

Model: **KD110W**

KOHLER Power Systems

220-415V

Diesel



Ratings Range

	KD110W
	50HZ
Standby : kW	88
kVA	110
Prime : kW	80
kVA	100

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.
- KOHLER single-bearing alternator with insulation class H.
- Unit-mounted radiator with 50°C(122°F) ambient air capability.
- Skid and vibration isolators.
- Fuel Tank, 190 L (50 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

Alternator	V	PH	Hz	Standby Rating		Prime Rating	
				kW/kVA	Amps	kW/kVA	Amps
4R9X	220/380	3	50	88/110	167	80/100	151
	230/400	3	50	88/110	159	80/100	145
	240/415	3	50	88/110	153	80/100	138



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 in 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 Data

- NEMA-MG21 PART32, ISO8528, IEEE Std-115, CSA standards compliance for temperature rise and motorstarting.
- Self-ventilated and dripproof construction.
- Vacuum-impregnated windings with fungus-resistant epoxyvarnish for dependability and long life.
- Superior voltage waveform from a two-thirds pitch stator and skewed rotor

Specifications	4R9X	50HZ
Ratings voltage		400V
Standby rating(27°C) , kVA		110
Standby rating(40°C) , kVA		106
Prime rating(40°C) , kVA		100
Efficiency (full load)		89.7
Air flow, ft ³ /min		716
Direct axis subtransient reactance (X"d), Per-unit value		0.116

Specifications	4R9X	Alternator
Manufacturer		KOHLER
Type		4-Pole Rotating-Field
Exciter type		PMG, Brushless
Leads: quantity, type		12, Reconnectable
Voltage regulator		Solid State, Fast Response
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 Specification	50 Hz
Manufacturer	John Deere
Engine model	4045HF120
Engine type	4-Cycle, Turbocharged, Aftercooled
Cylinder arrangement	4,L
Displacement, L (in3)	4.5 (273)
Bore and stroke, mm (in)	106 × 127 (4.17 × 5.0)
Compression ratio	17:1
Piston speed, m/min (ft/min)	381 (1248)
Rated rpm (r/min)	1500
Max. power at rated rpm, kW (BHP)	100 (134)
Valve material:	
Intake	Chromium-Silicon Steel
Exhaust	Stainless Steel
Governor type:	Mechanical
Frequency droop	±5%
Air cleaner type, all models	Dry

Exhaust	
Exhaust System	50 Hz
Exhaust manifold type	Dry
Exhaust flow at rated kW, m3/min. (cfm)	17.0 (600)
Exhaust temperature at rated kW, dry exhaust, °C(°F)	545 (1013)
Maximum allowable back pressure, kPa (in Hg)	7.5 (2.2)
Exhaust outlet size at engine hookup, mm(in)	76 (3.0)

Engine Electrical	
Engine Electrical System	50 Hz
Battery charging alternator:	
Ground(negative/positive)	Negative
Volts (DC)	12V
Starter motor rated voltage (DC)	12V
Battery, recommended cold cranking Amps (CCA):	
Quantity, CCA rating each	1, 680
Battery voltage (DC)	12V

Fuel	
Fuel System	50 Hz
Max. fuel flow, Lph (gph)	108 (28.5)
Fuel prime pump	Manual
Recommended fuel	#2 Diesel
Fuel tank Capacity, L(qal)	190 (50.2)

Lubricating	
Lubricating System	50 Hz
Type	Full Pressure
Oil pan capacity, L(qt)	12.5 (13.2)
Oil pan capacity with filter, L (qt)	13.5 (14.4)

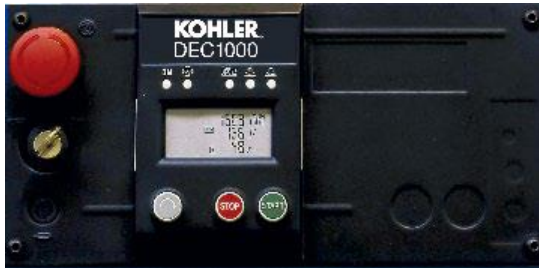
Cooling	
Radiator System	50 Hz
Ambient temperature, °C (°F)	50 (122)
Radiator system capacity, including engine, L (gal)	20.2 (5.3)
Heat rejected to cooling water at rated kW, dry exhaust, kW (Btu/min)	36 (2047)
Water pump type	Centrifugal
Fan , kW (Hp)	2.5 (3.4)
Max. restriction of cooling air, intake and discharge side of radiator, kPa (in H2O)	0.2(0.8)

Application Data

Operation Requirements

Air Requirements	50 Hz
Radiator-cooled cooling air, m ³ /min (scfm)	222 (7841)
Combustion air, m ³ /min (ft ³ /min) - Air density = 1.20 kg/m ³ (0.075 lb/ft ³)	6.4 (225)
Fuel Consumption	50 Hz
Diesel, Lph (gph) at % load	
100% (Standby)	25.5 (6.7)
Diesel, Lph (gph) at % load	
100% (Prime)	23.5 (6.2)
75%	16.5 (4.4)
50%	11.5 (3.0)

Controller



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
- Six languages: Chinese, 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

KOHLER® Power Systems

Enclosed Unit

- Sound Enclosure M129, 50 Hz, 67 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 for Exhaust Parts

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

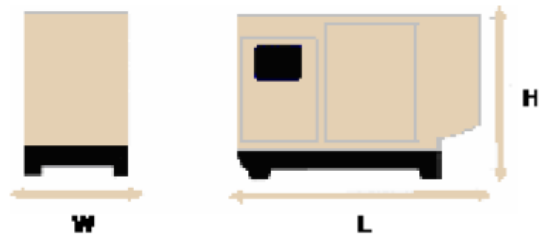
Open Model



Overall Size, L×W×H mm (in): 1950×1084×1330 (77×43×52)

Weight, wet, kg (lb.): 1411 (3111)

With Available Enclosure Accessory



Overall Size, L×W×H mm (in): 2554×1170×1680 (101×46×66)

Weight, wet, kg (lb.): 1811 (3993)

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: :