



#### DESCRIPTIVE

- ➔ Stage 3a engine
- ➔ 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
- ➔ Adjustable earth fault protection and earthing rod
- ➔ Inlet air preheating
- ➔ Battery isolating switch
- ➔ Oil drainage pump
- ➔ Heavy duty air filter with interchangeable cartridge
- ➔ Primary filter
- ➔ Heat hand protections (EC standard)
- ➔ Access door to the radiator
- ➔ Electronic governor with speed adjustment



#### 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.

## R90C3 (CE)

|                 |             |
|-----------------|-------------|
| Engine type     | 4045HFS86   |
| Alternator type | LSA 43.2 L8 |
| Canopy Type     | M3129 DW    |

#### GENERAL CHARACTERISTICS

|                        |         |
|------------------------|---------|
| Frequency (Hz)         | 50      |
| Voltage (V)            | 400/230 |
| Max power ESP (kVA)    | 90      |
| Max power ESP (kWe)    | 72      |
| Max power PRP (kVA)    | 81.80   |
| Max power PRP (kWe)    | 65.50   |
| Intensity (A)          | 130     |
| Standard Control Panel | NEXYS   |

#### LARGE AUTONOMY DIMENSIONS

|                            |       |
|----------------------------|-------|
| Length (mm).               | 2860  |
| Width (mm).                | 1191  |
| Height (mm).               | 2000  |
| Dry weight (kg).           | 2100  |
| Tank capacity (L).         | 527   |
| Autonomy @ 75% of load (h) | 34.70 |
| Autonomy @ 50% of load (h) | 46.60 |

#### SOUND LEVELS

|  |           |
|--|-----------|
| Acoustic pressure level @1m in dB(A) ( ) | 75 (0.44) |
| Acoustic pressure level @7m in dB(A) ( ) | 64 (0.44) |
| Sound power level guaranteed (Lwa)       | 93        |



# R90C3 (CE)

## ENGINE SPECIFICATIONS

### GENERAL ENGINE DATAS

|  |            |
|--|------------|
| Description                              | 4045HFS86  |
| Engine model                             | JOHN DEERE |
| Cylinder arrangement                     | L          |
| Number of cylinders                      | 4          |
| Displacement (C.I.)                      | 4.48       |
| Bore (mm) x Stroke (mm)                  | 106 x 127  |
| Compression ratio                        | 19 : 1     |
| Speed (RPM)                              | 1500       |
| Pistons speed (m/s)                      | 6.35       |
| Maximum stand-by power at rated RPM (kW) | 83         |
| Frequency regulation (%)                 | +/- 0.5%   |
| BMEP (bar)                               | 13.46      |
| Governor type                            | Electronic |

### COOLING SYSTEM

|   |                 |
|---|-----------------|
| Radiator & Engine capacity (L)            | 0               |
| Max water temperature (°C)                | 110             |
| Outlet water temperature (°C)             | N/A             |
| Fan power (kW)                            | N/A             |
| Fan air flow w/o restriction (m3/s)       | N/A             |
| Available restriction on air flow (mm EC) | N/A             |
| Type of coolant                           | Glycol-Ethylene |

### EMISSIONS

|                        |      |
|------------------------|------|
| Emission HC (g/kW.h)   | 0.15 |
| Emission HCNOx (g/kWh) | 3.54 |
| Emission CO (g/kW.h)   | 1.29 |
| Emission PM (g/kW.h)   | 0.17 |

### EXHAUST

|                                    |     |
|------------------------------------|-----|
| Exhaust gas flow (L/s)             | 253 |
| Exhaust gas temperature (°C)       | 507 |
| Max. exhaust back pressure (mm EC) | 765 |

### FUEL

|                               |       |
|-------------------------------|-------|
| Consumption @ 110% load (L/h) | 19.80 |
| Consumption @ 100% load (L/h) | 19.90 |
| Consumption @ 75% load (L/h)  | 14    |
| Consumption @ 50% load (L/h)  | 10.40 |
| Maximum fuel pump flow (L/h)  | N/A   |

