USB ports allow connection of a flash drive, mouse, or keypad
- Electrical data, mechanical data, and system settings can be saved to a flash drive
- Ethernet port allows connection to a PC type computer or Ethernet switch
- The controller supports Modbus® RTU and TCP protocols
- NFPA 110 Level 1 capability

Refer to G6-152 for additional controller features and accessories.

Modbus® is a registered trademark of Schneider Electric.

Codes and Standards

- Engine–generator set is designed and manufactured in facilities certified to standards ISO2008:9001 and ISO2004:14001.
- Generator set meets NEMA MG1, BS5000, ISO, DIN EN, and IEC standards, NFPA 110
- Engine generator set is tested to ISO 8528-5 for transient response.
- The generator set and its components are prototype-tested, factory-built, and production-tested.

Warranty Information

- A standard three-year or 1000-hour limited warranty for standby applications. Five-year basic, five-year comprehensive, and ten-year extended limited warranties are also available.
- A standard two-year or 8700-hour limited warranty for prime power applications.

Available Warranties for Standby Applications

- ❑ 5-Year Basic Limited
- ❑ 5-Year Comprehensive Limited
- ❑ 10-Year Major Components Limited

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Standard Features

- Closed Crankcase Ventilation (CCV) Filters
- Customer Connection
- Fan Bearing Grease Extension
- Fuel/Water Separator
- Generator Heater
- Local Emergency Stop Switch
- Oil Drain and Coolant Drain Extension
- Operation and Installation Literature
- Spring Isolation Under the Skid

Available Options

Open Unit

- ❑ Exhaust Silencer, Critical (kits: PA-361617 qty. 2)
- ❑ Exhaust Silencer, Hospital (kits: PA-361626 qty. 2)
- ❑ Flexible Exhaust Connector, Stainless Steel

Controller

- ❑ Input/Output, Analog
- ❑ Input/Output, Digital
- ❑ Input/Output, Harness
- ❑ Load Shed
- ❑ Manual Key Switch
- ❑ Remote Emergency Stop
- ❑ Remote Serial Annunciator Panel

Cooling System

- ❑ Block Heater; 12000 W, 380 V, 3 Ph
  Required for ambient temperatures below 10°C (50°F) and block heater kit includes air intake manifold grid heater

Electrical System

- ❑ Battery, AGM (kit with qty. 4)
- ❑ Battery Charger
- ❑ Battery Heater
- ❑ Battery Rack and Cables
- ❑ Bus Bar
- ❑ Line Circuit Breaker (loose)
- ❑ Line Circuit Breaker with Shunt Trip (loose)

Fuel System

- ❑ Flexible Fuel Lines
- ❑ Restriction Gauge (for fuel/water separator)

Literature

- ❑ General Maintenance
- ❑ NFPA 110
- ❑ Overhaul
- ❑ Production

Miscellaneous

- ❑ Air Cleaner, Heavy Duty
- ❑ Air Cleaner Restriction Indicator
- ❑ Alternator Air Filter (will reduce generator set output by 5%)
- ❑ Automatic Oil Replenishment System
- ❑ Engine Fluids (oil and coolant) Added
- ❑ Rated Power Factor Testing

Warranty (Standby Applications only)

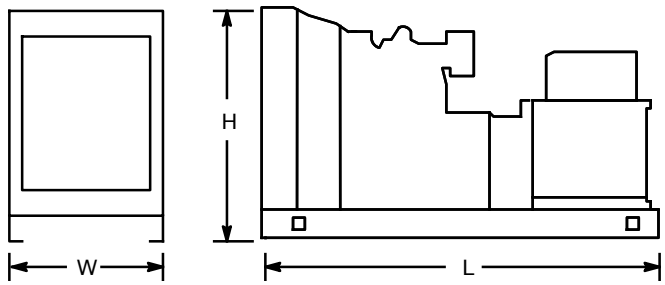
- ❑ 5-Year Basic Limited
- ❑ 5-Year Comprehensive Limited
- ❑ 10-Year Major Components Limited

Other

- ❑
- ❑

Dimensions and Weights

Overall Size, max., L x W x H, mm (in.):	7648 x 3172 x 3451 (301.0 x 124.9 x 135.9)
Weight, radiator model, max. wet, kg (lb.):	32513 (71707)



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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KOHLER CO., Kohler, Wisconsin 53044 USA
Phone 920-457-4441, Fax 920-459-1646
For the nearest sales and service outlet in the US and Canada, phone 1-800-544-2444
KOHLERPower.com

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