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# PG450B1



## Output Ratings

|                      |                  |
|----------------------|------------------|
| Generating Set Model | PG450B1          |
|                      | <b>Baseload</b>  |
| 380-415V, 50 Hz      | 450 kVA / 360 kW |

Ratings at 0.8 pf

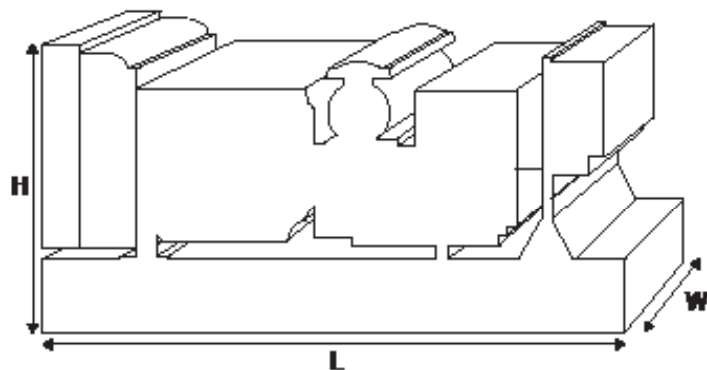
## Definitions

### Baseload (Continuous) Rating

These ratings are applicable for supplying continuous electrical power for full load operations. There is no overload available. The ratings represent the engine performance in accordance with ISO 3046 at reference conditions equivalent to those specified in ISO 3046/1 based on the use of natural gas having a lower calorific value of 34.71MJ/m<sup>3</sup>

### Standard Reference Conditions

Note: Standard reference conditions 25°C (77°F) Air Inlet Temp, 100m (328ft) A.S.L. 30% relative humidity. All engine performance data based on the above mentioned maximum continuous ratings. Fuel consumption data at full load using gas fuel with a lower calorific value of 34.71MJ/m<sup>3</sup>



## Ratings and Performance Data

|  |                             |
|--|-----------------------------|
| Engine Make and Model                                      | Perkins 4006-23TRS2         |
| Alternator manufacturer for FG Wilson by:                  | Leroy Somer                 |
| Alternator Model:  | LL6114F                     |
| Control Panel:   | PowerWizard 2.0             |
| Base Frame:  | Heavy Duty Fabricated Steel |
| Circuit Breaker Type/Rating:                               | Optional                    |
| Frequency:   | <b>50 Hz</b>                |
| Engine Speed: RPM:   | 1500                        |
| Fuel Consumption: m <sup>3</sup> /hr (ft <sup>3</sup> /hr) | 102 (3594)                  |

## Available Options

FG Wilson offer a range of optional features to tailor our generating sets to meet your power needs. Options include:

- Upgrade to CE Certification
- A wide range of Sound Attenuated Containers
- A variety of generating set control and synchronising panels
- Additional alarms and shutdowns
- A selection of exhaust silencer noise levels

For further information on all of the standard and optional features accompanying this product please contact your local Dealer or visit: [www.FGWilson.com](http://www.FGWilson.com)

## Dimensions and Weights

| Length (L)<br>mm (in) | Width (W)<br>mm (in) | Height (H)<br>mm (in) | Wet<br>kg (lb) |
|-----------------------|----------------------|-----------------------|----------------|
| 4746 (187)            | 1992 (78)            | 2189 (86)             | 6056 (13351)   |

Wet = With Lube Oil and Coolant

Ratings in accordance with ISO 8528, ISO 3046, IEC 60034, BS5000 and NEMA MG-1/22. Generating set pictured may include optional accessories.

## Engine Technical Data

|  |                       |
|--|-----------------------|
| No. of Cylinders/Alignment:                                | 6 in-line             |
| Cycle:   | 4 Stroke              |
| Bore/Stroke: mm (in)                                       | 160 (6.3) / 190 (7.5) |
| Induction:   | Turbocharged          |
| Cooling Method:  | Water                 |
| Governing Type:  | Electronic            |
| Governing Class:   | ISO 8528 G2           |
| Compression Ratio:   | 12:1 Nominal          |
| Displacement: l (cu.in):                                   | 22.92 (1399)          |
| Moment of Inertia: kg m <sup>2</sup> (lb/in <sup>2</sup> ) | 4.12 (0.006)          |
| Engine Electrical System:                                  |                       |
| -Voltage/Ground  | 24/Negative           |
| -Battery Charger Amps                                      | 32                    |
| Weight: kg (lb)  | - Dry 2420 (5335.2)   |
|  | - Wet 2652 (5846.7)   |

## Performance

|                             |            |
|-----------------------------|------------|
| Engine Speed: rpm           | 1500       |
| Gross Engine Power: kW (hp) | 393 (526)  |
| BMEP: kPa (psi)             | 1370 (199) |

## Fuel Systems

|                 |   |
|-----------------|---|
| Permitted Fuel: | Natural gas with lower calorific value of 34.7 MJ/m <sup>3</sup> and minimum methane number of 75 |
|-----------------|---|

Fuel consumption varies widely within each gas type stated. This is because these gases are available (naturally or produced) with variances in their physical properties.

