

# GOLDEN MAJD Co.



| Rating @ 0.8 PF      |                    | Prime rating        | Stand-by rating      |
|----------------------|--------------------|---------------------|----------------------|
| Voltage <sup>1</sup> | Freq. <sup>2</sup> | PT 250 <sup>3</sup> | PT 275S <sup>4</sup> |
| 400 V                | 50 Hz              | 250.0 KVA           | 274.9 KVA            |
| 480 V                | 60 Hz              | -                   | -                    |

The above ratings represent the generating set capability guaranteed within  $\pm 3\%$  at the reference conditions equivalent to those specified in ISO 8528/1, ISO 3046/1 and BS 5514/1

## NOTES

- 1 - The applicable voltage range is 380V to 415V for 50Hz applications.
- 2 - This generating set is of fixed speed of 1500rpm.
- 3 - PT250 is the prime power rating of the generating set, where a variable load and unlimited hours usage are applied on the generating set with an average load factor of 80% of the prime rating over each 24 hour period. Noting that a 10% overload is available for 1 hour in every 12 hours operation.
- 4 - PT275S is the standby power rating of the generating set, where a variable load limited to an annual usage up to 500 hours is applied, with 300 hours of which may be continuous running. Noting that no overload is permitted.

| Engine Technical Data     |                                     |          |
|---------------------------|-------------------------------------|----------|
| Model                     | Perkins 1306A-E87TAG6               |          |
| Cylinders                 | 6; vertical in-line                 |          |
| Aspiration                | Turbocharged, & A / A charge cooled |          |
| Combustion                | Direct injection                    |          |
| Cooling System            | Water cooled                        |          |
| Displacement              | 8.7 L                               |          |
| Oil consumption           | 0.1 % of fuel consumption           |          |
| Lube oil capacity         | 28.3 L                              |          |
| Coolant capacity          | 24.2 L                              |          |
| Governor                  | Electronic                          |          |
| Emissions regulations     | EU stage 2 & EPA tier 2             |          |
| Speed                     | 1500 rpm                            | 1800 rpm |
| Fuel Consumption PT250    | 55.0 L/H                            | -        |
| Fuel Consumption PT275S   | 59.9 L/H                            | -        |
| Radiator Cooling Air Flow | 439 m <sup>3</sup> /min             | -        |
| Max Exhaust Gas Flow      | 44.5 m <sup>3</sup> /min            | -        |

The above performance data are valid as per the following specs:

- Diesel Fuel is according to BS2869 Class A2 or equivalent.
- Lubricating oil is according to API CI 4 (15W/40).
- The coolant should be 50% antifreeze and 50% fresh water.

| Alternator Technical Data |                         |       |
|---------------------------|-------------------------|-------|
| Model                     | Leroy Somer LSA 46.2 L6 |       |
| Regulation                | $\pm 0.5\%$             |       |
| International protection  | IP23                    |       |
| Insulation class          | H                       |       |
| Terminals                 | 12                      |       |
| Frequency                 | 50 Hz                   | 60 Hz |
| Coolant Air Flow          | 0.43 m <sup>3</sup> /s  | -     |

| Shipping Data |        |         |         |
|---------------|--------|---------|---------|
| Length        | Width  | Height  | Weight  |
| 2850 mm       | 990 mm | 1710 mm | 2200 kg |

All information given in this leaflet is correct at the time of printing but it may be changed subsequently by the company



250 - 275S

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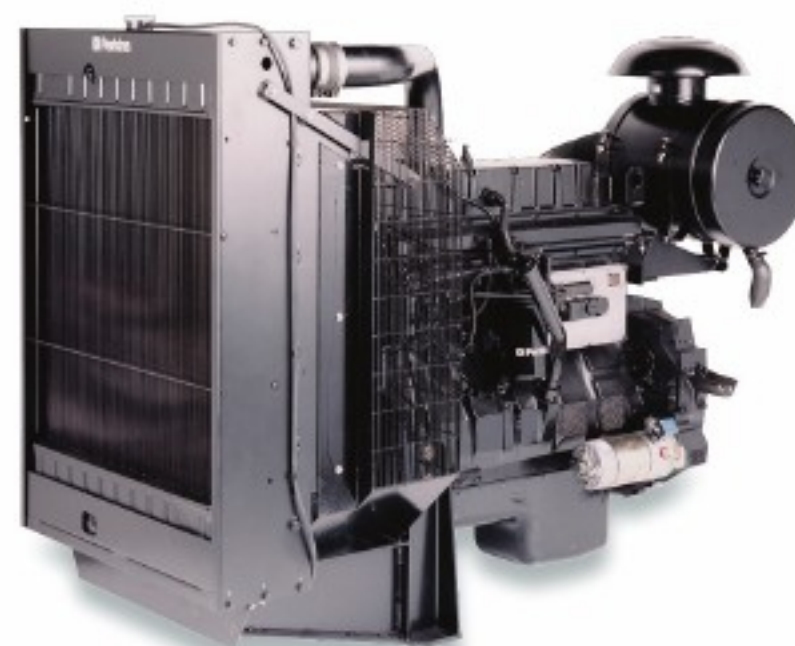


