

# R110C2

Engine JOHN DEERE , 4045HFS73 Stage 2  
Alternator LEROY SOMER , LSA442VS45

## STANDARD FEATURES

- Analog engine
- Simplified connection terminal block
- Four-pole breaker
- Central lifting ring
- Rental specific soundproofed canopy
- Diesel low level
- AREP Leroy-Somer Alternator
- Easy radiator access
- Rain cap



| Voltage | Power ESP<br>kWe/kVA | Power PRP<br>kWe/kVA | Standby Amps |
|---------|----------------------|----------------------|--------------|
| 400/230 | 88 / 110             | 80 / 100             | 159          |



### 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 25 °C Air Intlet Temp, 1000 m A.S.L. 60 % relative humidity. All engine performance data based on the above mentioned maximum continuous ratings.

| Type  |         | dB(A)@1m | dB(A)@7m | Dimensions   | Weight                                       | Tank  |
|---|---------|----------|----------|--|--|-------|
|  | M129-DW | 77.5     | 67.5     | Long: 2602mm [102in]<br>Wide: 1170mm [46in]<br>Height: 1900mm [75in] | 2049kg [lbs]<br>Net<br>2554kg [lbs]<br>Gross | 505 L |
|  | M129    | 77.5     | 67.5     | Long: 2554mm [101in]<br>Wide: 1170mm [46in]<br>Height: 1680mm [66in] | 1765kg [lbs]<br>Net<br>1955kg [lbs]<br>Gross | 190 L |

### Base Rental Power + options suivantes = Full Rental Power

|                                     |   |
|-------------------------------------|---|
| Double wall and great autonomy tank | Air inlet manifold preheating             |
| Hire type terminals box             | Water separator pre-filter                |
| Voltage trimmer                     | Fixed earth leakage protection with spike |
| Battery cut-out                     | Lub oil drain pump                        |



## ENGINE SPECIFICATIONS

|                      |                                    |   |
|----------------------|------------------------------------|---|
| STANDARD<br>FEATURES | Manufacturer / Model               | JOHN DEERE 4045HFS73 , 4-strokes,<br>Turbo , Air/Water SC 4 X |
|                      | Cylinder Arrangement               | L   |
|                      | Displacement                       | 4.5L [274.6C.I.]  |
|                      | Bore and Stroke                    | 127mm [5.0in.] X 106mm [4.2in.]                               |
|                      | Compression ratio                  | 17 : 1  |
|                      | Rated RPM                          | 1500 Rpm  |
|                      | Piston Speed                       | 6.35m/s [20.8ft./s]   |
|                      | Max. stand by Power at rated RPM   | 103kW [138BHP]  |
|                      | Frequency regulation, steady state | +/- 0.5%  |
|                      | BMEP                               | N/A   |
| Governor : type      | ELEC                               |   |
| EXHAUST<br>SYSTEM    | Exhaust gas flow                   | N/A   |
|                      | Exhaust temperature                | N/A   |
|                      | Max back pressure                  | 750mm CE [30in. WG]   |
| FUEL SYSTEM          | 110% (Stand By power )             | 26.54L/h [7.0gal/hr]  |
|                      | 100% (of the Prime Power)          | 23.78L/h [6.3gal/hr]  |
|                      | 75% (of the Prime Power)           | 18.00L/h [4.8gal/hr]  |
|                      | 50% (of the Prime Power)           | 12.39L/h [3.3gal/hr]  |
|                      | Max. fuel pump flow                | N/A   |
| OIL SYSTEM           | Total oil capacity w/filters       | 33L [8.7gal]  |
|                      | Oil Pressure low idle              | 1.38bar [20.0psi]   |
|                      | Oil Pressure rated RPM             | 2.75bar [39.8psi]   |
|                      | Oil consumption 100% load          | 0.06L/h [0.0gal/hr]   |
|                      | Oil capacity carter                | 32L [8.5gal]  |
| THERMAL<br>BALANCE   | Heat rejection to exhaust          | 77.88kW [4428Btu/mn]  |
|                      | Radiated heat to ambient           | 12.56kW [714Btu/mn]   |
|                      | Heat rejection to coolant          | N/A   |
| AIR INTAKE           | Max. intake restriction            | 300mm CE [12in. WG]   |
|                      | Engine air flow                    | 125.00L/s [265cfm]  |
| COOLANT<br>SYSTEM    | Radiator & engine capacity         | 11.9L [3.144gal]  |
|                      | Max water temperature              | N/A   |
|                      | Outlet water temperature           | N/A   |
|                      | Fan power                          | 5.67 kW   |
|                      | Fan air flow w/o restriction       | N/A   |
|                      | Available restriction on air flow  | 20mm CE [0.8in. WG]   |
|                      | Type of coolant                    | Gencool   |
|                      | Thermostat                         | 82-94 °C  |
| GAS SYSTEM           | HC                                 | 0.06 g/KW.h   |
|                      | CO                                 | 0.72 g/KW.h   |
|                      | Nox                                | 5.47 g/KW.h   |
|                      | PM                                 | 0.14 g/KW.h   |



## ALTERNATOR SPECIFICATIONS

|  |   |                        |
|--|---|------------------------|
| GENERAL<br><br>DATAS                     | 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  | AREP                   |
|  | Insulation : class, temperature rise                  | H / H                  |
|  | Voltage regulator                                     | R438                   |
|  | Sustained short circuit current                       | 2.1 AC                 |
|  | Total harmonics (TGH/THC)                             | < 2%                   |
|  | 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                     | +/- 0.5%               |
|  | Recovery time (20% Volt dip) ms                       | 500 ms                 |
|  | SkVA with 90% of nominal sustained voltage (at 0.4PF) | skva                   |
| OTHER<br><br>DATAS                       | Continuous nominal rating @ 40°C                      | 105 kVA                |
|  | Standby rating @ 27°C                                 | 116 kVA                |
|  | Efficiencies @ 4/4 load                               | 90.7 %                 |
|  | Air flow  | 0.37m3/s [783.98cfm]   |
|  | Short circuit ratio;50 (Kcc)                          | 0.35                   |
|  | Direct axis synchro reactance unsaturated (Xd)        | 362 %                  |
|  | Quadra axis synchro reactance unsaturated (Xq)        | 217 %                  |
|  | Open circuit time constant;50 (T'do)                  | 2555 ms                |
|  | Direct axis transient reactance saturated (X'd)       | 14.1 %                 |
|  | Short circuit transient time constant (T'd)           | 100 ms                 |
|  | Direct axis subtransient reactance saturated (X''d)   | 8.5 %                  |
|  | Subtransient time constant (T''d)                     | 10 ms                  |
|  | 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)                           | 15 ms                  |
|  | No load excitation current (io)                       | 0.5 A                  |
|  | Full load excitation current (ic)                     | ic                     |
|  | Full load excitation voltage (uc)                     | 38 V                   |
|  | Recovery time (Delta U = 20% transitoire)             | 500 ms                 |
|  | Motor start (Delta = 20% perm. Or 50% trans.)         | 227.9 kVA              |
| Transient dip (4/4 charge) – PF : 1.8 AR | 14.3 %  |                        |
| No load losses                           | 1.80kW [1.80Kw]                                       |                        |
| Heat rejection                           | 8.5 kW  |                        |

## CONTROL PANEL

### Standard



### 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

### Option



### 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