

Venus Series Engines

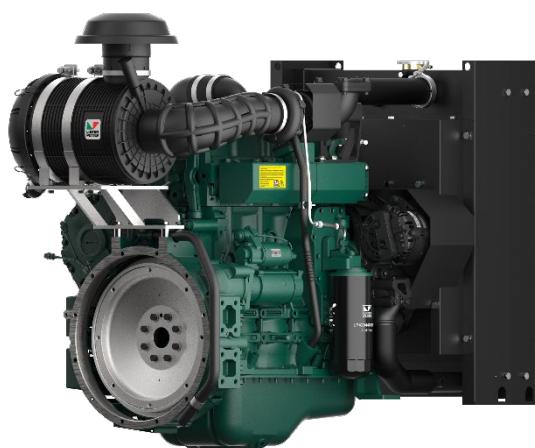


LP443G3

LP443G3 Engine

fixed speeds
1500 r/min

78 - 86 kWm | 104.6 – 115.3 bhp²



OVER VIEW

The engine is specifically designed as a Power generating engine suitable for use in Stage II emissions territories. It is durable, reliable and easy to maintain with oil & filter changes up to 500 hours, dependant on operational conditions. It is designed for continuous operation in ambient temperatures up to 52°C (125°F) and a cold start capability down to -25°C (-13°F).

G Build

Note:

For further information and approval please contact Applications Department

* Optional items standard on most builds.

BASIC ENGINE CHARACTERISTICS

- direct fuel injection
- 4 cylinders
- liquid cooled
- Turbocharged aspirated

DESIGN FEATURES AND EQUIPMENT

- electric starting
- anti clockwise rotation, looking on the flywheelend
- SAE Flywheel connection
- SAE compliant flywheel housing
- radiator and fangard
- cast-iron structural crankcase
- self-vent fuel injection system
- mechanical fuel injection equipment
- mechanical and electronic governing variants
- flywheel and gear ring
- cyclonic heavy duty airfiltration
- oil pressure protection switch
- coolant temperature protection switch
- spin-on full flow lubricating oil filter
- fuel filter / agglomerator
- intake and exhaust manifolds
- operators' handbook

OPTIONAL ITEMS

A range of options are available that allows your to select a specification that matches your requirements; please consult your Lister Petter Engine distributor.

POWER OUTPUTS³ | Stage II EMISSIONS RATINGS

| Model | Speed, r/min | Power | Gross ² | | Net | | Standard Generator Output* | | |
|---------|--------------|------------|--------------------|-------|-----|-------|----------------------------|-----|-----|
| | | | kW | bhp | kW | bhp | Power | kVA | kWe |
| LP443G3 | 1500 | Continuous | 78 | 104.6 | 76 | 101.9 | PRP | 83 | 66 |
| | | Fuel Stop | 86 | 115.3 | 84 | 112.6 | ESP | 90 | 72 |

TECHNICAL DATA

| | | |
|---|-----------------|------------------------|
| Engine fixed speed | 1500r/min | LP443G3 |
| Type of fuel injection | | Direct |
| Number of cylinders | | 4 |
| Aspiration | | Turbocharged |
| Direction of rotation (flywheel end) | | Anti clockwise |
| Nominal cylinder bore | mm | 105 |
| | in | 4.1 |
| Stroke | mm | 124 |
| | in | 4.9 |
| Total cylinder capacity | litre | 4.3 |
| | in ³ | 262 |
| Compression ratio | | 17.3:1 |
| Firing order (number 1 cylinder is at the gear end) | | 1-3-4-2 |
| Alternator | | 24Vx55A |
| Starter motor | | 24Vx4.5kW |
| Fuel injection pump | | Mechanical |
| Speed governor | | Electronic |
| Speed regulation class | | ISO 8528 G3 |
| Fly wheel housing | | SAE 3 |
| Fly wheel | | SAE J620 Size 11.5" |

RATING DEFINITIONS TO ISO 3046

ISO Standard Conditions

Barometric pressure 100kPa
Relative humidity 30%
Ambient air temperature at the inlet manifold 25°C

Power Standards

The engine performance corresponds to ISO 3046, BS 5514 and DIN 6271. The technical data applies to an engine without cooling fan and operating on a fuel with calorific value of 42.7 MJ/kg (18360 BTU/lb) and a density of 0.84 kg/liter (7.01 lb/US gal, 8.42 lb/Imp gal).

Fixed Speed: Continuous Power (ICN)

The power in kW which the engine is capable of delivering continuously at the stated crankshaft speed, under ISO 3046 standard conditions, measured at the flywheel without power-absorbing accessories, provided that the engine is overhauled and maintained in good operating condition and that fuel to BS EN 590 Class A1 or A2, and lubricating oils to the correct performance specification and viscosity classification as recommended by Lister Petter Engine Company are used.

Fixed Speed (Fuel Stop): Overload Power (ICXN)

The maximum power in kW which the engine is capable of delivering intermittently at the stated crankshaft speed for a period not exceeding one hour in any period of twelve hours of continuous running, immediately after working at the continuous power, under ISO 3046 standard conditions and with the provisions specified for continuous power in item (1) above, but with the fuel limited so that the fuel stop power cannot be exceeded.

Derating

For non-standard site conditions, reference should be made to relevant BS, ISO & DIN standards.

Notes:

1. Power ratings are measured at the flywheel end.
- 2.. Power ratings and fuel consumption figures apply to a fully run-in, non derated engine without a radiator and fan fitted, and without power absorbing accessories or transmission equipment.