# 1300 Series 1306A-E87TAG6 Diesel Engine – Electropak

209-250 kWm Gross Power 1500 rev/min

The Perkins 1300 Series family of Electropak engines has become renowned throughout the power generation industry for the engines' superior performance and reliability.

The 1306C-E87TAG6 engine is a turbocharged and air-to-air charge cooled unit, featuring hydraulically-actuated electronically controlled unit injectors (HEUI) with 'full authority' electronic engine management providing reliable, quiet, economic operation supported by the quick starting, fast response and close control demanded by the electrical power generation market.



## High performance productive power

- Hydraulically actuated Electronically controlled Unit Injectors – high-pressure fuel injection gives consistent, reliable high performance.
- Constant electronic engine management and monitoring enable precise fuel metering and injection timing to ensure reliable low temperature starting, superb economy with performance and very close governing.

## Quiet, clean power

- A rigid structure minimises noise transmission and helically cut gears provide quiet power transfer to auxiliaries.
- Forced induction and electronic fuel injection control combine to reduce combustion noise while electronically optimised fuel/air mixing ensures complete combustion resulting in virtually smoke free operation with emissions capability matching current and future emissions legislation.

## Durable power

- A fully balanced induction-hardened steel crankshaft gives smooth performance with minimised bearing loads.
- Oil cooled pistons with keystone top and second rings give longer life while positive rotational valves and roller cam followers reduce wear on valve seats, tappets and cam lobes.

## Reliable power

- Cylinder head coolant is directed to valve bridges and injectors and lubricating oil is cooled in a high efficiency oil cooler, both features enhancing engine reliability.
- Electronic safety shutdown option protects the engine while event and fault warning codes protect operations.

## Easy maintenance

- Electronic diagnostics help to keep the engine at its productive best while enabling the operator to plan maintenance. Oil and filter changes at 450 hours reduce down time.
- All engines are supported by the Perkins worldwide network of distributors and dealers.

| Engine Speed<br>(rev/min) | Type of<br>Operation | Typical Generator<br>Output (Net) |     | Engine Power |     |     |     |
|---------------------------|----------------------|-----------------------------------|-----|--------------|-----|-----|-----|
|                           |                      |                                   |     | Gross        |     | Net |     |
|                           |                      | kVA                               | kWe | kWm          | bhp | kWm | bhp |
| 1500                      | Prime Power          | 250                               | 200 | 228          | 306 | 217 | 291 |
|                           | Standby (maximum)    | 275                               | 220 | 250          | 335 | 239 | 320 |

1500 rev/min switchable ratings are offered for stand-alone non-load sharing gen set applications.

The above ratings represent the engine performance capabilities to conditions specified in ISO 8528/1, ISO 3046/1:1988, BS5514/1, DIN 6271. Derating may be required for conditions outside these; consult Perkins Engines Company Limited.

Generator powers are typical and are based on an alternator efficiency of 92% and a power factor of 0.8. Performance tolerance is  $\pm 5\%$ . Fuel specification: BS 2869: Part 2 1998 Class A2 or ASTM D975 D2. Lubricating oil: 15W40 to ACEA E3 or API CG4.

### Rating Definitions

Prime Power: Variable load. Unlimited hours usage with an average load factor of 70% of the published prime power rating. A 10% overload is available for 1 hour in every 12 hour of operation.

Standby (maximum): Variable load. Limited to 500 hours annual usage up to 300 hours of which may be continuous running. No overload is permitted.

Photographs are for illustrative purposes only and may not reflect final specification.

