KOHLER Power Systems

# KR110RC

| | |
|---|---|
| Engine | 4045HF120 |
| Alternator | LSA 44.2 VS45 |
| Canopy Type | M3129 DW |
| Performance class | G3 |


## Standard features

| | |
|---|---|
| Frequency (Hz) | 50 |
| Voltage value | 400 |
| 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 |

**Base**

- Leroy-Somer AREP (TS26-S004) Alternator
- Four-pole circuit breaker
- Connection terminal box rental type
- Containment fuel tank and large autonomy
- Forks and frame protection pads
- Battery isolating switch
- Heavy duty air filter with interchangeable cartridge
- Access door to the radiator
- Electronic governor with speed adjustement

**Full Additionnal Equipment**

## Full Version Dimension

| | |
|---|---|
| Length (mm). | 2860 |
| Width (mm). | 1191 |
| Height (mm). | 2000 |
| Dry weight (kg). | 2140 |
| Tank capacity (L). | 527 |
| Autonomy @ 75% of load (h) | 22.9 |
| Autonomy @ 50% of load (h) | N/A |

## Basic Version Dimension

| | |
|---|---|
| Length (mm). | 2860 |
| Width (mm). | 1191 |
| Height (mm). | 2000 |
| Dry weight (kg). | 2140 |
| Tank capacity (L). | 527 |
| Autonomy @ 75% of load (h) | 10 |
| Autonomy @ 50% of load (h) | N/A |

## 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. A 10% overload capability is available for a period of 1 hour within 12-hour period of operation, in accordance with ISO 3046-1 –

**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.

## Term of use

Standard reference conditions ESP/PRP 27 C°/40 C° Air Intlet Temp, 1000 m/1000 m m A.S.L. 60 % relative humidity.

## Sound level

| | |
|---|---|
| Acoustic pressure level @1m in dB(A) | N/A |
| Acoustic pressure level @7m in dB(A) | N/A |
| Acoustic pressure level @15m in dB(A) | N/A |
| Sound power level guaranteed (Lwa) | N/A |

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## Engine specifications

| General Data | |
|---|---|
| Engine | N/A 4045HF120 |
| Cylinder arrangement | L |
| Number of cylinders | 4 |
| Displacement (C.I.) | 4.48 |
| Bore (mm) x Stroke (mm) | 106 x 127 |
| Compression ratio | 17 : 1 |
| Speed (RPM) | 1500 |
| Pistons speed (m/s) | 6.35 |
| Maximum stand-by power at rated RPM (kW) | 100 |
| Frequency regulation (%) | +/- 2.5% |
| BMEP (bar) | 16.24 |
| Governor type | Mechanical |

| Coolant system | |
|---|---|
| Radiator & Engine capacity (L) | 20.2 |
| Max water temperature (°C) | 105 |
| Outlet water temperature (°C) | 93 |
| Fan power (kW) | 2.5 |
| Fan air flow w/o restriction (m3/s) | 3.7 |
| Available restriction on air flow (mm EC) | 20 |
| Type of coolant | Glycol-Ethylene |
| Thermostat (°C) | 82-94 |

| Emissions | |
|---|---|
| Emission PM (g/kW.h) | N/A |
| Emission CO (g/kW.h) | N/A |
| Emission HCNOx (g/kWh) | N/A |
| Emission HC (g/kW.h) | N/A |

| Exhaust system | |
|---|---|
| Exhaust gas flow (L/s) | 283 |
| Exhaust gas temperature (°C) | 545 |
| Max. exhaust back pressure (mm EC) | 750 |

| Fuel system | |
|---|---|
| Consumption @ 110% load (L/h) | 25.5 |
| Consumption @ 100% load (L/h) | 23.5 |
| Consumption @ 75% load (L/h) | 16.5 |
| Consumption @ 50% load (L/h) | 11.5 |
| Maximum fuel pump flow (L/h) | 108 |

| Oil | |
|---|---|
| Oil capacity (L) | 13.5 |
| Min. oil pressure (bar) | 1 |
| Max. oil pressure (bar) | 5 |
| Oil consumption 100% load (L/h) | 0.024 |
| Carter oil capacity (L) | 12.5 |

| Energy Balance Sheet | |
|---|---|
| Heat rejection to exhaust (kW) | 64 |
| Radiated heat to ambiant (kW) | 10.5 |
| Haet rejection to coolant (kW) | 36 |

| Air intake | |
|---|---|
| Max. intake restriction (mm EC) | 625 |
| Intake air flow (L/s) | 106 |

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## Alternator specifications

| General Data | |
|---|---|
| Alternator | N/A<br>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 | AREP |
| Insulation class | H |
| AVR | R438 |
| Harmonic factor, no load TGH/THC (%) | <2 |
| Wave form : NEMA=TIF-(TGH/THC) | <50 |
| Wave form : CEI=FHT-(TGH/THC) | <2 |
| Number of bearing | 1 |
| Coupling | Direct |
| Voltage regulation at established rating (%) | +/- 0.5% |
| Recovery time (Delta U = 20% transcient) (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 (m3/s) | 0.37 |
| 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 transcient reactance saturated (X''d) (%) | 14.1 |
| Short circuit transcient time constant (T''d) (ms) | 100 |
| Direct axis subtranscient reactance saturated (X'''d) (%) | 8.5 |
| Subtranscient time constant (T'''d) (ms) | 10 |
| Quadra axis subtranscient 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) | 1 |
| Full load excitation current (ic) (A) | 4.2 |
| Full load excitation voltage (uc) (V) | 19 |
| Recovery time (Delta U = 20% transcient) (ms) | 500 ms |
| Engine start (Delta U = 20% perm. or 50% trans.) (kVA) | 227.9 |
| Transcient dip (4/4 load) - PF : 0,8 AR (%) | 14.3 |
| No load losses (W) | 1800 |
| Heat rejection (W) | 8500 |

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## Control Panel

## DEC1000, comprehensive and simple


The DEC1000 is a versatile control unit allowing operation in manual or automatic mode. Equipped with an LCD screen, the user-friendly DEC1000 offers high-quality basic functions to guarantee simple, reliable operation of your generating set.

Offers the following functions:

Standard electrical measurements: voltmeter, frequency meter, ammeter.

Engine parameters: working hours counter, engine speed, battery voltage, fuel level, oil pressure, coolant temperature.

Alarms and faults: oil pressure, coolant temperature, failure to start, overspeed (> 60 kVA), charging alternator fault, low fuel level, emergency stop.

Automatic control: automatic start.

For more information, please refer to the sales documentation.

## DEC4000, ergonomic and user-friendly


The highly versatile DEC4000 control unit is complex yet accessible, thanks to the particular attention paid to optimising its ergonomics and ease of use. With its large display screen, buttons and scroll wheel, it places the accent on simplicity and communication.

It offers the following functions:

Electrical measurements: voltmeter, frequency meter, ammeter.

Engine parameters: working hours counter, oil pressure, coolant temperature, fuel level, engine speed, battery voltage.

Alarms and faults: oil pressure, coolant temperature, failure to start, overspeed, alternator min./max., battery voltage min./max., emergency stop, fuel level.

Ergonomics: wheel for navigating around the various menus.

Communication: remote control and operation software, USB connections, PC connection.

Automatic control: automatic start.

For more information on the product and its options, please refer to the sales documentation.