* The power output of the generator data is calculated using a typical efficiency of the AC generator. The kVA and kWe values are converted as per standard power factor 0.8. Generator data is for reference only.

EXHAUST AND INTAKE SYSTEM | 1500 RPM FIXED SPEED ENGINES

| Parameter | Engine Model |
|---|--------------|
| | LP443G3 |
| EXHAUST | |
| Maximum allowable back-pressure (kPa) | ≤ 10 |
| Exhaust gas flow, (m ³ /min) | 13.2 |
| Emissions level | Stage II |
| Exhaust gas temperature, continuous (°C) | 550 |
| Exhaust gas temperature, overload (°C) | 600 |
| Exhaust pipe diameter - recommended | 80mm |
| INTAKE | |
| Maximum allowable inlet restriction (kPa) | ≤ 6 |
| Combustion air flow (m ³ /min) | 5.6 |

ENGINE COOLANT SYSTEM | 1500 RPM, FIXED SPEED

| Parameter | Engine Model |
|--|--|
| | LP443G3 |
| Cooling method | Liquid cooled (belt driven water pump) |
| RADIATOR | |
| Material | Aluminium |
| Radiator face area (m ²) | 38 |
| Pressure cap setting (kPa) | 70 |
| FAN | |
| Diameter (mm) | 500 |
| Number of blades | 7 |
| Material | Plastic |
| Type | Blower type |
| COOLANT | |
| Cooling package maximum operating temperature (°C) | ≤104 |
| Total system with radiator capacity (L) | 31 |
| Total system without radiator capacity (L) | 12 |
| Thermostat type | Wax Capsule |
| Thermostat opens at... (°C) | 82 |
| Thermostat fully open at... (°C) | ≤ 95 |
| Minimum temperature to engine (°C) | -25 |
| Maximum static pressure head at pump (meters at 1500rpm) | 14 |
| Cooling fan flow rate (m ³ /s) | 2.3 |

Recommended coolant:

50% ethylene glycol with a corrosion inhibitor (BS 6580 : 1992 or ASTM D3306-89 or AS2108) and 50% de-ionised water

ENGINE LUBRICATION SYSTEM

| Parameter | Engine Model |
|---|------------------------------|
| | LP443G3 |
| Lubricating method | Pressure feed and splash |
| Sump capacity including filter(L) | 13 |
| Service Interval (hr) | 500 |
| Oil filter type | Spin-on full flow oil filter |
| Oil Specification | API CH-4 |
| | ACEA E5 |
| Oil consumption % SFC | ≤ 0.1% |
| Oil consumption, 100% (l/hr) | 0.06 |
| Lubricating oil temperature (°C) | 90-105 |
| Maximum oil temperature (°C) | 108 |
| Maximum operation angle of engine (degrees) | 25° |

APPROXIMATE FUEL CONSUMPTION

| | | Engine model | |
|-----------------|------|--------------|------|
| Speed, r/min | Load | LP443G3 | |
| | | g/kWh | l/h |
| 1500 | 110% | 212 | 21.8 |
| | 100% | 209 | 19.5 |
| | 75% | 204 | 14.3 |
| | 50% | 212 | 9.9 |
| | 25% | 236 | 5.5 |

*Diesel fuel density 0.835 g/cm³

* The power output of the engine is calculated according to NPT conditions.

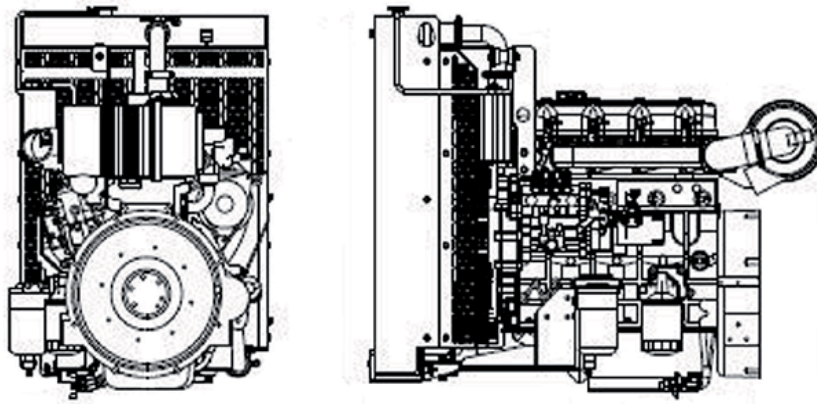
* For non-standard site conditions not listed, reference should be made to BS, ISO and DIN standards.

* Inquiry should always be made to the technical department of the respective manufacturer if the attitude is above 3000m.

ENGINE NOISE LEVELS

| | |
|----------------------------|--------------|
| Parameter | Engine Model |
| | LP443G3 |
| Sound pressure level at 1m | ≤95 dB(A) |

APPROXIMATE DIMENSIONS AND WEIGHT



| | | |
|--------------|----|---------|
| Engine model | | LP443G3 |
| Dry weight | kg | 486 |
| | lb | 1069 |
| Length (A) | mm | 1230 |
| | in | 48.0 |
| Width (B) | mm | 774 |
| | in | 30.2 |
| Height (C) | mm | 1079 |
| | in | 42.1 |

TYPICAL PACKING CASE DIMENSIONS

| Engine packing case dimensions | Radiator packing case dimensions | Container quantities (Engine with Radiator) | | |
|--------------------------------|----------------------------------|--|---------|---------|
| L*W*H(mm) | W*D*H(mm) | 20FT | 40FT | 40HQ |
| 1100*790*1165 | 750*465*1038 | 20 sets | 42 sets | 42 sets |



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