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**Perkins®**

THE HEART OF EVERY GREAT MACHINE



# 1300 Series 1306A-E87TAG6 Diesel Engine – Electropak

209-250 kWm Gross Power1500 rev/min

## Standard Electropak specification

### Air inlet

- Mounted air filter and turbocharger

### Fuel system

- Hydraulically actuated electronically controlled unit fuel injectors with full authority electronic control
- Electronic governing to ISO 3046-4 with stand-alone isochronous or load-sharing capabilities
- Spin-on fuel filter with pre-filter and hand primer pump

### Lubrication system

- Wet rear well steel sump with filler and dipstick
- Full flow spin-on filters
- Tube-type oil cooler thermostatically controlled

### Cooling system

- Thermostatically controlled with belt driven circulating pump and 28 inch belt-driven fan
- Radiator mounted with all guards and pipes
- Air/air charge cooler incorporated in radiator
- Coolant filter/conditioner

### Electrical equipment

- 24V starter motor and 24V 45 amp alternator with DC output
- Electronic Control Module mounted on engine with wiring looms and sensors
- 3 level engine protection system

### Flywheel and housing

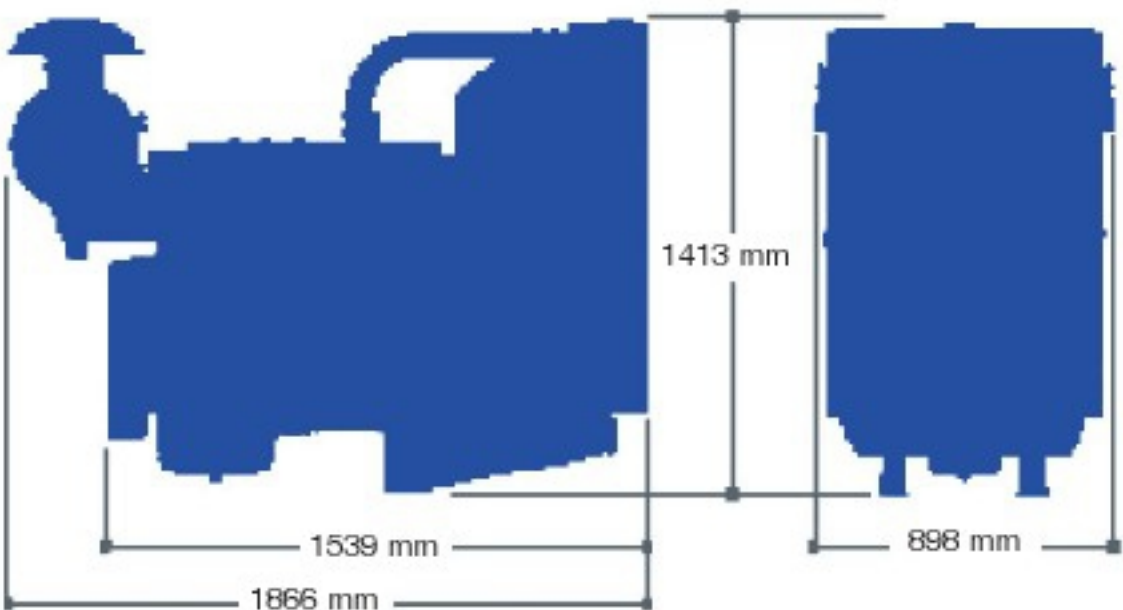
- High inertia flywheel to SAE 3 J620 Size 11½
- Cast iron SAE 2 flywheel housing

### Mountings

- Front engine mounting bracket

### Optional equipment

- 12V starter and alternator
- 12V ECM
- Sensor positions for:
  - oil pressure
  - oil temperature
  - coolant temperature
- SAE 1 flywheel housing and flywheel
- Turbocharger exhaust outlet
- Parts manual
- Workshop manual



| Fuel Consumption   |              |      |
|--------------------|--------------|------|
| Engine Speed       | 1500 rev/min |      |
|                    | g/kWh        | l/hr |
| Standby            | 202          | 59   |
| Prime Power        | 204          | 54   |
| 75% of Prime Power | 210          | 43   |
| 50% of Prime Power | 223          | 31   |

### General data

|                                        |                                       |
|----------------------------------------|---------------------------------------|
| Number of cylinders .....              | 6                                     |
| Cylinder arrangement .....             | Vertical in-line                      |
| Cycle .....                            | 4 stroke                              |
| Induction system .....                 | Turbocharged, air-to-air chargecooled |
| Combustion system.....                 | Direct injection                      |
| Cooling system.....                    | Water-cooled                          |
| Bore and stroke.....                   | 116.6 mm x 135.9 mm (4.6 in x 5.4 in) |
| Displacement .....                     | 8.7 litres (531 cubic in)             |
| Compression ratio .....                | 16.9:1                                |
| Direction of rotation .....            | Anti-clockwise, viewed on flywheel    |
| Total lubrication system capacity..... | 26.4 litres (7 US gal)                |
| Coolant capacity.....                  | 24.2 litres (6.4 US gal)              |
| Dimensions – Length .....              | 1866 mm (73.5 in)                     |
| Width.....                             | 898 mm (35.4 in)                      |
| Height .....                           | 1413 mm (55.6 in)                     |
| Dry weight (engine).....               | 889 kg (1960 lbs)                     |

Photographs are for illustrative purposes only and may not reflect final specification.

