Model: KD200U/KD220

KOHLER POWER SYSTEMS **200–600 V** **Diesel**

ISO 9001 KOHLER POWER SYSTEMS NATIONALLY REGISTERED

Ratings Range

		KD200U 60 Hz	KD220 50 Hz
Standby:	**kW**	185–200	176
	kVA	231–250	220
Prime:	**kW**	168–182	160
	kVA	210–227	200

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.
- A one-year limited warranty covers all systems and components.
- John Deere engine with 12-volt battery charging alternator.
- Leroy Somer single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C (122°F) ambient air capability.
- Skid and vibration isolators.
- Subbase fuel tank, 60 Hz, 390 L (103 gal.).
- Subbase fuel tank, 50 Hz, 340 L (90 gal.).
- Dry type air filter.
- Main line circuit breaker.
- Microprocessor controller.
- Battery, battery rack, and cables.
- Industrial 9 dB(A) reduction exhaust silencer (loose).
- Operation and installation literature.

Generator Set Ratings

				Standby Rating		Prime Rating	
Alternator	**Voltage**	**Ph**	**Hz**	**kW/kVA**	**Amps**	**kW/kVA**	**Amps**
LSA462M5	120/208	3	60	190/238	661	173/216	525
	127/220	3	60	200/250	656	182/227	598
	115/230	3	60	185/231	580	168/210	528
	120/240	3	60	190/238	573	173/216	521
	220/380	3	60	200/250	380	182/227	342
	254/440	3	60	200/250	328	182/227	299
	277/480	3	60	200/250	301	182/227	274
	347/600	3	60	200/250	241	182/227	219
	115/200	3	50	176/220	635	160/200	578
	110/220	3	50	176/220	577	160/200	525
	127/220	3	50	176/220	577	160/200	525
	115/230	3	50	176/220	552	160/200	503
	120/240	3	50	176/220	529	160/200	482
	220/380	3	50	176/220	334	160/200	304
	230/400	3	50	176/220	318	160/200	289
	240/415	3	50	176/220	306	160/200	279

With Available Enclosure Accessory

RATINGS: All three-phase units are rated at 0.8 power factor. See TIB-109 for generator set derate tables.
Obtain the technical information bulletin (TIB-101) on ratings guidelines for the complete ratings definitions.
PRP: Prime power is available for an unlimited number of annual operating hours in variable load applications in accordance with ISO-8528/1.
A 10% overload capability is available for a period of 1 hour within a 12-hour period of operating in accordance with ISO-3046/1.
ESP: The emergency standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO-8528/1. Overload is not allowed.
The generator set manufacturer reserves the right to change the design or specifications without notice and without any obligation or liability whatsoever.

Alternator Specifications

- NEMA-MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards compliance for temperature rise and motor starting.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxy varnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor.

Specifications	60 Hz	50 Hz
Ratings voltage	480 V	400 V
Standby rating @ 27°C, kVA	273	223
Prime rating @ 40°C, kVA	250	200
Efficiency @ full load, %	92.7	92.3
Air flow, m^3/min. (cfm)	30.6 (1081)	25.8 (911)
Direct axis subtransient reactance (X"d), %	9.2	8.8

Specifications	Alternator
Manufacturer	Leroy Somer
Type	4-Pole, Rotating-Field
Exciter type	Shunt
Leads: quantity, type	12, Reconnectable
Voltage regulator	Solid State, R230
Insulation:	NEMA MG1
Material	Class H
Bearing: quantity, type	1, Sealed
Coupling	Direct
Voltage regulation, no-load to full-load	±1%

Application Data

Engine

Engine Specifications	60 Hz	50 Hz
Manufacturer	John Deere	
Engine model	6068HF475	
Engine type	4-Cycle, Turbocharged, Aftercooled	
Cylinder arrangement	6 Inline	
Displacement, L (cu. in.)	6.72 (410)	
Bore and stroke, mm (in.)	106 x 127 (4.17 x 5.0)	
Compression ratio	17:1	
Piston speed, m/min. (ft./min.)	457 (1500)	381 (1248)
Rated rpm	1800	1500
Max. power at rated rpm, kWm (BHP)	229 (307)	204 (273)
Valve material:		
Intake	Chromium-Silicon Steel	
Exhaust	Stainless Steel	
Governor type	Isochronous	
Frequency regulation, no-load to full-load	ISO 5%	
Frequency regulation, steady state	±0.5%	
Air cleaner type, all models	Dry	