### OIL

|                                 |       |
|---------------------------------|-------|
| Oil capacity (L)                | 14.70 |
| Min. oil pressure (bar)         | 1.05  |
| Max. oil pressure (bar)         | 4     |
| Oil consumption 100% load (L/h) | 0.05  |
| Carter oil capacity (L)         | 0     |

### HEAT BALANCE

|                                |    |
|--------------------------------|----|
| Radiated heat to ambient (kW)  | 8  |
| Heat rejection to coolant (kW) | 35 |

### AIR INTAKE

|                                 |     |
|---------------------------------|-----|
| Max. intake restriction (mm EC) | 637 |
| Intake air flow (L/s)           | 102 |

### GENERAL DATAS

|  |              |
|--|--------------|
| Description                                  | LSA 43.2 L8  |
| Alternator brand                             | LEROY SOMER  |
| Number of phase                              | 3            |
| Altitude (m)                                 | 0 à 1000     |
| Overspeed (rpm)                              | 2250         |
| Number of pole                               | 4            |
| Excitation system                            | AREP         |
| Insulation class                             | H            |
| AVR  | R438         |
| Sustained short circuit current              | 3 IN for 10S |
| Harmonic factor, no load TGH/THC (%)         | <2           |
| Harmonic factor, on load TGH/THC (%)         | <2C          |
| Wave form : CEI=FHT-(TGH/THC)                | <2           |
| Wave form : NEMA=TIF-(TGH/THC)               | <50          |
| Number of bearing                            | 1            |
| Coupling                                     | Direct       |
| Voltage regulation at established rating (%) | +/- 0.5%     |
| Air flow (m3/s)                              | 0.27         |

### OTHER DATAS

|  |        |
|--|--------|
| No load excitation current (io) (A)                    | 0.80   |
| Full load excitation current (ic) (A)                  | 3.20   |
| Full load excitation voltage (uc) (V)                  | 14     |
| Recovery time (Delta U = 20% transient) (ms)           | 500 ms |
| Engine start (Delta U = 20% perm. or 50% trans.) (kVA) | 240    |
| Transient dip (4/4 load) - PF : 0,8 AR (%)             | 11.60  |
| No load losses (W)                                     | 1410   |
| Heat rejection (W)                                     | 6640   |

### REACTANCES (R) - TIME CONSTANT(CT)

|   |      |
|---|------|
| Short circuit ratio (Kcc)                               | 0.41 |
| Direct axis synchro reactance unsaturated (Xd) (%)      | 284  |
| Quadra axis synchro reactance unsaturated (Xq) (%)      | 170  |
| Open circuit time constant (T"do) (ms)                  | 1431 |
| Direct axis transient reactance saturated (X"d) (%)     | 9.90 |
| Short circuit transient time constant (T"d) (ms)        | 50   |
| Direct axis subtransient reactance saturated (X""d) (%) | 5    |
| Subtransient time constant (T""d) (ms)                  | 5    |
| Quadra axis subtransient reactance saturated (X""q) (%) | 6.30 |
| Zero sequence reactance unsaturated (Xo) (%)            | 0.10 |
| Negative sequence reactance saturated (X2) (%)          | 5.70 |
| Armature time constant (Ta) (ms)                        | 8    |

### POWERS

|                                      |       |
|--------------------------------------|-------|
| Power factor (Cos Phi)               | N/A   |
| Continuous Nominal Rating 40°C (kVA) | 80    |
| Standby Nominal Rating 40°C (kVA)    | 84    |
| Standby Rating 27°C (kVA)            | 88    |
| Efficiencies 4/4 load (%)            | 90.50 |

NEXYS, comprehensive and simple



The NEXYS is a versatile control unit allowing operation in manual or automatic mode. Equipped with an LCD screen, the user-friendly NEXYS 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.

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

For more information, please refer to the sales documentation.

TELYS, ergonomic and user-friendly



The highly versatile TELYS 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.

The TELYS 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.