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 **Perkins®**  
THE HEART OF EVERY GREAT MACHINE





**Low Voltage alternators - 4 pole**  
**LSA 46.2**

180 to 315 kVA - 50 Hz / 228 to 381 kVA - 60 Hz

Electrical and mechanical data



# Low Voltage alternators 4 pole 3-phase **PARTNER**

## LSA 46.2

180 to 315 kVA - 50 Hz / 228 to 381 kVA - 60 Hz

### SPECIALLY ADAPTED TO APPLICATIONS

The LSA 46.2 alternator is designed to be suitable for typical generator applications, such as: backup, marine applications, rental, telecommunications, etc.

### COMPLIANT WITH INTERNATIONAL STANDARDS

The LSA 46.2 alternator conforms to the main international standards and regulations:

- IEC 60034, NEMA MG 1.32-33, ISO 8528-3, CSA / UL 1446 (UL 1004 on request), marine regulations, etc.

It can be integrated into a CE marked generator.

The LSA 46.2 is designed, manufactured and marketed in an ISO 9001 environment and ISO 14001.

### TOP OF THE RANGE ELECTRICAL PERFORMANCE

- Class H insulation.
- Standard 12-wire re-connectable winding, 2/3 pitch, type no. 6.
- Voltage range 50 Hz: 220 V - 240 V and 380 V - 415 V (440 V).
- Voltage range 60 Hz: 208 V - 240 V and 380 V - 480 V.
- High efficiency and motor starting capacity.
- Other voltages are possible with optional adapted windings:
  - 50 Hz: 440 V (no. 7), 500 V (no. 9), 550 V (no. 22), 600 V (no. 23), 690 V (no. 10 or 52).
  - 60 Hz: 380 V and 416 V (no. 8), 600 V (no. 9).
- R 791 interference suppression conforming to standard EN 55011 group 1 class B standard for European zone (CE marking).

### EXCITATION AND REGULATION SYSTEM SUITED TO THE APPLICATION

| Excitation system |        |        |        | Regulation options                  |                   |                 |                                                  |                              |
|-------------------|--------|--------|--------|-------------------------------------|-------------------|-----------------|--------------------------------------------------|------------------------------|
| Volage regulator  | SHUNT  | AREP   | PMG    | Current transformer for paralleling | Mains paralleling | 3-phase sensing | 3-phase sensing for mains paralleling unbalanced | Remote voltage potentiometer |
| R250              | Std    | -      | -      | -                                   | -                 | -               | -                                                | √                            |
| R450              | Option | Std    | Std    | C.T.                                | R726              | R731            | R734                                             | √                            |
| D510C             | Option | Option | Option | C.T.                                | included          | included        | contact factory                                  | √                            |

Voltage regulator accuracy  $\pm 0.5\%$

√ : possible mounting

### PROTECTION SYSTEM SUITED TO THE ENVIRONMENT

- The LSA 46.2 is IP 23.
  - Standard winding protection for clean environments with relative humidity  $\leq 95\%$ , including indoor marine environments.
- Options :
- Filters on air inlet : derating 5%.
  - Filters on air inlet and air outlet (IP 44) : derating 10%.
  - Winding protections for harsh environments and relative humidity greater than 95%.
  - Space heaters.
  - Thermal protection for winding and shields.

### REINFORCED MECHANICAL STRUCTURE USING FINITE ELEMENT MODELLING

- Compact and rigid assembly to better withstand generator vibrations.
- Steel frame.
- Cast iron flanges and shields.
- Twin-bearing and single-bearing versions designed to be suitable for engines on the market.
- Half-key balancing.
- Sealed for life ball bearings, regreasable bearings (optional).

### ACCESSIBLE TERMINAL BOX PROPORTIONED FOR OPTIONAL EQUIPMENT

- Easy access to the voltage regulator and to the connections.
- Possible inclusion of accessories for paralleling, protection and measurement.
- 12-way terminal block for voltage reconnection.