## Air Systems

|   |                     |
|---|---------------------|
| Air Filter Type:  | Replaceable Element |
| Combustion Air Flow: m <sup>3</sup> /min (cfm)                    | 30.2 (1066.5)       |
| Max. Combustion Air Intake Restriction: kPa (in H <sub>2</sub> O) | 3.73 (15.0)         |
| Radiator Cooling Airflow: m <sup>3</sup> /min (cfm)               | 918 (32418)         |
| External Restriction to Cooling Airflow: Pa (in Wg)               | 196 (0.82)          |

## Cooling System

|   |              |
|---|--------------|
| Cooling System Capacity: l (US gal)             | 237 (62.9)   |
| Water Pump Type:                                | Gear Driven  |
| Heat Rejected to Water & Lube Oil: kW (Btu/min) | 222 (12627)  |
| Heat Radiation to Room: kW (Btu/min)            | 61 (3470)    |
| Radiator Fan Load:                              | 11.6 (15.54) |

Cooling system designed to operate in ambient conditions up to 40°C (104°F). Contact your local FG Wilson Dealer for power ratings at specific site conditions.

## Lubrication System

|                                |                         |
|--------------------------------|-------------------------|
| Oil Filter Type:               | Spin-On, Full Flow      |
| Total Oil Capacity: l (US gal) | 123 (32.5)              |
| Oil Pan: l (US gal)            | 113 (29.9)              |
| Oil Type:                      | See Service Bulletin 48 |
| Oil Cooling Method:            | Water                   |

## Exhaust System

|   |             |
|---|-------------|
| Max. Allowable Back Pressure: kPa (in Hg)     | 3.9 (1.15)  |
| Exhaust Gas Flow: m <sup>3</sup> /min (cfm)   | 78.3 (2764) |
| Exhaust Gas Temperature: °C (°F):             | 485 (906)   |
| Heat Rejected to Exhaust System: kW (Btu/min) | 314 (17860) |

## Alternator Physical Data

|                                |             |
|--------------------------------|-------------|
| Manufactured for FG Wilson by: | Leroy Somer |
| Model:                         | LL6114F     |
| No. of Bearings:               | Single      |
| Insulation Class:              | H           |
| Winding Pitch Code:            | 2/3 (No. 6) |
| Wires:                         | 12          |
| Ingress Protection Rating:     | IP23        |
| Excitation System:             | Shunt       |
| AVR Model:                     | R450        |

## Alternator Operating Data

|                                    |   |
|------------------------------------|---|
| Overspeed: RPM                     | 2250  |
| Voltage Regulation (steady state): | +/- 0.5   |
| Wave Form NEMA = TIF:              | <50   |
| Wave Form IEC = THF:               | <2%   |
| Total Harmonic Content LL/LN:      | <2%   |
| Radio Interference:                | Suppression is in line with European Standard EN61000 |
| Radiant Heat: kW (Btu/min)         | 50 Hz: 20.27 (1154)                                   |

## Alternator Performance Data:

| Data Item                  | 415/240V | 400/230 | 380/220 |
|----------------------------|----------|---------|---------|
| <b>Motor Starting</b>      |          |         |         |
| Capability* kVA            | 1296     | 1213    | 1106    |
| Short Circuit Capacity** % | 300      | 300     | 300     |
| <b>Reactances:</b>         |          |         |         |
| Per Unit                   |          |         |         |
| X <sub>d</sub>             | 2.568    | 2.762   | 3.062   |
| X' <sub>d</sub>            | 0.132    | 0.141   | 0.159   |
| X'' <sub>d</sub>           | 0.093    | 0.100   | 0.110   |

Reactances shown are applicable to baseload ratings

\* Based on 30% voltage dip at 0.6 power factor.

\*\* With optional Permanent Magnet generator or AREP excitation.

## Voltage Technical Data

|         | PG450B1 Baseload |     |
|---------|------------------|-----|
|         | kVA              | kW  |
| 415/240 | 450              | 360 |
| 400/230 | 450              | 360 |
| 380/220 | 450              | 360 |

## General Information

### Documentation

A full set of operation and maintenance manuals and circuit wiring diagrams.

### Generating Set Standards

The equipment meets the following standards: BS5000, ISO 8528, ISO 3046, IEC 60034, NEMA MG-1.22.  
FG Wilson is a fully accredited ISO 9001 company.

### Warranty

All equipment carries full manufacturer's warranty. Extended warranty terms available. For details on warranty cover please contact your local dealer, or visit our website: [www.FGWilson.com](http://www.FGWilson.com)

### Dealer Contact Details:

### FG Wilson manufactures product in the following locations:

Northern Ireland • Brazil • China • India • USA

With headquarters in Northern Ireland, FG Wilson operates through a Global Dealer Network.  
To contact your local Sales Office please visit the FG Wilson website at [www.FGWilson.com](http://www.FGWilson.com).

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In line with our policy of continuous product development, we reserve the right to change specification without notice.

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