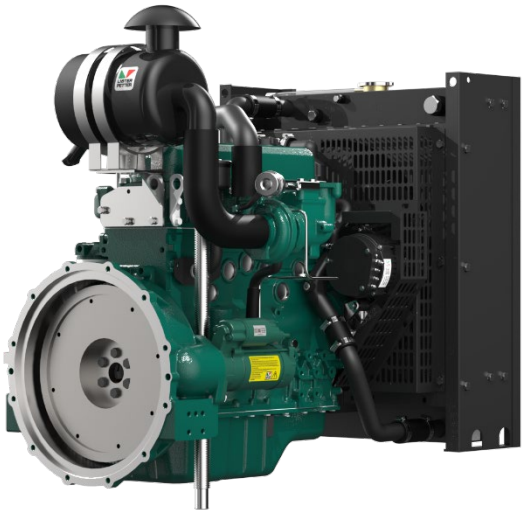
Mercury Max Series Engines

LP435EG2

LP435EG2 Engine

fixed speeds
1500 r/min

74 – 81 kWm | 99.2 – 108.5 bhp



OVER VIEW

The engine is specifically designed as a Power generating engine suitable for use in stage III emissions territories. It is durable, reliable and easy to maintain. 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 flywheel end
- 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
- flywheel and gear ring
- cyclonic heavy duty air filtration
- oil pressure protection switch
- coolant temperature protection switch
- spin-on full flow lubricating oil filter
- fuel filter
- intake and exhaust manifolds
- 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 III EMISSIONS RATINGS

Model	Speed, r/min	Power	Gross[2]		Net		Standard Generator Output*		
			kW	bhp	kW	bhp	Power	kVA	kWe
LP435EG2	1500	Prime	74	99.2	72	96.5	PRP	80	64
		Standby	81	108.5	79	105.9	ESP	88	70

*The suggested continuous power is 80% prime power.

TECHNICAL DATA

Engine fixed speed 1500r/min		LP435EG2
Type of fuel injection		Direct
Number of cylinders		4
Aspiration		Turbocharged & intercooled
Direction of rotation (flywheel end)		Anti clockwise
Nominal cylinder bore	mm	98
	in	3.86
Stoke	mm	115
	in	4.5
Total cylinder capacity	litre	3.5
	in^3	213.6
Compression ratio		18:1
Firing order (number 1 cylinder is at the gear end)		1-3-4-2
Alternator		14V×70A
Starter motor		12V×3.8kW
Fuel injection pump		HPCR fuel injection
Speed governor		ECU
Speed regulation class		ISO 8528 G3
Fly wheel housing		SAE 3
Fly wheel		SAE J620 Size 11.5"

EXHAUST AND INTAKE SYSTEM | 1500 RPM FIXED SPEED ENGINES

Parameter	Engine Model
	LP435EG2
EXHAUST	
Maximum allowable back-pressure (kPa)	≤ 10
Exhaust gas flow, (m^3/min)	24.6
Emissions level	Stage III
Exhaust gas temperature, continuous (°C)	500
Exhaust gas temperature, overload (°C)	550
Exhaust pipe diameter -recommended	63.5mm
INTAKE	
Maximum allowable inlet restriction (kPa)	≤ 4
Combustion air flow(m^3/min)	9.1

RATING DEFINITIONS TO ISO 3046

ISO Standard Conditions

Barometric pressure 100 kPa
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.

ENGINE COOLANT SYSTEM | 1500 RPM, FIXED SPEED	
Parameter	Engine Model
	LP435EG2
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	Pusher
COOLANT	
Cooling package maximum operating temperature (°C)	≤110
Total system with radiator capacity (L)	14.25
Total system without radiator capacity (L)	5.8
Thermostat type	Wax Capsule
Thermostat opens at… (°C)	72
Thermostat fully open at… (°C)	82
Minimum temperature to engine (°C)	-25
Maximum static pressure head at pump (meters at 1800 rpm)	14
Cooling fan flow rate (l/sec)	75

