KOHLER®

Industrial Diesel Generator Set – KD110
50 Hz

RATINGS 400 V - 50 Hz		
Standby	kVA	110
	kWe	88
Prime	kVA	100
	kWe	80

Benefits & features

KOHLER SDMO premium quality

- Design offices using the latest technical innovations
- Modern fully certified factories
- A cutting edge laboratory
- The generating set, its components and a wide range of options have been fully developed, prototype tested, factory built, and production tested

KOHLER SDMO premium performances

- Optimized and certified sound levels
- Reliable power, even in extreme conditions
- Optimized fuel consumption
- Compact footprint
- Best quality of electricity, high starting and loading capacity, according to ISO8528-5
- Robust base frames and high-quality enclosures
- Protection of installations and people
- Approved in line with the most stringent standards

Engines

- Premium level engines, in-house or from strong partners
- High power density, small footprint
- Low temperature starting capability
- Long maintenance interval

Alternator

- Provide industry leading motor starting capability
- Made in Europe
- Excitation system to permit sustained overcurrent > 300% In, during 10 sec
- Built with a class H insulation and IP23

Cooling

- A flexible solution using an electrical driven radiator fan
- Designed or optimized by KOHLER-SDMO
- High temperature and altitude product capacity available

Base frame and enclosure

- High quality steel with enhanced corrosion resistance
- Highly durable QUALICOAT-certified epoxy paint
- Minimum 1000 hours of resistance to salt spray in accordance with ISO12944
- Ergonomic access to allow easy maintenance and connection of the generator
- Robust design optimized for transportation

GENERAL SPECIFICATIONS

Engine brand	JOHN DEERE
Alternator commercial brand	KOHLER
Voltage (V)	400/230
Standard Control Panel	APM303
Optional control panel	APM403
Consumption @ 100% load ESP (L/h)	25.50
Consumption @ 100% PRP load (L/h)	23.80
Type of Cooling	Mechanical driven fan
Performance class	G3

GENERATOR SETS RATINGS

				Standby Rating			Prime Rating	
	Voltage	PH	Hz	kWe	kVA	Amps	kWe	kVA
KD110	415/240	3	50	88	110	153	80	100
	400/230	3	50	88	110	159	80	100
	380/220	3	50	88	110	167	80	100
	200/115	3	50	88	110	318	80	100
	240 TRI	3	50	88	110	265	80	100
	230 TRI	3	50	88	110	276	80	100
	220 TRI	3	50	88	110	289	80	100

DIMENSIONS COMPACT VERSION

Length (mm)	1950
Width (mm)	1084
Height (mm)	1454
Tank capacity (L)	190
Dry weight (kg)	1010

DIMENSIONS SOUNDPROOFED VERSION

Type soundproofing	M138
Length (mm)	2572
Width (mm)	1126
Height (mm)	1571
Tank capacity (L)	190
Dry weight (kg)	1335
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	80
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	68

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Engine

General

Engine brand	JOHN DEERE
Engine ref.	4045HSG20
Air inlet system	Turbo
Cylinders configuration	L
Number of cylinders	4
Displacement (L)	4.48
Bore (mm) * Stroke (mm)	106 * 127
Compression ratio	17 : 1
Speed (RPM)	1500
Maximum stand-by power at rated RPM (kW)	103
Charge Air coolant	Air/Air
Injection Type	Direct
Governor type	Mechanical
Air cleaner type, models	Dry

Fuel system

Maximum fuel pump flow (L/h)	69
Consumption with cooling system	
Consumption @ 100% load ESP (L/h)	25.50
Consumption @ 100% PRP load (L/h)	23.80
Consumption @ 75% PRP load (L/h)	17.90
Consumption @ 50% PRP load (L/h)	12.60

Lubrication System

Oil system capacity including filters (L)	
Min. oil pressure (bar)	
Max. oil pressure (bar)	
Oil sump capacity (L)	

Air Intake system

Max. intake restriction (mm H2O)	
Intake air flow (L/s)	125

Exhaust system

	PRP	ESP
Exhaust gas temperature (°C)		525
Exhaust gas flow (L/s)		313.30
Max. exhaust back pressure (mm H2O)	750	

Cooling system

Radiator & Engine capacity (L)	
Fan power (kW)	2.50
Fan air flow w/o restriction (m3/s)	
Available restriction on air flow (mm H2O)	
Type of coolant	Glycol-Ethylene
Radiated heat to ambient (kW)	10
Heat rejection to coolant HT (kW)	42
Max coolant temperature, Shutdown (°C)	105
Thermostat begin of opening HT (°C)	
Thermostat end of opening HT (°C)	

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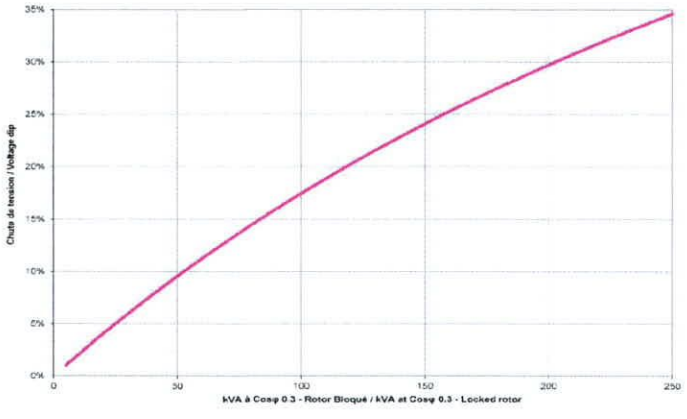
Alternator Specifications	
Alternator commercial brand	KOHLER
Alternator ref.	KH00753T
Number of pole	4
Number of bearing	Single Bearing
Technology	Brushless
Indication of protection	IP23
Insulation class	H
Number of wires	06
Capacity for maintaining short circuit at 3 In for 10 s	Yes
AVR Regulation	Yes
Coupling	Direct

