



## INDUSTRIAL RANGE

## GENSET KW IVECO / GRUPEL

### 1. MAIN FEATURES

|                                                                                   |                  |                                                                                   |                   |
|-----------------------------------------------------------------------------------|------------------|-----------------------------------------------------------------------------------|-------------------|
|  | Three-phase      |  | Oil               |
|  | Iveco / N45 TM2A |  | Grupel / 274GB100 |
|  | Grupel / G545    |  | 50 Hz             |
|  | 1500 r.p.m.      |  | 400 V             |
|  | 0.8              |  | 160 A             |
| Standby Power(ESP)                                                                |                  | 110 kVA                                                                           | 88 kW             |
| Prime Power (PRP)                                                                 |                  | 100 kVA                                                                           | 80 kW             |
| Continuous Power(COP)                                                             |                  | -                                                                                 | -                 |

#### SOUNDPROOF

|                              |              |
|------------------------------|--------------|
| Length (L)                   | 2430 mm      |
| Height (H)                   | 1580 mm      |
| Width (W)                    | 1015 mm      |
| Weight                       | 1600.3 kg    |
| Daily tank                   | 200 L        |
| Acoustic pressure level @ 1m | 73 ± 3 dB(A) |
| Acoustic pressure level @ 7m | 60 ± 3 dB(A) |



### 2. ROOM INSTALLATION

| EXHAUST SYSTEM                    | 50 Hz |     |      |
|-----------------------------------|-------|-----|------|
|                                   | COP   | PRP | ESP  |
| Exhaust gas temperature (°C)      | -     | 535 | -    |
| Exhaust gas flow (m³/min)         | -     | -   | 533  |
| Evacuated heat (kW)               | -     | 76  | 83.4 |
| Maximum back pressure (kPa)       | 5     |     |      |
| Exhaust silencer attenuation (dB) | 18-25 |     |      |
| Output diameter (mm)              | 90    |     |      |

| VENTILATION SYSTEMS                  | 50 Hz |      |     |
|--------------------------------------|-------|------|-----|
|                                      | COP   | PRP  | ESP |
| Combustion air flow (m³/min)         | -     | 7.12 | -   |
| Cooling airflow (m³/min)             | 132   |      |     |
| Maximum load losses (Pa)             | 147   |      |     |
| Alternator cooling air flow (m³/min) | 31.44 |      |     |

| RADIATION       | 50 Hz |      |      |
|-----------------|-------|------|------|
|                 | COP   | PRP  | ESP  |
| Engine (kW)     | -     | 5.7  | 6.3  |
| Alternator (kW) | 7.68  | 7.68 | 8.45 |



### 3. ENGINE SPECIFICATIONS

| GENERAL SPECIFICATIONS       |                                    | 50Hz |
|------------------------------|------------------------------------|------|
| Model                        | N45 TM2A                           |      |
| Emissions (UE/USEPA)         | Not applicable / Not applicable    |      |
| Performance grade            | G2                                 |      |
| Operating method             | 4 stroke                           |      |
| Fuel type                    | Oil                                |      |
| Refrigeration system         | Closed water circuit / antifreeze  |      |
| Aspiration system            | Turbocharged                       |      |
| Injection system             | Direct                             |      |
| No. and Cylinder arrangement | 4 In-line                          |      |
| Displacement (L)             | 4.5                                |      |
| Cylinder bore (mm)           | 104                                |      |
| Cylinder stroke (mm)         | 132                                |      |
| Compression ratio            | 17,5:1                             |      |
| Regulation                   | Mechanical / Electronic (optional) |      |
| Rotation speed (r.p.m.)      | 1500                               |      |
| Piston speed (m/s)           | 6.6                                |      |
| Gross power COP (kWm)        | -                                  |      |
| Gross power PRP (kWm)        | 90.4                               |      |
| Gross power ESP (kWm)        | 99.8                               |      |
| Fan Power (kWm)              | - / 1 / 1                          |      |
| Net Power COP (kWm)          | 0                                  |      |
| Net Power PRP (kWm)          | 88.6                               |      |
| Net Power ESP (kWm)          | 98                                 |      |
| BMEP COP (kPa)               | -                                  |      |
| BMEP PRP (kPa)               | 1583.8                             |      |
| BMEP ESP (kPa)               | 1742                               |      |



