

Mercury Max Series Engines

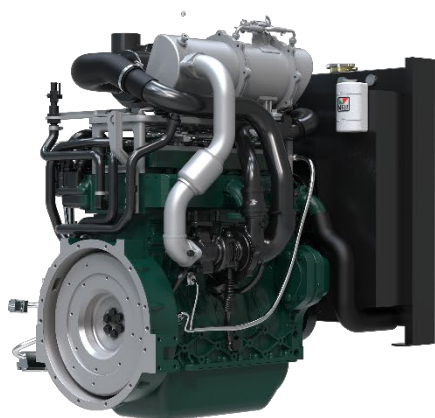


LP430EVG2

LP430EVG2 Engine

fixed speeds
1500 r/min

49 - 54 kWm | 65.7 – 72.4 bhp



OVER VIEW

The engine is specifically designed for fixed speed power generation applications. Suitable for use in EU STAGE V emissions territories. Designed and manufactured to provide durable, reliable performance with ease of maintenance in mind. 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).

Note:

For further information and applications approval please contact Lister Petter.

* Optional items standard on most builds.

BASIC ENGINE CHARACTERISTICS

- Direct fuel injection
- 4 cylinders
- Liquid cooled
- Turbocharged induction system

DESIGN FEATURES AND EQUIPMENT

- SAE Flywheel connection
- SAE compliant flywheel housing
- Radiator and fan guard
- Cast-iron structural crankcase
- Self-vent fuel injection system
- HPCR fuel injection equipment
- ECU governing
- Cyclonic heavy duty airfiltration
- Oil pressure protection switch
- Coolant temperature protection switch
- Spin-on full flow lubricating oil filter
- High flow fuel filter
- Operators handbook

OPTIONAL ITEMS

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

POWER OUTPUTS | STAGE V EMISSIONS RATINGS

Model	Speed, r/min	Power	Gross ²		Net		Standard Generator Output*		
			kW	bhp	kW	bhp	Power	kVA	kWe
LP430EVG2	1500	Prime	49	65.7	47	63.0	PRP	50	40
		Standby	54	72.4	52	69.7	ESP	55	44

*The suggested continuous power is 80% prime power.

TECHNICAL DATA

Engine fixed speed 1500r/min	LP430EVG2	
Type of fuel injection	Direct	
Number of cylinders	4	
Aspiration	Turbocharged	
Direction of rotation (flywheel end)	Anti clockwise	
Nominal cylinder bore	mm	94
	in	3.7
Stroke	mm	107
	in	4.2
Total cylinder capacity	litre	3.0
	in ³	183.1
Compression ratio	17.5:1	
Firing order (number 1 cylinder is at the gear end)	1-3-4-2	
Alternator	14V×70A	
Starter motor	12V×2.5kW	
Fuel injection pump	HPCR fuel injection	
Speed governor	ECU	
Speed regulation class	ISO 8528 G3	
Fly wheel housing	SAE 4	
Fly wheel	SAE J620 Size 7.5"	

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).

Rating definition has basis in ISO 3046 & 8258-1, the tolerance of engine power is ±3%

Standby power rating is the supply of max emergency power under running variable load for the duration of none availability of the Mains, NO OVERLOAD capacity is adopted at this rating, furthermore, this published standby rating can be operated 500 hour/ year.

Prime Power rating is available for unlimited hours per year with variable load, of which are average engine load factor is 80% of the published prime power rating, incorporation of a 10% overload for 1 hour in every 12 hours of operation is permitted.

Base load is available for continuous published baseload power.

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
	LP430EVG2
EXHAUST	
Maximum allowable back-pressure (kPa)	≤ 20
Exhaust gas flow, (m ³ /min)	7.2
Emissions level	STAGE V (with EGR+DOC+DPF)
Exhaust gas temperature, continuous (°C)	500
Exhaust gas temperature, overload (°C)	550
Exhaust pipe diameter -recommended	63mm
INTAKE	
Maximum allowable inlet restriction (kPa)	≤ 4
Combustion air flow(m ³ /min)	3