Application data	
Overspeed (rpm)	2250
Power factor (Cos Phi)	0.80
Voltage regulation at established rating (+/- %)	0.50
Wave form : NEMA=TIF	<50
Wave form : CEI=FHT	<2
Total Harmonic Distortion in no-load DHT (%)	<3.5
Total Harmonic Distortion, on linear load DHT (%)	<5
Recovery time (Delta U = 20% transcient) (ms)	500

Performance datas	
Continuous Nominal Rating 40°C (kVA)	100
Unbalanced load acceptance ratio (%)	100

Peak motor starting (kVA) based on x% voltage dip power factor at 0.3



Alternator Standard Features

- All models are brushless, rotating-field alternators
- NEMA MG1, IEEE, and ANSI standards compliance for temperature rise and motor starting
- The AVR voltage regulator provides superior short circuit capability
- Self-ventilated and dip proof construction
- Sustained short-circuit current of up to 300% of the rated current for up to 10 seconds
- Superior voltage waveform

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

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Dimensions compact version

Length (mm) * Width (mm) * Height (mm)	1950 * 1084 * 1454
Dry weight (kg)	1010
Tank capacity (L)	190

Dimensions soundproofed version

M138

Length (mm) * Width (mm) * Height (mm)	2572 * 1126 * 1571
Dry weight (kg)	1335
Tank capacity (L)	190
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	80
Measured acoustic power level (Lwa) 50Hz (75% PRP)	97
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	68

Dimensions DW compact version

Length (mm) * Width (mm) * Height (mm)	2600 * 1150 * 1675
Dry weight (kg)	1285
Tank capacity (L)	500

Dimensions DW soundproofed version

M138-DW

Length (mm) * Width (mm) * Height (mm)	2600 * 1150 * 1792
Dry weight (kg)	1630
Tank capacity (L)	500
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	79
Measured acoustic power level (Lwa) 50Hz (75% PRP)	97
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	68

Dimensions DW 48h soundproofed version

M138-DW48

Length (mm) * Width (mm) * Height (mm)	2600 * 1150 * 1858
Dry weight (kg)	1740
Tank capacity (L)	825
Acoustic pressure level @1m in dB(A) 50Hz (75% PRP)	79
Measured acoustic power level (Lwa) 50Hz (75% PRP)	97
Acoustic pressure level @7m in dB(A) 50Hz (75% PRP)	68

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STANDARD SCOPE OF SUPPLY

All our gensets are fitted with:

- Industrial water cooled DIESEL engine
- Electric starter & charge alternator
- Standard air filter
- Schneider or ABB electric circuit breaker, adapted to the short-circuit current of the generating set
- Single bearing alternator IP 23 T° rise/ insulation to class H/H
- Welded steel base frame with 85% vibration attenuation mounts
- 4 lifting points on the chassis, lifting bar on the top included from 165 kVA ESP or optional
- highly durable QUALICOAT certified epoxy paint
- frame height optimized to allow it to be moved safely by forklift
- enclosure made of new high-quality European steel with enhanced corrosion resistance
- IP 64 locks, made from stainless materials
- enclosures and base frames tested and analyzed by the French Corrosion Institut
- 100% of tanks tested for permeability
- Personal protection ensured by protective grilles on hot and rotating parts
- Separate 9 dB(A) silencer
- Fuel tank welded inside the genset frame
- Retention bund included for gensets up to 110 kVA ESP
- Charged DC starting battery with electrolyte
- Emergency stop button on the outside
- Flexible fuel lines & lub oil drain cock
- Exhaust outlet with flexible and flanges
- User's manual (1 copy)
- Packing under plastic film
- Delivered with oil and antifreeze liquid

CODES AND STANDARDS

Engine-generators set is designed and manufactured in facilities certified to standards ISO9001:2015 & ISO14001:2015. The generator sets and its components are prototype-tested, factory built and production tested and are in compliance with the relevant standards:

- Machinery Directive 2006/42/EC of May 17th 2006
- EMC Directive2014/30/UE
- Safety objectives set out in the Low Voltage Directive 2014/35/UE
- EN ISO 8528-13, EN 60034-1, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 55011, EN 1679-1 et EN 60204-1

POWER RATINGS DEFINITION according to ISO8528-1 (2018-02 edition) and ISO-3046-1

Emergency Standby Power (ESP): The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Average load factor per 24 hours of operation is <70%.

Prime Power (PRP): At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour within 12 hour of operation. Average load factor per 24 hours of operation is <70%.

TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Intlet Temperature, of a barometric pressure of 100 kPA (100 m A.S.L), and 30% relative humidity. For particular conditions in your installation, refer to the derating table