| CONSUMPTION      |                            |  | 50 Hz |
|------------------|----------------------------|--|-------|
| Fuel consumption | l/h                        |  | g/kWh |
| ESP              | 24.4                       |  | 209.2 |
| PRP              | 22                         |  | 207.7 |
| COP              | -                          |  | -     |
| 75%              | 16.2                       |  | 203.5 |
| 50%              | 11                         |  | 206.5 |
| Oil consumption  | < 0.1% of fuel consumption |  |       |

| REFERENCE CONDITIONS       |     |
|----------------------------|-----|
| Temperature (°C)           | 25  |
| Atmospheric pressure (kPa) | 100 |

| CAPACITY (°C) |      |
|---------------|------|
| Coolant (L)   | 18.5 |
| Oil (L)       | 12.8 |

| STARTING SYSTEM |     |
|-----------------|-----|
| Voltage (V)     | 12  |
| Power (kW)      | 3   |
| Battery (Ah)    | 100 |

### 4. ALTERNATOR SPECIFICATIONS

| GENERAL SPECIFICATIONS        |                                           |
|-------------------------------|-------------------------------------------|
| Model                         | 274GB100                                  |
| Phases No.                    | Three-phase                               |
| Protection                    | IP23                                      |
| Insulation                    | H                                         |
| Temperature rise              | H                                         |
| R.F.I. telephone interference | THF < 2%                                  |
| R.F.I. Suppression            | BS EN 61000-6-2 /6-4,VDE 0875G, VDE 0875N |
| Coupling                      | Flexible disks                            |
| Support                       | Single bearing                            |



|                                                |                    |
|------------------------------------------------|--------------------|
| Wave form distortion with no load              | < 1,5%             |
| Wave form distortion with balanced linear load | < 5%               |
| Winding Leads                                  | 12                 |
| Excitation (standard/optional)                 | Autoexcitado / PMG |
| AVR Model (standard/optional)                  | SX460 / MX341      |
| Voltage Regulation (standard/optional)         | ± 1 % / ± 0,5 %    |
| Icc (standard/optional)                        | - / 3In:10s        |

| PF (cos Ø) | Phase       | Voltage (V) | Power<br>PRP/ESP (kVA) | Efficiency<br>PRP/ESP (%) | Xd   | X'd  | X''d |
|------------|-------------|-------------|------------------------|---------------------------|------|------|------|
| 0.8        | Three-phase | 400         | 100 / 110              | 90.4 / 90.4               | 2.21 | 0.18 | 0.13 |



## 5. CONTROL PANEL



| GENSET                       | GrupeL G545 |
|------------------------------|-------------|
| Voltage (F-F / F-N)          | ● / ●       |
| Current intensity            | ●           |
| Frequency                    | ●           |
| RMS Values                   | ●           |
| Generator phase sequence     | ●           |
| Generator earth current [a]  | ●           |
| No. of registers events      | 400         |
| Real time clock              | ●           |
| PIN Protection               | ●           |
| kWh, kVAR, kVAh, kVAh, cos Ø | ●           |
| Synchroscope [i]             | ○           |
| Nº of available outputs [b]  | 4           |
| Indication of alarms on LCD  | ●           |
| Engine run hours             | ●           |
| Total no. of LED indicators  | 15          |
| No. of LED alarms            | 4           |
| Sound signalling alarms      | -           |
| Scheduler                    | ●           |
| Fuel level                   | ●           |

| ELECTRICAL NETWORK                   | GrupeL G545 |
|--------------------------------------|-------------|
| Voltage (F-F / F-N)                  | ● / ●       |
| Current [a]                          | ○           |
| Frequency                            | ●           |
| kVA, kW, cos Ø [a]                   | ○           |
| Inversion control between main-group | ●           |

| PROTECTIONS AND ALARMS               | GrupeL G545 |
|--------------------------------------|-------------|
| High / low battery voltage           | A           |
| Failure in battery charge alternator | A           |
| Failure to stop                      | A/S         |
| Failure to start                     | A/S         |
| Low fuel level                       | A/S         |
| Overload                             | A/S         |
| Earth leakage                        | A/S         |
| Asymmetry between phases             | A/S         |
| Maintenance                          | A/S         |
| High / Low generator frequency       | A/S         |
| Engine overspeed                     | A/S         |
| Engine underspeed                    | A/S         |
| Generator overvoltage                | A/S         |
| Generator undervoltage               | A/S         |
| ECU Alert (if applicable)            | A/S         |
| Low oil pressure                     | A/S         |
| Low level of radiator water [f]      | A/S         |
| Engine high temperature              | A/S         |
| Fuel leakage/ theft                  | A           |