# Low Voltage alternators 4 pole 3-phase **PARTNER**

LSA 46.2

180 to 315 kVA - 50 Hz / 228 to 381 kVA - 60 Hz

## General characteristics

|                  |                                |                                     |                                 |                   |
|------------------|--------------------------------|-------------------------------------|---------------------------------|-------------------|
| Insulation class | H                              | Excitation system                   | SHUNT                           | AREP or PMG       |
| Winding pitch    | 2/3 (N° 6)                     | AVR type                            | R 250                           | R 450             |
| Number of wires  | 12                             | Voltage regulation (*)              | ± 0.5 %                         | ± 0.5 %           |
| Protection       | IP 23                          | Short-circuit current               | -                               | 300% (3 IN) : 10s |
| Altitude         | ≤ 1000 m                       | Totale Harmonic distortion THD (**) | no load < 2.5% - on load < 2.5% |                   |
| Overspeed        | 2250 min <sup>-1</sup>         | Waveform: NEMA = TIF (**)           | < 50                            |                   |
| Air flow         | 0.43 m³/s (50Hz) / 0.51 (60Hz) |                                     |                                 |                   |

(\*) Steady state. (\*\*) Total harmonic distortion between phases, no-load or on-load (non-distorting)

## Ratings 50 Hz - 1500 R.P.M.

| kVA / kW - P.F. = 0.8 |     |                      |      |      |       |      |                      |      |      |       |      |               |      |      |       |      |               |      |      |       |      |
|-----------------------|-----|----------------------|------|------|-------|------|----------------------|------|------|-------|------|---------------|------|------|-------|------|---------------|------|------|-------|------|
| Duty/T°C              |     | Continuous duty/40°C |      |      |       |      | Continuous duty/40°C |      |      |       |      | Stand-by/40°C |      |      |       |      | Stand-by/27°C |      |      |       |      |
| Class/T°K             |     | H/125°K              |      |      |       |      | F/105°K              |      |      |       |      | H/150°K       |      |      |       |      | H/163°K       |      |      |       |      |
| Phase                 |     | 3 ph.                |      |      | 1 ph. |      | 3 ph.                |      |      | 1 ph. |      | 3 ph.         |      |      | 1 ph. |      | 3 ph.         |      |      | 1 ph. |      |
| Y                     |     | 380V                 | 400V | 415V | 440V  | ΔΔ   | 380V                 | 400V | 415V | 440V  | ΔΔ   | 380V          | 400V | 415V | 440V  | ΔΔ   | 380V          | 400V | 415V | 440V  | ΔΔ   |
| Δ                     |     | 220V                 | 230V | 240V |       | 230V | 220V                 | 230V | 240V |       | 230V | 220V          | 230V | 240V |       | 230V | 220V          | 230V | 240V |       | 230V |
| YY                    |     |                      |      |      | 220V  |      |                      |      |      | 220V  |      |               |      |      | 220V  |      |               |      |      | 220V  |      |
| 46.2 M3               | kVA | 180                  | 180  | 180  | 160   | 104  | 168                  | 168  | 168  | 146   | 97   | 195           | 195  | 195  | 175   | 110  | 203           | 203  | 203  | 180   | 114  |
|                       | kW  | 144                  | 144  | 144  | 128   | 83   | 134                  | 134  | 134  | 116   | 78   | 156           | 156  | 156  | 140   | 88   | 162           | 162  | 162  | 144   | 91   |
| 46.2 M5               | kVA | 200                  | 200  | 200  | 175   | 116  | 184                  | 184  | 184  | 160   | 108  | 214           | 214  | 214  | 190   | 123  | 223           | 223  | 223  | 200   | 127  |
|                       | kW  | 160                  | 160  | 160  | 140   | 93   | 147                  | 147  | 147  | 128   | 86   | 171           | 171  | 171  | 152   | 98   | 178           | 178  | 178  | 160   | 102  |
| 46.2 L6               | kVA | 250                  | 250  | 240  | 205   | 141  | 217                  | 217  | 217  | 190   | 131  | 254           | 260  | 254  | 225   | 150  | 266           | 275  | 266  | 237   | 156  |
|                       | kW  | 200                  | 200  | 192  | 164   | 113  | 174                  | 174  | 174  | 152   | 105  | 203           | 208  | 203  | 180   | 120  | 213           | 220  | 213  | 190   | 125  |
| 46.2 L9               | kVA | 280                  | 280  | 280  | 215   | 154  | 250                  | 250  | 250  | 195   | 142  | 290           | 290  | 290  | 240   | 165  | 300           | 300  | 300  | 250   | 170  |
|                       | kW  | 224                  | 224  | 224  | 172   | 123  | 200                  | 200  | 200  | 156   | 114  | 232           | 232  | 232  | 192   | 132  | 240           | 240  | 240  | 200   | 136  |
| 46.2 VL12             | kVA | 315                  | 315  | 300  | 260   | 187  | 276                  | 276  | 260  | 230   | 170  | 327           | 327  | 310  | 285   | 200  | 341           | 341  | 325  | 300   | 208  |
|                       | kW  | 252                  | 252  | 240  | 208   | 150  | 221                  | 221  | 208  | 184   | 136  | 262           | 262  | 248  | 228   | 160  | 273           | 273  | 260  | 240   | 166  |