Exhaust

Exhaust System	60 Hz	50 Hz
Exhaust manifold type	Dry	
Exhaust flow at rated kW, m^3/min. (cfm)	37.3 (1318)	31.5 (1113)
Exhaust temperature at rated kW, dry exhaust, °C (°F)	533 (991)	524 (975)
Maximum allowable back pressure, kPa (in. Hg)	7.5 (2.2)	
Exhaust outlet size at engine hookup, mm (in.)	115 (4.53)	

Engine Electrical

Engine Electrical System	60 Hz	50 Hz
Battery charging alternator:	12 Volt	
Ground (negative/positive)	Negative	
Volts (DC)	12	
Starter motor rated voltage (DC)	12	
Battery, recommended cold cranking amps (CCA):		
Quantity, CCA rating each	One, 760	
Battery voltage (DC)	12	

Fuel

Fuel System	60 Hz	50 Hz
Max. fuel flow, Lph (gph)	89 (23.5)	82.3 (21.7)
Fuel prime pump	Manual	
Recommended fuel	#2 Diesel	
Fuel tank capacity, L (gal.)	390 (103)	340 (90)

Lubrication

Lubricating System	60 Hz	50 Hz
Type	Full Pressure	
Oil pan capacity, L (qt.)	32 (34)	
Oil pan capacity with filter, L (qt.)	33.0 (34.8)	

Cooling

Radiator System	60 Hz	50 Hz
Ambient temperature, °C (°F)	50 (122)	
Radiator system capacity, including engine, L (gal.)	30 (7.9)	
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min.)	—	—
Water pump type	Centrifugal	
Fan, kWm (HP)	5 (6.7)	3 (4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in. H_2O)	0.2 (0.8)	

Application Data

Operation Requirements

Air Requirements	60 Hz	50 Hz
Radiator-cooled cooling air, m^3/min. (scfm) *	384 (13562)	306 (10807)
Combustion air, m^3/min. (cfm)	14.0 (494)	12.1 (428)

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

Fuel Consumption	60 Hz	50 Hz
Diesel, Lph (gph) at % load	**Standby Rating**	
110% (of the standby rating)	56.0 (14.8)	48.6 (12.8)
Diesel, Lph (gph) at % load	**Prime Rating**	
100% (of the prime rating)	49.9 (13.2)	43.5 (11.5)
75% (of the prime rating)	36.9 (9.7)	32.6 (8.6)
50% (of the prime rating)	25.3 (6.7)	22.0 (5.8)

Controllers

Decision-Maker™ 1000

Automation

- Test LEDs
- Voltage and speed stabilization

Engine Parameters

- Engine speed indication (with LCD message)
- Battery voltage indication (with LCD message)
- Elapsed hour meter (with LCD message)
- Fuel solenoid control
- Starter control

Measurements

- Frequency, Hz (with LCD message)

Operation and/or Safety Lights

- Oil pressure fault
- Water temperature fault
- Fail to start fault
- Overspeed fault (≥60 kVA)
- Set ready for load
- Charging alternator fault
- General alarm
- General fault
- Panel lamp
- Emergency stop fault

Safety Devices

- Overspeed fault
- Automatic standby

Miscellaneous

- Fault reset
- Three-phase with or without neutral, two-phase, or single-phase use

Decision-Maker™ 4000

Standard Features

- Large LCD display panel
- Unique control wheel for system access
- User buttons for start, stop, menu, and escape
- Emergency stop button
- On/off key switch
- Panel-mounted battery fuse
- Panel-mounted USB ports for PC access and software upgrades
- Password-protected access to control parameters
- Upgradeable software for future enhancements
- Easy upgrade from Decision-Maker™ 1000

LCD Panel Features

- 600 x 800 resolution
- Multiple lines of text or graphic display
- Icons for quick identification of system status
- Five languages: English, French, German, Portuguese, and Spanish

