

KOHLER[®] POWER SYSTEMS



DESCRIPTIVE

- 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
- (MTU/Mitsubishi/Volvo/John Deere) engine with 12-volt battery charging alternator.
- Leroy Somer single-bearing alternator with insulation class H.
- Radiator for core T° of 48/50°C max with mechanical fan.
- Skid and vibration isolators.
- Dry type air filter.
- Main line circuit breaker.
- Microprocessor controller.
- Industrial 9 dB(A) reduction exhaust silencer (loose)
- Operation and installation literature.

POWER DEFINITION

PRP : Prime Power is available for an unlimited number of annual operating hours in variable load applications, in accordance with ISO 8528-1.

ESP : The standby power rating is applicable for supplying emergency power in variable load applications in accordance with ISO 8528-1.

Overload is not allowed

TERMS OF USE

According to the standard, the nominal power assigned by the genset is given for 25°C Air Inlet 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.

ASSOCIATED UNCERTAINTY

For the generating sets used indoor, where the acoustic pressure levels depends on the installation conditions, it is not possible to specify the ambient noise level in the exploitation and maintenance instructions . You will also find in our exploitation and maintenance instructions a warning concerning the air noise dangers and the need to implement appropriated preventive measures.

KD110

Engine type	4045HF120
Alternator type	LSA 44.2 VS45

GENERAL CHARACTERISTICS

Frequency (Hz)	50
Reference voltage (V)	400/230
Max power ESP (kVA)	110
Max power ESP (kWe)	88
Max power PRP (kVA)	100
Max power PRP (kWe)	80
Intensity (A)	159
Standard Control Panel	DEC1000
Optional control panel	DEC4000

DIMENSIONS AND NOISE LEVELS

DIMENSIONS COMPACT VERSION

Length (in)	77
Width (in)	43
Height (in)	52
Dry weight (lbs)	2734
Tank capacity (gal)	50

DIMENSIONS SOUNDPROOFED VERSION

Canopy	M129
Length (in).	101
Width (in).	45
Height (in).	66
Dry weight (lbs).	3616
Tank capacity (gal).	50
Acoustic pressure level @1m in dB(A) (associated uncertainty)	78 (0.21)
Sound power level guaranteed (Lwa) in dB(A)	96

POWERS

Voltage	ESP		PRP		Standby Amps
	kWe	kVA	kWe	kVA	
415/240	88	110	80	100	153
400/230	88	110	80	100	159
380/220	88	110	80	100	167
240 TRI	88	110	80	100	265
230 TRI	88	110	80	100	276
220 TRI	88	110	80	100	289
220/127	88	110	80	100	289
200/115	88	110	80	100	318

KD110

ENGINE SPECIFICATIONS

GENERAL ENGINE DATAS

Engine model	JOHN DEERE 4045HF120 , 4-temps, Turbo , Air/Air DC 4 X
Cylinder arrangement	L
Displacement (C.I.)	273.57
Bore (in) x Stroke (in)	4.17 x 5
Compression ratio	17 : 1
Speed (RPM)	1500
Pistons speed (ft/s)	20.83
Maximum stand-by power at rated RPM (BHP)	134.05
Frequency regulation (%)	N/A
BMEP (psi)	235.53
Governor type	Mechanical

COOLING SYSTEM

Radiator & Engine capacity (gal)	5.34
Max water temperature (°F)	221
Outlet water temperature (°F)	199.4
Fan power (kW)	2.5
Fan air flow w/o restriction (cfm)	7839.86
Available restriction on air flow (in. WG)	0.79
Type of coolant	Gencool
Thermostat (°C)	82-94

EMISSIONS

Emission PM (mg/Nm ³)	100
Emission CO (mg/Nm ³)	310
Emission HCNO _x (g/kWh)	N/A
Emission HC (mg/Nm ³)	26

EXHAUST

Exhaust gas temperature (°F)	1013
Exhaust gas flow (cfm)	599.64
Max. exhaust back pressure (in WG)	29.53

FUEL

Consumption @ 110% load (gal/hr)	6.74
Consumption @ 100% load (gal/hr)	6.21
Consumption @ 75% load (gal/hr)	4.36
Consumption @ 50% load (gal/hr)	3.04
Maximum fuel pump flow (gal/hr)	28.53

OIL

Oil capacity (gal)	3.57
Min. oil pressure (psi)	14.5
Max. oil pressure (psi)	72.52
Oil consumption 100% load (gal/hr)	0.01
Carter oil capacity (gal)	3.3