## Ratings 60 Hz - 1800 R.P.M.

| kVA / kW - P.F. = 0.8 |     |                      |      |      |       |       |                      |      |       |       |      |               |       |       |      |      |               |      |      |      |      |
|-----------------------|-----|----------------------|------|------|-------|-------|----------------------|------|-------|-------|------|---------------|-------|-------|------|------|---------------|------|------|------|------|
| Duty/T°C              |     | Continuous duty/40°C |      |      |       |       | Continuous duty/40°C |      |       |       |      | Stand-by/40°C |       |       |      |      | Stand-by/27°C |      |      |      |      |
| Class/T°K             |     | H/125°K              |      |      |       |       | F/105°K              |      |       |       |      | H/150°K       |       |       |      |      | H/163°K       |      |      |      |      |
| Phase                 |     | 3 ph.                |      |      | 1 ph. | 3 ph. |                      |      | 1 ph. | 3 ph. |      |               | 1 ph. | 3 ph. |      |      | 1 ph.         |      |      |      |      |
| Y                     |     | 380V                 | 416V | 440V | 480V  | ΔΔ    | 380V                 | 416V | 440V  | 480V  | ΔΔ   | 380V          | 416V  | 440V  | 480V | ΔΔ   | 380V          | 416V | 440V | 480V | ΔΔ   |
| Δ                     |     | 220V                 | 240V |      |       | 240V  | 220V                 | 240V |       |       | 240V | 220V          | 240V  |       |      | 240V | 220V          | 240V |      |      | 240V |
| YY                    |     |                      | 208V | 220V | 240V  |       |                      | 208V | 220V  | 240V  |      |               | 208V  | 220V  | 240V |      |               | 208V | 220V | 240V |      |
| 46.2 M3               | kVA | 192                  | 205  | 220  | 228   | 128   | 177                  | 189  | 198   | 210   | 119  | 203           | 219   | 228   | 244  | 136  | 211           | 225  | 237  | 255  | 141  |
|                       | kW  | 154                  | 164  | 176  | 182   | 102   | 142                  | 151  | 158   | 168   | 95   | 162           | 175   | 182   | 195  | 109  | 169           | 180  | 190  | 204  | 113  |
| 46.2 M5               | kVA | 205                  | 219  | 230  | 250   | 136   | 190                  | 203  | 211   | 225   | 126  | 219           | 235   | 245   | 262  | 145  | 227           | 242  | 252  | 273  | 151  |
|                       | kW  | 164                  | 175  | 184  | 200   | 109   | 152                  | 162  | 169   | 180   | 101  | 175           | 188   | 196   | 210  | 116  | 182           | 194  | 202  | 218  | 121  |
| 46.2 L6               | kVA | 257                  | 276  | 289  | 300   | 173   | 239                  | 255  | 265   | 278   | 160  | 276           | 295   | 308   | 324  | 184  | 285           | 304  | 317  | 337  | 192  |
|                       | kW  | 206                  | 221  | 231  | 240   | 138   | 191                  | 204  | 212   | 222   | 128  | 221           | 236   | 246   | 259  | 147  | 228           | 243  | 254  | 270  | 154  |
| 46.2 L9               | kVA | 296                  | 316  | 328  | 344   | 197   | 273                  | 291  | 302   | 302   | 182  | 313           | 338   | 351   | 357  | 209  | 326           | 348  | 366  | 375  | 220  |
|                       | kW  | 237                  | 253  | 262  | 275   | 158   | 218                  | 233  | 242   | 242   | 146  | 250           | 270   | 281   | 286  | 167  | 261           | 278  | 293  | 300  | 176  |
| 46.2 VL12             | kVA | 333                  | 357  | 372  | 381   | 220   | 309                  | 329  | 341   | 347   | 200  | 359           | 383   | 397   | 412  | 235  | 370           | 399  | 415  | 429  | 243  |
|                       | kW  | 266                  | 286  | 298  | 305   | 176   | 247                  | 263  | 273   | 278   | 160  | 287           | 306   | 318   | 330  | 188  | 296           | 319  | 332  | 343  | 194  |



# PLENUM

This type of enclosures has gained a well known reputation through its relatively medium size and good capabilities for noise reduction. It has a very unique inlet and outlet system and the front and rear attenuators makes it easily accessible for maintenance purposes.