ENGINE COOLANT SYSTEM | 1500 RPM, FIXED SPEED

Parameter	Engine Model
	LP430EVG2
Cooling method	Liquid cooled (belt driven water pump)
RADIATOR	
Material	Aluminium
Radiator face area (m ²)	16.3
Pressure cap setting (kPa)	90
FAN	
Diameter (mm)	490
Number of blades	7
Material	Plastic
Type	Blower type
COOLANT	
Cooling package maximum operating temperature (°C)	≤100
Total system with radiator capacity (L)	11.4
Total system without radiator capacity (L)	4.8
Thermostat type	Wax Capsule
Thermostat opens at... (°C)	80
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 /sec)	2.5

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

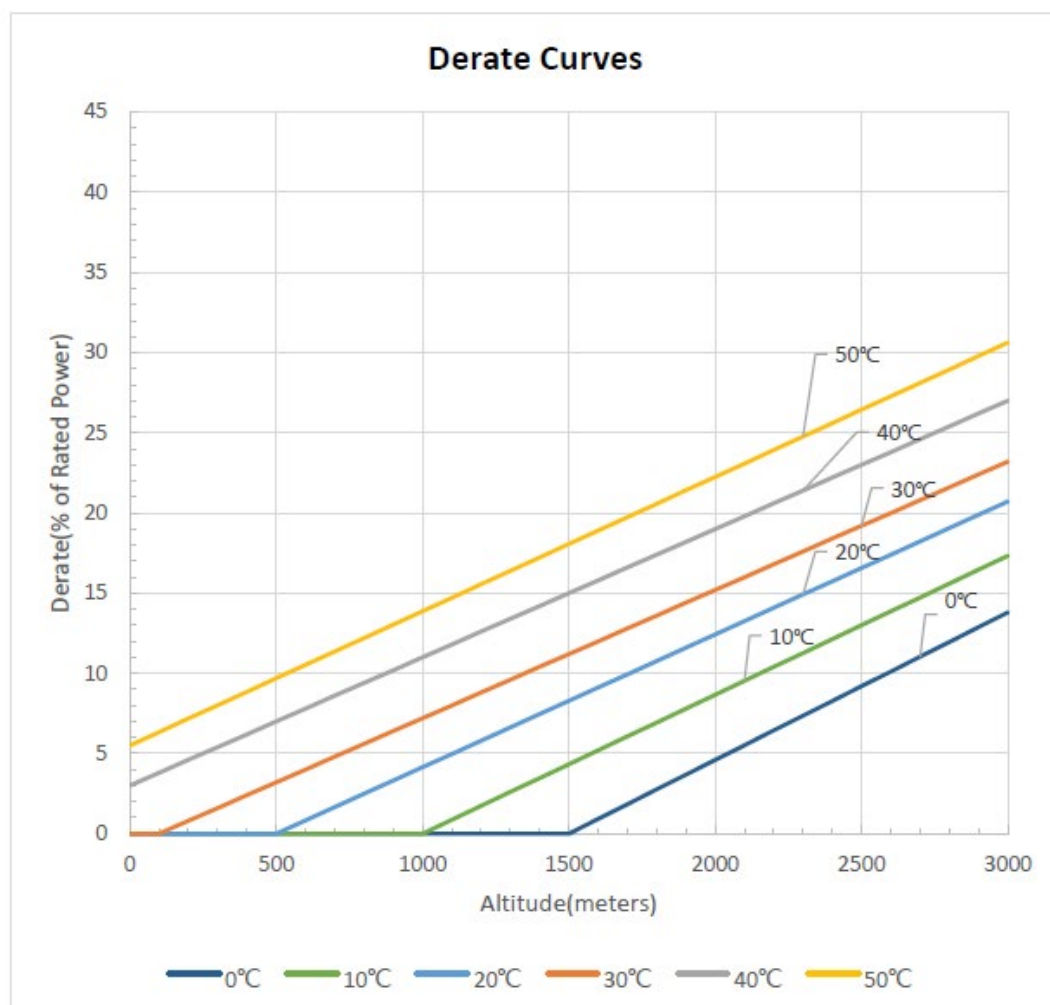
Parameter	Engine Model
	LP430EVG2
Lubricating method	Pressure feed and splash
Sump capacity including filter (L)	7
Service Interval (hr)	250
Oil filter type	Spin-on full flow oil filter
Oil Specification	API CH-4
	ACEA E5
Oil consumption % SFC	≤ 0.1%
Oil consumption, 100% (l/hr)	0.006
Lubricating oil temperature (°C)	90-105
Maximum oil temperature (°C)	120
Maximum operation angle of engine (degrees)	35°

