



J110K

DIESEL GENSET

| MODEL                 | J110K           |
|-----------------------|-----------------|
| Stand-by Power @ 50Hz | 88kW / 110 kVA  |
| Prime Power @ 50Hz    | 80 kW / 100 kVA |

Standard Features

General features :

- Engine (JOHN DEERE , 4045HF120 )
- Charge alternator 12 V , Governor:Meca
- Alternator (LEROY SOMER , LSA442VS45 )
- Single bearing alternator IP 23 , insulation class H /H
- Radiator 50°C [122°F]°C max. T° air inlet with coolant cap
- Skid and vibration isolators
- Dry type air filter
- Main line circuit breaker
- Microprocessor control panel
- 12 V battery, rack and cable
- Industrial silencer (loose)
- User manual



Generator Ratings

| Voltage | HZ | Phase | P.F | Standby Amps | Standby Ratings kW/kVA | Prime Ratings kW/kVA |
|---------|----|-------|-----|--------------|------------------------|----------------------|
| 415/240 | 50 | 3     | 0.8 | 153          | 88 / 110               | 80 / 100             |
| 400/230 | 50 | 3     | 0.8 | 159          | 88 / 110               | 80 / 100             |
| 380/220 | 50 | 3     | 0.8 | 167          | 88 / 110               | 80 / 100             |
| 240/120 | 50 | 3     | 0.8 | 265          | 88 / 110               | 80 / 100             |
| 230/115 | 50 | 3     | 0.8 | 276          | 88 / 110               | 80 / 100             |
| 220/110 | 50 | 3     | 0.8 | 289          | 88 / 110               | 80 / 100             |
| 220/127 | 50 | 3     | 0.8 | 289          | 88 / 110               | 80 / 100             |
| 200/115 | 50 | 3     | 0.8 | 318          | 88 / 110               | 80 / 100             |

**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.

Conditions of sale

- SDMO provides a full line of products with high quality recognized engines and alternators.
- Service and parts are available from SDMO distributors as a single source of responsibility.
- Each and every units is factory tested. All generator sets are also prototype tested.
- Warranty according to our standard conditions. Five years extended also available



## ENGINE DATA

|                                    |  |
|------------------------------------|--|
| Manufacturer / Model               | JOHN DEERE 4045HF120 , 4-cycle, Turbo , Air/Air DC |
| Cylinder Arrangement               | 4 X L  |
| Displacement                       | 4.48L [273.4C.I.]                                  |
| Bore and Stroke                    | 106mm [4.2in.] X 127mm [5.0in.]                    |
| Compression ratio                  | 17 : 1   |
| Rated RPM                          | 1500 Rpm   |
| Piston Speed                       | 6.35m/s [20.8ft./s]                                |
| Max. stand by Power at rated RPM   | 97kW [130BHP]                                      |
| Frequency regulation, steady state | +/-2. 5%   |
| BMEP                               | 16.2bar [235psi]                                   |
| Governor : type                    | Meca   |

### Exhaust System

|                     |                     |
|---------------------|---------------------|
| Exhaust gas flow    | 283L/s [600cfm]     |
| Exhaust temperature | 545°C [1013°F]      |
| Max back pressure   | 750mm CE [30in. WG] |

### Fuel System

|                           |                     |
|---------------------------|---------------------|
| 110% (Stand By power )    | 25.5L/h [6.7gal/hr] |
| 100% (of the Prime Power) | 23.5L/h [6.2gal/hr] |
| 75% (of the Prime Power)  | 16.5L/h [4.4gal/hr] |
| 50% (of the Prime Power)  | 11.5L/h [3.0gal/hr] |
| Total fuel flow           | 108L/h [28.5gal/hr] |

### Oil System

|                              |                      |
|------------------------------|----------------------|
| Total oil capacity w/filters | 13.5L [3.6gal]       |
| Oil Pressure low idle        | 1bar [14.5psi]       |
| Oil Pressure rated RPM       | 5bar [72.5psi]       |
| Oil consumption 100% load    | 0.024L/h [0.0gal/hr] |
| Oil capacity carter          | 12.5L [3.3gal]       |

### Thermal balance 100% load

|                           |                    |
|---------------------------|--------------------|
| Heat rejection to exhaust | 64kW [3639Btu/mn]  |
| Radiated heat to ambient  | 10.5kW [597Btu/mn] |
| Heat rejection to coolant | 36kW [2047Btu/mn]  |

### Air intake

|                         |                     |
|-------------------------|---------------------|
| Max. intake restriction | 625mm CE [25in. WG] |
| Engine air flow         | 106L/s [225cfm]     |

### Coolant System

|                                   |                     |
|-----------------------------------|---------------------|
| Radiator & engine capacity        | 20.2L [5.3gal]      |
| Max water temperature             | 105°C [221°F]       |
| Outlet water temperature          | 93°C [199°F]        |
| Fan power                         | 2.5 kW              |
| Fan air flow                      | 3.7m3/s [7841cfm]   |
| Available restriction on air flow | 20mm CE [0.8in. WG] |
| Type of coolant                   | Gencool             |
| Thermostat                        | 82-94 °C            |

### Emissions

|     |             |
|-----|-------------|
| HC  | 26 mg/Nm3   |
| CO  | 310 mg/Nm3  |
| Nox | 2900 mg/Nm3 |
| PM  | 100 mg/Nm3  |



## ALTERNATOR SPECIFICATIONS

### GENERAL DATA

- Compliance with NEMA MG21, UTE NF C51.111, VDE 0530, BS 4999, CSA standards.
- Vacuum-impregnated windings with epoxy varnish.
- IP21 drip proof.