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

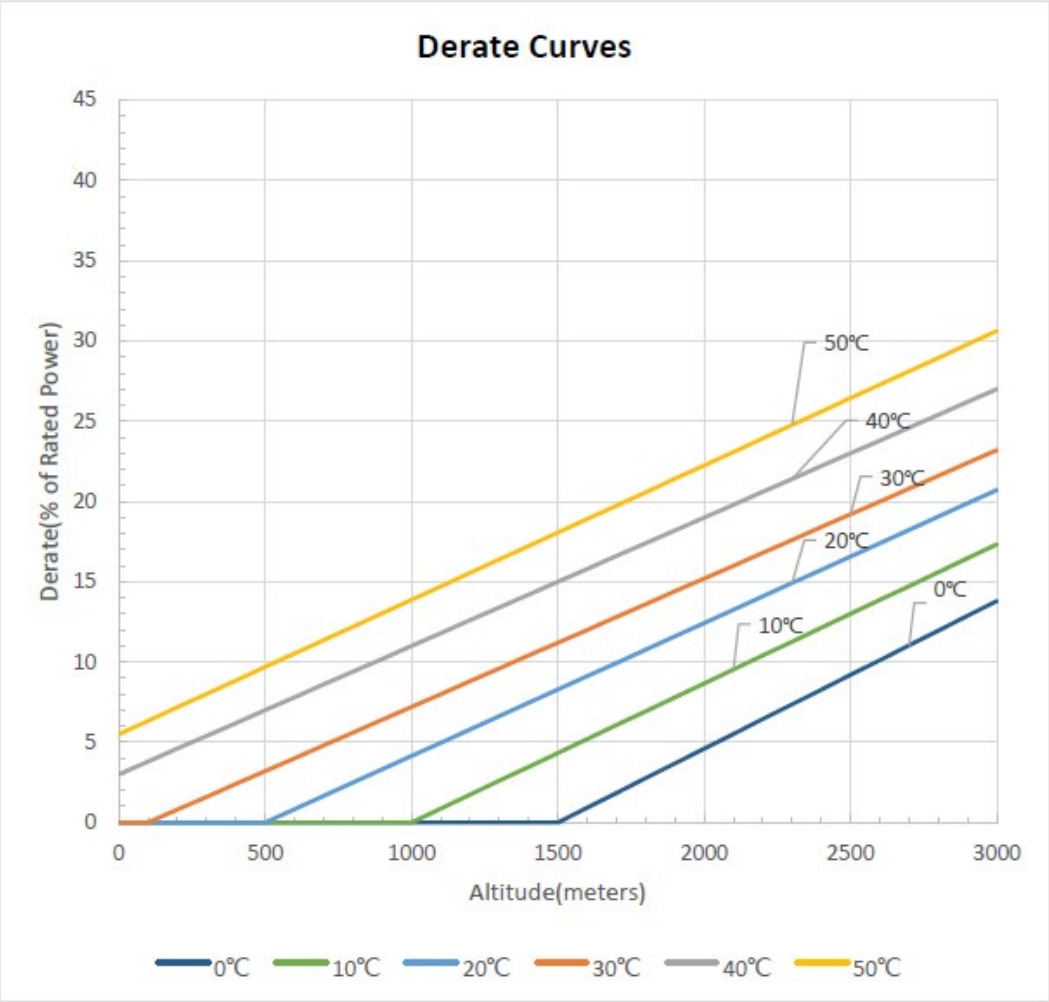
ENGINE LUBRICATION SYSTEM	
Parameter	Engine Model
	LP435EG2
Lubricating method	Pressure feed and splash
Sump capacity including filter (L)	8.0
Service Interval (hr)	500
Oil filter type	Spin-on full flow oil filter
Oil Specification	API CH-4
	ACEA E5
Oil consumption % SFC	≤ 0.1%
Oil consumption, 100% (l/hr)	0.02
Lubricating oil temperature (°C)	90-105
Maximum oil temperature (°C)	108
Maximum operation angle of engine (degrees)	10°

APPROXIMATE FUEL CONSUMPTION

Speed, r/min	Load	Engine model	
		LP435EG2	
		g/kWh	l/h
1500	110%	225	21.93
	100%	215	19.05
	75%	218	14.49
	50%	228	10.10
	25%	235	5.21

*Diesel fuel density 0.835 g/ cm³

POWER DERATING

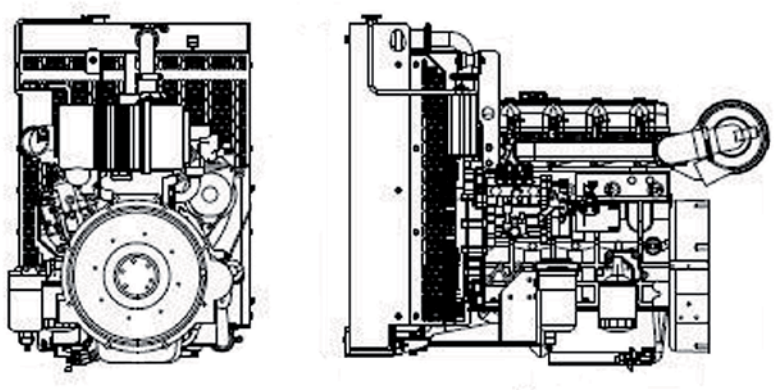


* Estimating the effect of altitude & temperature for the engine output relative to ISO reference condition at sea level.
* Inquiry should always be made to the technical department of the respective manufacturer if the attitude is above 3000m.

ENGINE NOISE LEVELS

Parameter	Engine Model
	LP435EG2
Sound pressure level at 1m	≤100 dB(A)

APPROXIMATE DIMENSIONS AND WEIGHT



Engine model		LP435EG2
Dry weight	kg	324
	lb	713
Length (A)	mm	1075
	in	41.9
Width (B)	mm	670
	in	26.1
Height (C)	mm	930
	in	36.3

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
1000*715*1123	760*395*980	24 sets	52 sets	52 sets

Head Office
Lister Petter Engine Company Limited

Rutland House, Minerva Business Park,
Lynch Wood, Peterborough, PE2 6PZ.

Distributor Address

enquiry@listerpetter.com
www.listerpetter.com