APPROXIMATE FUEL CONSUMPTION

Speed, r/min	Load	Engine model	
		LP430EVG2	
		g/kWh	l/h
1500	110%	220	14.20
	100%	217	12.73
	75%	221	9.73
	50%	228	6.69
	25%	258	3.79

*Diesel fuel density 0.835 g/ cm³

POWER DERATING

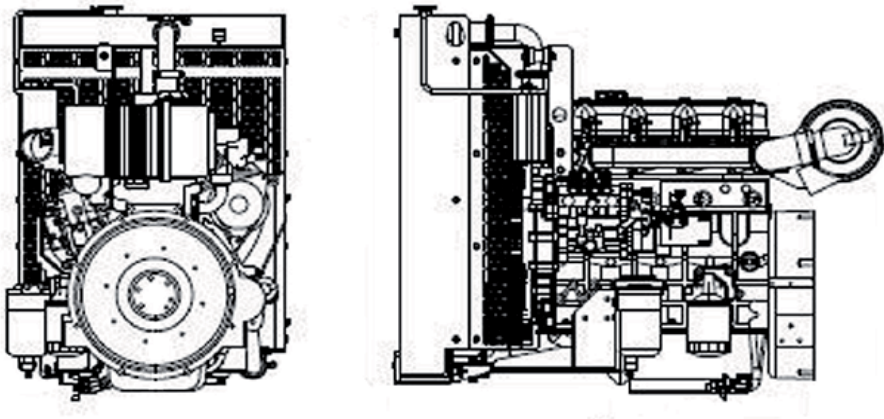


* Estimating the effect of altitude & temperature for the engine output relative to ISO reference condition at sea level.

* Inquiry should always be made to Lister Petter technical department if the altitude is above 3000m.

ENGINE NOISE LEVELS	
Parameter	Engine Model
	LP430EVG2
Sound pressure level at 1m	≤95 dB(A)

APPROXIMATE DIMENSIONS AND WEIGHT



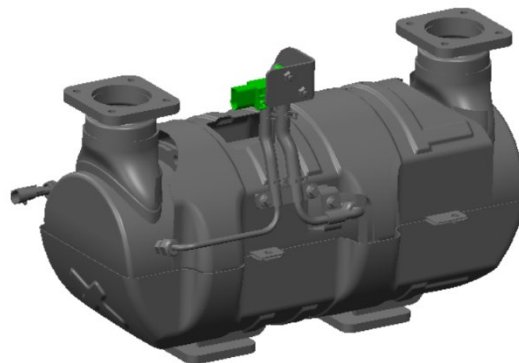
Engine model		LP430EVG2
Dry weight	kg	300
	lb	660
Length (A)	mm	1152
	in	44.9
Width (B)	mm	662
	in	25.8
Height (C)	mm	918
	in	35.8

AFTERTREATMENT SYSTEM

Aftertreatment Size and weight

Length	598mm
Width	242mm
Height	294mm
Diameter of Can	155mm
Weight	13.6kg

* Final weight and dimensions will depend on completed specification



Aftertreatment

- DOC - Diesel Oxidation Catalyst.
- DPF - Diesel Particulate Filter and regeneration system supplied, with a range of inlet and output options.

Customer Benefits

- Exhaust purification catalytic converter can effectively remove carbon monoxide (CO), hydrocarbons (THC) and particulate matter (PM) in the diesel engine exhaust, and reduce it to safe carbon dioxide and water into the atmosphere.
- DPF is a product that can effectively remove black smoke particles from diesel engine exhaust gas.
- DPF has a strong ability to catch particles, at the same time has high heat resistance, good heat conductivity, small exhaust resistance, high filtration efficiency, strong pressure resistance and other characteristics, its filtration efficiency of PM particles can reach more than 90%.
- The catalytic system based on DOC+DPF is a diesel engine exhaust purifier that can realize passive regeneration or active regeneration of particulate matter without additives.



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