Communication Features

- Engine communication via CANbus
- Modbus communication via RS-485 or ethernet
- PC and flash drive connections via USB

Functions

- View and adjust system operation parameters
- View system faults

Viewable/Selectable Parameters (may require optional module)

- Voltage: phase-to-neutral, total voltage
- Current
- Frequency
- Power (active/reactive/apparent)
- Power factor
- Engine speed
- Oil pressure
- Coolant temperature
- Battery voltage
- Fuel level (%)
- Time delays

Viewable Faults (over 60 individual faults are monitored) including:

- Alternator protection (if equipped)
- Circuit breaker and ground fault protection
- Communication and engine ECM monitoring
- Cooling air monitoring
- Electrical charging system
- Engine cooling system
- Engine lube system
- Fuel system
- Generator set status

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Available Accessories

Enclosed Unit

- ❑ Sound Enclosure M226, 60 Hz, 70.1 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)
- ❑ Sound Enclosure M226, 50 Hz, 68.6 dB(A) @ 7 m (23 ft.), Standby (with enclosed critical silencer)

Open Unit

- ❑ Exhaust Silencer, Critical 40 dB(A) Reduction
- ❑ Exhaust Silencer, Residential 29 dB(A) Reduction
- ❑ Flexible Exhaust Connector
- ❑ Protection Mesh

Cooling System

- ❑ Block Heater [recommended for ambient temperatures below 0°C (32°F)]
- ❑ Radiator Core Guard

Decision-Maker™ 1000 Controller

- ❑ Alarm Horn
- ❑ Analog Indicator
- ❑ Differential Protection with Time and Sensitivity Adjustment
- ❑ Differential Triggering Fault
- ❑ External ATS Position
- ❑ External Starting Order
- ❑ Line Voltages, Volts Indicator
- ❑ Overload or Short-Circuit Fault
- ❑ Permanent Insulation Controller
- ❑ Phase Currents, Amps Indicator
- ❑ Plug Preheating
- ❑ Plug Preheating Control
- ❑ Remote Start Capability
- ❑ Single Voltages, Volts Indicator
- ❑ Utility Sensing, 3-Phase
- ❑ Water Preheating Control

Decision-Maker™ 4000 Controller

- ❑ Alternator Protection
- ❑ Audible Alarm Module
- ❑ Five Expandable Modules with Four Inputs/Six Outputs Each
- ❑ Network Modules (RTC and GSM modems and ethernet router)
- ❑ NFPA-110 Module
- ❑ Remote Annunciator
- ❑ Voltage/Speed Adjustment Module
- ❑ WinTelys Software

Fuel System

- ❑ Automatic Fuel Tank Fill Kit
- ❑ Subbase Fuel Tank with Secondary Containment Basin
- ❑ Subbase Fuel Tank Leak Alarm
- ❑ Water Separator Fuel Filter

Electrical System

- ❑ Battery Charger, Equalize/Float Type
- ❑ Battery Isolator Switch

Engine and Alternator

- ❑ Alternator Strip Heater
- ❑ Air Cleaner, Heavy Duty (with air restriction indicator)
- ❑ Droop Kit with 3-Function Voltage Regulator
- ❑ Lube Oil Drain Pump
- ❑ PMG Alternator and Voltage Regulator
- ❑ Tropical Heavy-Duty Alternator Insulation

Miscellaneous Accessories

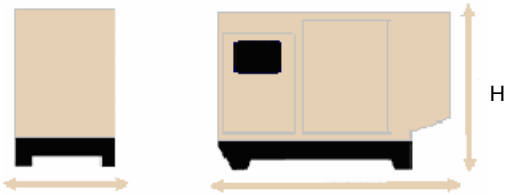
- ❑ _____
- ❑ _____
- ❑ _____
- ❑ _____

Dimensions and Weights

Open Model

Overall Size, L x W x H, mm (in.):	2370 x 1114 x 1480 (93 x 44 x 58)
Weight, wet, kg (lb.):	2130 (4695)

With Available Enclosure Accessory



Overall Size, L x W x H, mm (in.):	3508 x 1200 x 1830 (138 x 47 x 72)
Weight, wet, kg (lb.):	2740 (6039)

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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