

# Perkins P-22

## Prime 20KVA 3 Phase

50 Hz

60 Hz

**24 KVA**  
**3 Phase**

## GENERATING SET MODEL (Perkins P-22)

| Output Ratings                   | Prime  | Standby |
|----------------------------------|--------|---------|
| 380-415 V, 3 ph, 50 Hz, 1500 rpm | 20KVA  | 22KVA   |
|                                  | 16KW   | 17.6 KW |
| 380-415 V, 3 ph, 60 Hz,1800 rpm  | 24 KVA | 26.6KVA |
|                                  | 19.2KW | 21.3KW  |

## ENGINE/TECHNICAL DATA

| Engine Make                          | Perkins                             |
|--------------------------------------|-------------------------------------|
| Engine Model                         | 404A-22G1                           |
| Governing Type                       | Electronic                          |
| Number of Cylinders                  | 4                                   |
| Cylinder Arrangement                 | Vertical in line                    |
| Bore and Stroke mm                   | 84 x 100                            |
| Displacement / Cubic Capacity litres | 2.216                               |
| Induction System                     | Naturally Aspirated                 |
| Cycle                                | 4 stroke                            |
| Combustion System                    | Indirect Injection                  |
| Compression Ratio                    | 23.3:1                              |
| Rotation Anti-clockwise,             | Anti-clockwise,viewed from flywheel |
| Cooling System                       | Water - cooled                      |

### Ratings at 0.8 Power Factor

| Frequency and Engine Speed | 50Hz & 1500rpm | 60Hz & 1800rpm |
|----------------------------|----------------|----------------|
|----------------------------|----------------|----------------|

|                                          |      |      |
|------------------------------------------|------|------|
| Fuel Consumption @ 50% load L/hr         | 2.9  | 3.5  |
| @75% load L/hr                           | 4.0  | 4.8  |
| @100% load L/hr                          | 5.3  | 6.2  |
| Total Lubrication System Capacity litres | 10.6 | 10.6 |
| Total Coolant Capacity litres            | 7.0  | 7.0  |
| Exhaust Temperature: °C                  | 445  | 505  |

### ALTERNATOR DATA

|                        |                                 |
|------------------------|---------------------------------|
| Make                   | UPS / Leroy Somer               |
| Model                  | UPS148D/LSA(TAL)040C            |
| No. of bearings        | 1                               |
| Insulation class       | H                               |
| Total Harmonic Content | at no load <3%<br>- on load <2% |
| Wires                  | 6/12                            |
| Ingress Protection     | Ip23                            |
| Excitation System      | SHUNT                           |
| Winding Pitch          | 2/3                             |

|                             |                      |
|-----------------------------|----------------------|
| Overspeed                   | 2250mn <sup>-1</sup> |
| Voltage Regulation (steady) | ± 1%                 |

## CONTROL PANEL

|              |                    |
|--------------|--------------------|
| Make         | Deep Sea           |
| <b>Model</b> | <b>4000 SERIES</b> |

The DSE 4000 Series is an Auto Start Control Module for single genset applications. It includes a backlit LCD display which clearly shows the status of the engine all the times. This module can either be programmed using the front panel or by using the DSE configuration suite PC software.

### Metering and Alarm indications:

- Generator frequency
- Underspeed, Overspeed
- Generator volts (L-L, L-N)
- Generator current
- Engine oil pressure
- Engine coolant temperature
- Hours run counter
- Battery volts
- Fail to start/stop
- Emergency stop
- Failed to reach loading voltage/frequency
- Charge fail
- Low DC voltage
- CAN diagnostics and CAN fail/error



## 1. ENGINE

Perkins four stroke heavy duty high performance industrial type diesel engine.

## 2. ENGINE FILTRATION SYSTEM

- Cartridge type dry air filter.
  - Two Cartridge type fuel filters.
  - Full flow lube oil filter.
- All filters have replaceable elements.