## 6. CONTROL PANEL

| ENGINE                              | GrupeL G545 |
|-------------------------------------|-------------|
| Engine speed                        | ●           |
| Low oil pressure protection         | ●           |
| Oil pressure reading [c]            | ○           |
| High temperature engine protection  | ●           |
| Engine temperature reading [c]      | ○           |
| Engine battery voltage              | ●           |
| Intensity of the engine battery [d] | ○           |
| Fuel Consumption [e]                | ●           |
| Low level of radiator water [f]     | ○           |
| Engine maintenance scheduled        | ●           |
| COMMUNICATION                       | GrupeL G545 |
| USB female type B (max. 6m)         | ●           |
| USB female type A [g]               | ○           |
| RS232 port (max. 15m)               | -           |
| RS485 port (max. 1,2Km)             | ●           |
| Ethernet port RJ45 [g]              | ○           |
| GSM + location via MLAT [h]         | ○           |
| ModBus RTU protocol                 | ●           |
| ModBus TCP protocol [g]             | ○           |
| SNMP protocol [g]                   | ○           |
| CAN port (max. 40m)                 | ●           |
| MSC port (max. 240m) [i]            | ○           |
| PLC functionality                   | ●           |

### Legenda

● Available

○ Optional

- Not available

A Warning Alarm

S Stop alarm

[a] Need additional CT

[b] No. of outputs available for standard configuration. The outputs do not include relays and additional terminal connections.

[c] If the information is not provided by the engine-ECU, you need an additional sensor

[d] Needs additional ammeter

[e] If information provided by the engine ECU

[f] Required additional sensor

[g] Requires G-ETH

[h] Requires G-GSM

[i] Requires G-Sync

| APPLICATIONS                                                                | GrupeL G545 |
|-----------------------------------------------------------------------------|-------------|
| Automatic or manual starting                                                | ●           |
| Remote start by NO dry contact                                              | ●           |
| Automatic by mains failure                                                  | ●           |
| Alternating with timesharing                                                | ●           |
| Multi-generators synchronization and load sharing (max. 48 generators) [i]  | ○           |
| Generator-Main in synchronism and load sharing (1 generator and 1 main) [i] | ○           |

| OPTIONAL EXPANSIONS                             | GrupeL G545 |
|-------------------------------------------------|-------------|
| G-08 (8 dig. inputs)                            | ○           |
| G-06 (8 relay outputs)                          | ○           |
| G-GSM (GSM and/or GPS by MLAT)                  | ○           |
| G-ETH (ethernet module)                         | ○           |
| G-ETH (ethernet module according SNMP protocol) | ○           |
| G545 (mirror controller, maximum distance 1km)  | ○           |
| G175 (convert QTC into QTA)                     | ○           |
| G545 (convert QTC into QTA)                     | ○           |

### STANDARDS

|                                                       |                                            |
|-------------------------------------------------------|--------------------------------------------|
| Working temperature                                   | -30 ≤ °C ≤ 70                              |
| Protection index (when assembled with sealing gasket) | IP65 - Quando montado com junta de vedação |
| Degree of humidity (during 48hr)                      | 93%, 40°C durante 48h                      |

Dimensions and guiding weights. Environmental reference conditions: 100kPa, 25 °C, 30% relative humidity and fuel temperature below 40 °C. Power ratings according to ISO 8528-1:2018.

Emergency power (ESP): Maximum power available to supply variable loads for a maximum period of 200h/year. The average load factor in 24h of operation must not exceed 70% of the ESP regime. It does not allow overload.

Prime power (PRP): Maximum power available to supply variable loads for an unlimited number of hours. The average load factor in 24 hours of operation must not exceed 70% of the PRP rating. Allows an overload of 10% for a maximum period of 1 hour every 12 hours of operation. Overloading may not exceed 25 hours/year.

Continuous power (COP): Maximum power available to supply constant loads for an unlimited number of hours per year, between the maintenance intervals and environmental conditions advertised by the manufacturer.

*These specifications are subject to change without notice.*

## DISTRIBUTOR



Parque Industrial do Soza, Parcela A, Lt. 5 - 3840-342 - Vagos - Portugal  
T: +351 234 790 070 F: (+351) 234 920 670 - geral@grupel.eu - www.grupel.eu