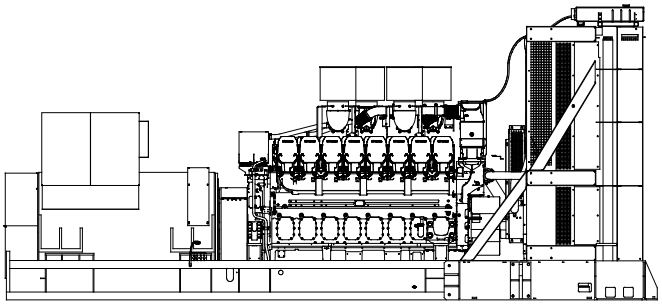
KOHLER

Industrial Diesel Generator Set - KD3000

Tier 2 EPA-Certified for Stationary Emergency Applications



KDxxxx designates a generator set with a Tier 2 EPA-Certified engine.
KDxxxx-F designates a 60 Hz generator set with a fuel optimized engine.

Ratings Range

		60 Hz
Standby:	**kW**	3000
	kVA	3750
Prime:	**kW**	2720
	kVA	3400

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 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	KH06670TO4D KH07631TO4D KH07632TO4D* KH08430TO4D KH09370TO4D*
Performance Class	Per ISO 8528-5
One Step Load Acceptance	100%
Voltage	480 V, 600 V, 4160 V, 6600 V, or 12470–13800 V
Controller	APM802
Fuel Consumption, L/hr (gal./hr) 100% at Standby	759 (200.5)
Fuel Consumption, L/hr (gal./hr) 100% at Prime Power	723 (191.0)
Emission Level Compliance (KDxxxx)	Tier 2
Open Unit Noise Level @ 7 m dB(A) at Rated Load	99
Data Center Continuous (DCC) Rating (Refer to TIB-101 for definitions)	Same as the Prime Rating below

* Contact the factory for additional information.

Generator Set Ratings

				130°C Rise Standby Rating		105°C Rise Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
KH07631TO4D	7200/12470	3	60	3000/3750	174	2720/3400	158
	7620/13200	3	60	3000/3750	165	2720/3400	149
	7970/13800	3	60	3000/3750	157	2720/3400	143
KH07632TO4D*	347/600	3	60	3000/3750	3609	2720/3400	3272
	3810/6600	3	60	3000/3750	329	2720/3400	298
	7200/12470	3	60	3000/3750	174	2720/3400	158
KH08430TO4D	277/480	3	60	3000/3750	4511	2720/3400	4090
	347/600	3	60	3000/3750	2609	2720/3400	3272
	2400/4160	3	60	3000/3750	521	2720/3400	472
KH09370TO4D*	277/480	3	60	3000/3750	4511	2720/3400	4090
	2400/4160	3	60	3000/3750	521	2720/3400	472
	3810/6600	3	60	3000/3750	329	2720/3400	298
KH06670TO4D	3810/6600	3	60	3000/3750	329	2720/3400	298
	7200/12470	3	60	3000/3750	174	2720/3400	158
	7620/13200	3	60	3000/3750	165	2720/3400	149
	7970/13800	3	60	3000/3750	157	2720/3400	143

* Contact the factory for additional information.

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	60 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.)	774 (2539)
Main bearings: quantity, type	9, Precision Half Shells
Rated rpm	1800
Max. power at rated rpm, kWm (BHP)	3230 (4332)
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	60 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	60 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	60 Hz
Diesel, Lph (gph) at % load	**Standby Rating**
100%	759 (200.5)
75%	669 (176.8)
50%	456 (120.4)
25%	269 (71.0)
Diesel, Lph (gph) at % load	**Prime Rating**
100%	723 (191.0)
75%	602 (159.1)
50%	441 (116.5)
25%	239 (63.1)

Radiator System	60 Hz
Ambient temperature, °C (°F)	50 (122)
Engine jacket water capacity, L (gal.)	375 (99)
Radiator system capacity, including engine, L (gal.)	1192 (315)
Engine jacket water flow, Lpm (gpm)	2707 (715)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	1128 (64205)
Charge cooler water flow, Lpm (gpm)	700 (185)
Heat rejected to charge cooling water at rated kW, dry exhaust, kW (Btu/min.)	865 (49192)
Water pump type	Centrifugal
Fan diameter, including blades, mm (in.)	2743 (108)
Fan, kWm (HP)	95 (127.4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.125 (0.5)

Remote Radiator System†	60 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	60 Hz
Exhaust flow at rated kW, m^3/min. (cfm)	675 (23837)
Exhaust temperature at rated kW at 25°C (77°F) ambient, dry exhaust, °C (°F)	478 (892)
Maximum allowable back pressure, kPa (in. Hg)	8.5 (2.5)
Exh. outlet size at eng. hookup, mm (in.)	See ADV drawing

Electrical System	60 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	60 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)‡	1172 (41371)
Combustion air, m^3/min. (cfm)	243 (8581)
Heat rejected to ambient air:	
Engine, kW (Btu/min.)	148 (8417)
Alternator, kW (Btu/min.)	179 (10200)

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

Alternator Specifications		60 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)
480 V	KH08430TO4D	9908
480 V	KH09370TO4D	10941

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 ISO 9001.
- 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.

Third-Party Compliance

- Tier 2 EPA-Certified for Stationary Emergency Applications

Available Approvals and Listings

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

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

Engine Type

- ❑ KDxxxx Tier 2 EPA-Certified Engine
- ❑ KDxxxx-F Fuel Optimized Engine

Approvals and Listings

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

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; 10500 W, 208 V, (Select 1 Ph or 3 Ph) *
- ❑ Block Heater; 12000 W, 240 V, (Select 1 Ph or 3 Ph) *
- ❑ Block Heater; 12000 W, 380 V, 3 Ph *

* Required for Ambient Temperatures Below 5°C (41°F).

Electrical System

- ❑ Battery, AGM (kit with qty. 4)
- ❑ Battery Charger
- ❑ Battery Rack and Cables
- ❑ 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
- ❑ Automatic Oil Replenishment System
- ❑ Engine Fluids (oil and coolant) Added
- ❑ Rated Power Factor Testing

Warranty (Standby Applications only)

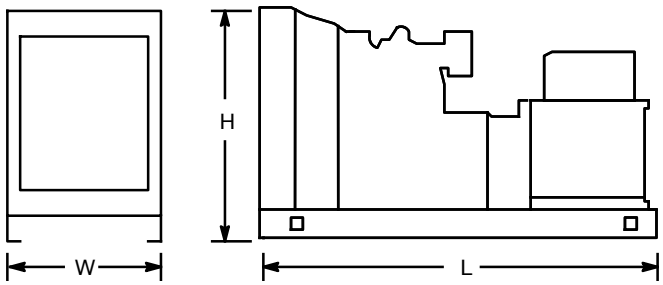
- ❑ 5-Year Basic Limited
- ❑ 5-Year Comprehensive Limited
- ❑ 10-Year Major Components Limited

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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KOHLERPower.com

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