HEAT BALANCE

Heat rejection to exhaust (Btu/mn)	3642.86
Radiated heat to ambient (Btu/mn)	597.66
Heat rejection to coolant (kW)	36

AIR INTAKE

Max. intake restriction (in. WG)	24.61
Intake air flow (cfm)	224.6

GENERAL DATAS

Alternator brand	LEROY SOMER
Alternator type	LSA 44.2 VS45
Number of phase	3
Power factor (Cos Phi)	0.8
Altitude (m)	0 à 1000
Overspeed (rpm)	2250
Number of pole	4
Excitation system	SHUNT
Insulation class / T° class, continuous 40°C	H / H / 125°K
Regulation	N/A
Harmonic factor, no load TGH/THC	N/A
Wave form : NEMA=TIF-(TGH/THC)	N/A
Wave form : CEI=FHT-(TGH/THC)	N/A
Number of bearing	1
Coupling	Direct
Voltage regulation at established rating (%)	+/- 0.5%
Recovery time (Delta U = 20% transient) (ms)	500 ms

OTHER DATAS

Continuous Nominal Rating 40°C (kVA)	105
Standby Rating 27°C (kVA)	116
Efficiencies 4/4 load (%)	90.8
Air flow (cfm)	783.99
Short circuit ratio (Kcc)	0.35
Direct axis synchro reactance unsaturated (Xd) (%)	362
Quadra axis synchro reactance unsaturated (Xq) (%)	217
Open circuit time constant (T'do) (ms)	2555
Direct axis transient reactance saturated (X'd) (%)	14.1
Short circuit transient time constant (T'd) (ms)	100
Direct axis subtransient reactance saturated (X''d) (%)	8.5
Subtransient time constant (T''d) (ms)	10
Quadra axis subtransient reactance saturated (X''q) (%)	10.4
Zero sequence reactance unsaturated (Xo) (%)	0.5
Negative sequence reactance saturated (X2) (%)	9.5
Armature time constant (Ta) (ms)	15
No load excitation current (io) (A)	0.5
Full load excitation current (ic) (A)	2.1
Full load excitation voltage (uc) (V)	38
Recovery time (Delta U = 20% transient) (ms)	500 ms
Engine start (Delta U = 20% perm. or 50% trans.) (kVA)	194.4
Transient dip (4/4 load) - PF : 0,8 AR (%)	17.3
No load losses (W)	1800
Heat rejection (W)	8500

CONTAINMENT

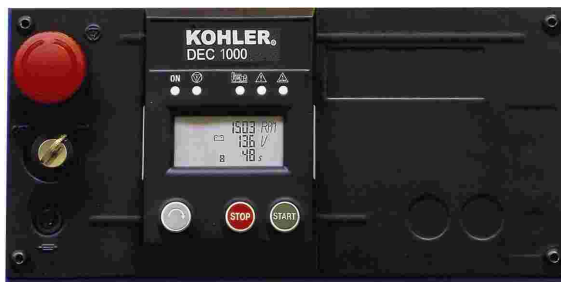
Canopy	M129 DW
Length (in).	102
Width (in).	45
Height (in).	75
Dry weight (lbs).	4539
Tank capacity (gal).	133
Acoustic pressure level @1m in dB(A) (associated uncertainty)	77 (0.21)
Sound power level guaranteed (Lwa) in dB(A)	96

DIMENSIONS AND NOISE LEVELS

CONTAINMENT 48H

Canopy	M129 DW48
Length (in).	102
Width (in).	45
Height (in).	77
Dry weight (lbs).	4553
Tank capacity (gal).	218
Acoustic pressure level @1m in dB(A) (associated uncertainty)	77 (0.21)
Sound power level guaranteed (Lwa) in dB(A)	96

DEC1000, comprehensive and simple



DEC1000

Specifications : Frequency meter, Ammeter, Voltmeter

Alarms and faults : Oil pressure, water temperature, Overcrank, Overspeed (>60 kVA), Min/max alternator, Low fuel level, Emergency stop

Engine parameters : Hours counter, Engine speed, Battery voltage, Fuel level, Alr preheating

DEC4000, ergonomic and user-friendly



DEC4000

Specifications : Frequency meter, Ammeter, Voltmeter

Alarms and faults : Oil pressure, water temperature, No start-up, Overspeed, Min/max alternator, Min/max battery voltage, Low fuel level, Emergency stop

Engine parameters : Hours counter, Oil pressure, Water temperature, Engine speed, Battery voltage, Fuel level