## Charasteristics:

- > Body and components made of steel painted with highly corrosive synthetic gloss.
- > Stainless steel locks and hinges.
- > Easy access for the radiator and the control panel throgh the outlet and inlet attenuators.
- > Lube oil pipe can be reached externally to allow easy drainage.
- > Fuel fill and battery are secured throgh lockable doors.
- > Control panel viewing window in the inlet attenuator.
- > Lifting points on the top of the enclosure.
- > Exhaust silencing system in the interior of the enclosure.
- > Large doors for easy maintenance access. (two or four depending on the size).
- > Emergency stop push button mounted on the exterior of the enclosure (optional).



**GHADDAR**  
**MACHINERY Co. S.A.L.**



## Range

### 9 - 250 KVA

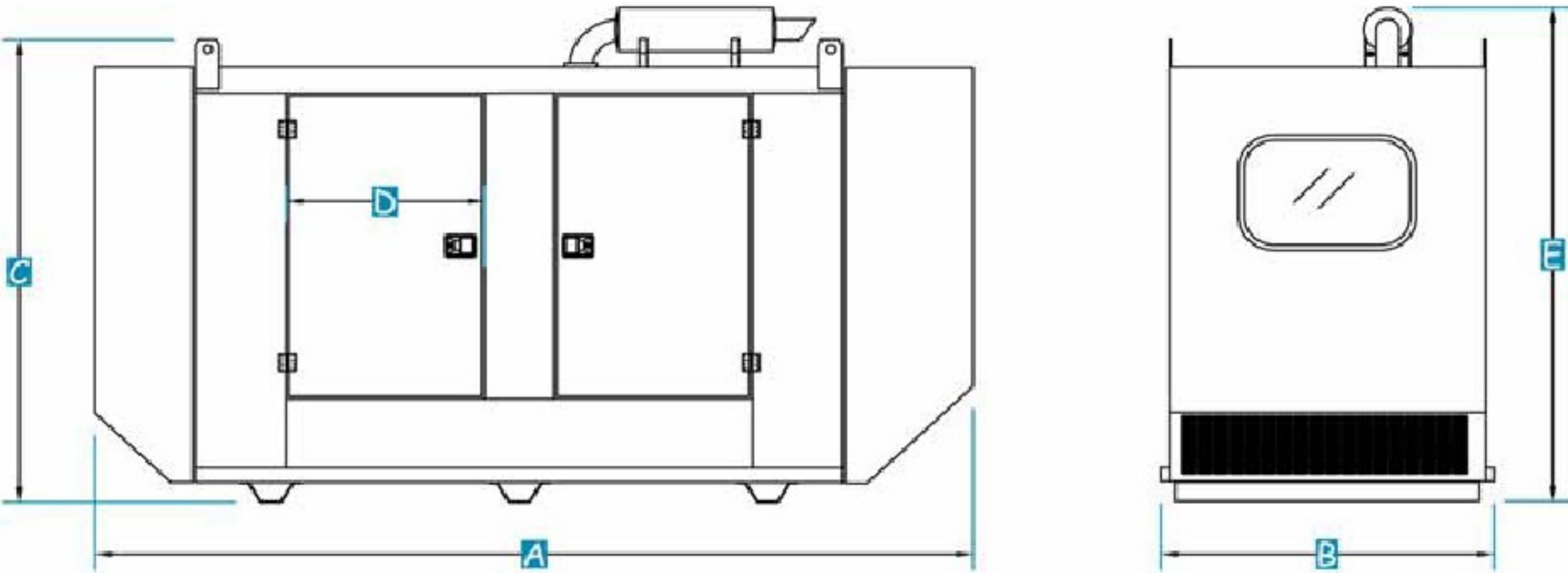


Certificate Numbers, CC1680-009512, 009912



Sound Pressure Levels (dBA)