## 3. COOLING RADIATOR

Radiator and cooling fan, complete with safety guards, designed to cool the engine at high ambient temperatures (consult your dealer for de-rating factors)

## 4. EXHAUST SYSTEM

Exhaust gas flow 1.66m<sup>3</sup>/min  
Maximum allowable back pressure 10.2 (kPa)

## 5. CIRCUIT BREAKER TYPE

3 pole MCCB. (4 pole is optional)

## 6. FUEL SYSTEM

The baseframe design is incorporated with an integral fuel tank with a capacity of approx. 8 hours running at Full Load. The tank is supplied complete with fill cap breather, fuel feed and return lines to the Engine and drain plug.

## 7. ALTERNATOR

### 7.1 INSULATION SYSTEM

- The insulation system is Class H.
- All windings are impregnated in either a triple dip thermosetting liquid, oil and acid resisting polyester varnish or vacuum pressure impregnated with a special polyester resin.
- Heavy coat of antitracking varnish additional protection against moisture or condensation.

### 7.2 AUTOMATIC VOLTAGE REGULATOR (AVR)

The fully sealed Automatic Voltage Regulator maintains the Voltage Regulation at  $\pm 1\%$ . Nominal adjustment by means of a trim pot incorporated on the AVR.

## 8. MOUNTING ARRANGEMENT

### 8.1 COUPLING

The Engine and Alternator are directly coupled by means of an SAE flange. The Engine flywheel is flexibly coupled to the Alternator rotor.

### 8.2 ANTI-VIBRATION MOUNTING PADS

Anti-Vibration pads are affixed between the Engine / Alternator feet and the Baseframe thus ensuring complete vibration isolation of the rotating assembly.

### 8.3 SAFETY GUARDS

The Fan & Fan Drive along with the Battery Charging Alternator are Safety Guard protected for personnel protection

## 9. FACTORY TEST

- The Generating set is load tested before dispatch
- All protective devices control functions and site load conditions are simulated. The generator and it's systems are checked before dispatch.

## 10. EQUIPMENT FINISHING

All mild steel components are fully degreased and painted with powder coated paint to ensure maximum scuff resistance and durability.

## 11. DOCUMENTATION

Operation & Maintenance manual, Circuit wiring diagrams and Commissioning / Fault Finding instruction leaflets are accompanied with the Generator.

## 12. QUALITY STANDARDS

The equipment meets the following standards: BS4999, BS5000, BS5514 IEC 60034, VDE0530, NEMA MG 1.22 and ISO 8528.

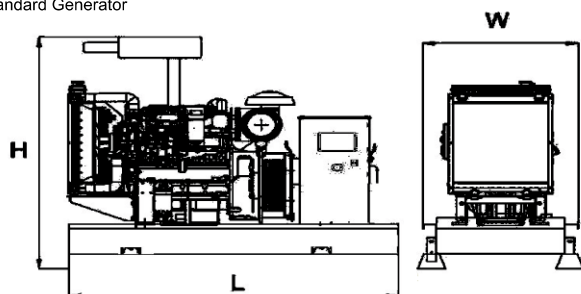
## 13. WARRANTY

All of the Generating Sets are covered under a warranty policy for a period of 12 months or 1000 working hours. Warranty of the equipment is in line with manufacturers warranty terms & conditions. (check warranty statement for more details, as it may vary for different countries)

In line with continuous product development, we reserve the right to change specifications without notice.

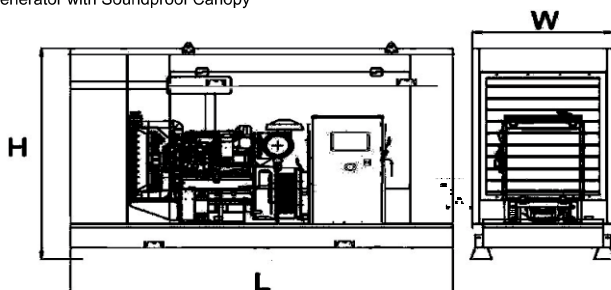
# DIMENSIONS AND WEIGHT

Standard Generator



|               |         |
|---------------|---------|
| Length, L     | 1.353 m |
| Height, H     | 1.095 m |
| Width, W      | 0.530 m |
| Weight, Total | 540 kg  |

Generator with Soundproof Canopy



|               |         |
|---------------|---------|
| Length, L     | 1.7 m   |
| Height, H     | 1.357 m |
| Width, W      | 0.9 m   |
| Weight, Total | 600 kg  |