### ALTERNATOR DATA

|   |                        |
|---|------------------------|
| Manufacturer / Type                                     | LEROY SOMER LSA442VS45 |
| Number of phase   | 3                      |
| Power factor (Cos Phi)                                  | 0.8                    |
| Altitude  | < 1000 m               |
| Overspeed   | 2250 rpm               |
| Pole : number   | 4                      |
| Exciter type  | Shunt                  |
| Insulation : class, temperature rise                    | H / H                  |
| Voltage regulator                                       | R230                   |
| Sustained short circuit current                         | -                      |
| Total harmonics (TGH/THC)                               | < 4%                   |
| Wave form : NEMA = TIF – TGH/THC                        | < 50                   |
| Wave form : CEI = FHT – TGH/THC                         | < 2%                   |
| Bearing : number  | 1                      |
| Coupling  | Direct                 |
| Voltage regulation 0 to 100% load                       | +/- 1%                 |
| Recovery time (20% Volt dip) ms                         | 500 ms                 |
| SkVA with 90 % of nominal sustained voltage (at 0.4 PF) | N/A                    |

### OTHER ALTERNATOR DATA

|   |                                   |
|---|-----------------------------------|
| Continuous nominal rating @ 40°C                    | 123 kVA                           |
| Standby rating @ 27°C                               | 144 kVA                           |
| Efficiencies @ 4/4 load                             | 91 %                              |
| Air flow  | 0.44m <sup>3</sup> /s [932.30cfm] |
| Short circuit ratio;50 (Kcc)                        | 0.33                              |
| Direct axis synchro reactance unsaturated (Xd)      | 377 %                             |
| Quadra axis synchro reactance unsaturated (Xq)      | 226 %                             |
| Open circuit time constant;50 (T'do)                | 2555 ms                           |
| Direct axis transient reactance saturated (X'd)     | 14.7 %                            |
| Short circuit transient time constant (T'd)         | 100 ms                            |
| Direct axis subtransient reactance saturated (X''d) | 8.8 %                             |
| Subtransient time constant (T''d)                   | 10 ms                             |
| Quadra axis subtransient reactance saturated (X''q) | 10.8 %                            |
| Zero sequence reactance unsaturated (Xo)            | 1 %                               |
| Negative sequence reactance saturated (X2)          | 9.9 %                             |
| Armature time constant (Ta)                         | 15 ms                             |
| No load excitation current (io)                     | 0.5 A                             |
| Full load excitation current (ic)                   | 2.1 A                             |
| Full load excitation voltage (uc)                   | 39 V                              |
| Recovery time (Delta U = 20% transitoire)           | 500 ms                            |
| Motor start (Delta = 20% perm. Or 50% trans.)       | 330 kVA                           |
| Transient dip (4/4 charge) – PF : 1.8 AR            | 17.6 %                            |
| No load losses                                      | 2.72 kW                           |
| Heat rejection                                      | 10 kW                             |

Control Panels

**NEXYS**



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, Air preheating

**TELYS**



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

## Options

### Engine and Radiator

- Heat shield protection
- Oil drain extension
- Heavy duty air filter
- Lube oil drain pump
- Radiator core guard
- Battery charger
- Block heater

### Alternator

- Anti condensation heater
- Enforced impregnation
- Oversized alternator

### Control panel

- NFPA 110 level 1
- Paralleling system
- Remote annunciator
- Oil temperature shutdown

### Exhaust

- Residential silencer
- Critical silencer
- Flexible exhaust conn.

### Literature

- Parts
- Maintenance

### Fuel

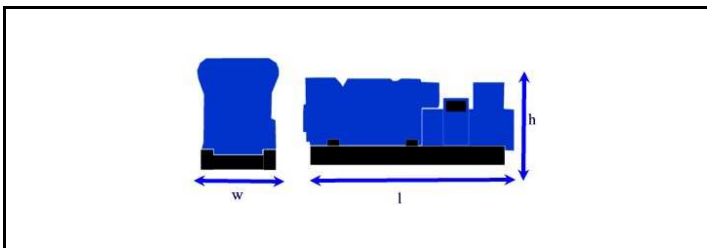
- Day tank
- Subbase fuel tanks UL
- Water separator fuel filter

### Enclosure

- M129
- Silent 67 db @ 7m [23 Ft] (stby)

## Weight and Dimensions

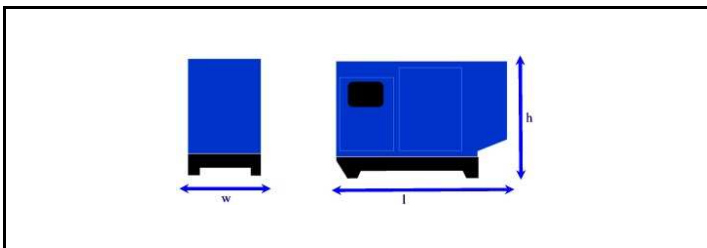
### Open Model Excluding option



Overall size l x w x h :  
1950mm [77in] x 1084mm [43in] x 1330mm [52in]

Weight :  
1240kg [2733lbs] Net 1440kg [3174lbs] Brut

### With Optional Enclosure



Overall size l x w x h :  
2554mm [101in] x 1170mm [46in] x 1680mm [66in]

Weight :  
1640kg [3615lbs] Net 1840kg [4055lbs] Brut

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