|                |           | 50 Hz |      |      |      |      |      | 60 Hz |      |      |      |      |      |
|----------------|-----------|-------|------|------|------|------|------|-------|------|------|------|------|------|
|                |           | 1 m   |      | 3 m  |      | 7 m  |      | 1 m   |      | 3 m  |      | 7 m  |      |
| Generating Set | Powertech | 0%    | 100% | 0%   | 100% | 0%   | 100% | 0%    | 100% | 0%   | 100% | 0%   | 100% |
| Engine model   | KVA       | Load  | Load | Load | Load | Load | Load | Load  | Load | Load | Load | Load | Load |
| 403C-11G       | 9         | 69.7  | 71   | 66.7 | 68   | 61.7 | 63   | 71.4  | 72.7 | 68.4 | 69.7 | 63.4 | 64.7 |
| 403C-15G       | 13        | 69.7  | 71   | 66.7 | 68   | 61.7 | 63   | 71.4  | 72.7 | 68.4 | 69.7 | 63.4 | 64.7 |
| 404C-22G       | 20        | 69.7  | 71   | 66.7 | 68   | 61.7 | 63   | 71.4  | 72.7 | 68.4 | 69.7 | 63.4 | 64.7 |
| 1103A-33G      | 30        | 71.9  | 73.4 | 68.4 | 69.9 | 63.4 | 64.9 | 73.8  | 75.3 | 70.3 | 71.8 | 65.3 | 66.8 |
| 1103A-33TG1    | 45        | 70.5  | 72   | 67   | 68.5 | 62   | 63.5 | 72.4  | 73.9 | 68.9 | 70.4 | 63.9 | 65.4 |
| 1103A-33TG2    | 60        | 70.5  | 72   | 67   | 68.5 | 62   | 63.5 | 72.4  | 73.9 | 68.9 | 70.4 | 63.9 | 65.4 |
| 1104A-44TG1    | 65        | 70.5  | 72   | 67   | 68.5 | 62   | 63.5 | 72.4  | 73.9 | 68.9 | 70.4 | 63.9 | 65.4 |
| 1104A-44TG2    | 80        | 71.7  | 73.2 | 68.2 | 69.7 | 63.2 | 64.4 | 73.5  | 75   | 70   | 71.5 | 65   | 66.2 |
| 1006TG1A       | 95        | 73.5  | 75   | 70   | 71.5 | 65   | 66.2 | 76    | 77.5 | 72.5 | 74   | 67.5 | 68.7 |
| 1104C-44TAG2   | 100       | 73.5  | 75   | 70   | 71.5 | 65   | 66.2 | 76    | 77.5 | 72.5 | 74   | 67.5 | 68.7 |
| 1006TG2        | 105       | 73.5  | 75   | 70   | 71.5 | 65   | 66.2 | 76    | 77.5 | 72.5 | 74   | 67.5 | 68.7 |
| 1006TAG1       | 135       | 74.7  | 76.2 | 71.2 | 72.7 | 66.2 | 67.4 | 77.2  | 78.7 | 73.7 | 75.2 | 68.7 | 69.9 |
| 1006TAG2       | 150       | 74.7  | 76.2 | 71.2 | 72.7 | 66.2 | 67.4 | 77.2  | 78.7 | 73.7 | 75.2 | 68.7 | 69.9 |
| 1306C-E87TAG3  | 200       | 76.9  | 79.6 | 73.4 | 75.5 | 68.4 | 70.8 | 79.8  | 82.5 | 76.3 | 78.4 | 71.3 | 73.7 |
| 1306C-E87TAG6  | 250       | 76.9  | 79.6 | 73.4 | 75.5 | 68.4 | 70.8 | 79.8  | 82.5 | 76.3 | 78.4 | 71.3 | 73.7 |



Dimensions

| Generating Set | Powertech | A: mm | B: mm | C: mm | D: mm | E: mm |
|----------------|-----------|-------|-------|-------|-------|-------|
| Engine model   | KVA       |       |       |       |       |       |
| 403C-11G       | 9         | 2230  | 1100  | 1450  | 834   |       |
| 403C-15G       | 13        | 2230  | 1100  | 1450  | 834   |       |
| 404C-22G       | 20        | 2230  | 1100  | 1450  | 834   |       |
| 1103A-33G      | 30        | 2630  | 1150  | 1660  | 985   |       |
| 1103A-33TG1    | 45        | 2630  | 1150  | 1660  | 985   |       |
| 1103A-33TG2    | 60        | 2630  | 1150  | 1660  | 985   |       |
| 1104A-44TG1    | 65        | 2630  | 1150  | 1660  | 985   |       |
| 1104A-44TG2    | 80        | 2920  | 1150  | 1660  | 640   |       |
| 1006TG1A       | 95        | 3620  | 1260  | 1860  | 872   |       |
| 1104C-44TAG2   | 100       | 3620  | 1260  | 1860  | 872   |       |
| 1006TG2        | 105       | 3620  | 1260  | 1860  | 872   |       |
| 1006TAG1       | 135       | 3620  | 1260  | 1860  | 872   |       |
| 1006TAG2       | 150       | 3620  | 1260  | 1860  | 872   |       |
| 1306C-E87TAG3  | 200       | 4360  | 1650  | 2160  | 860   | 2480  |
| 1306C-E87TAG6  | 250       | 4360  | 1650  | 2160  | 860   | 2480  |