MAN Energy Solutions
Future in the making

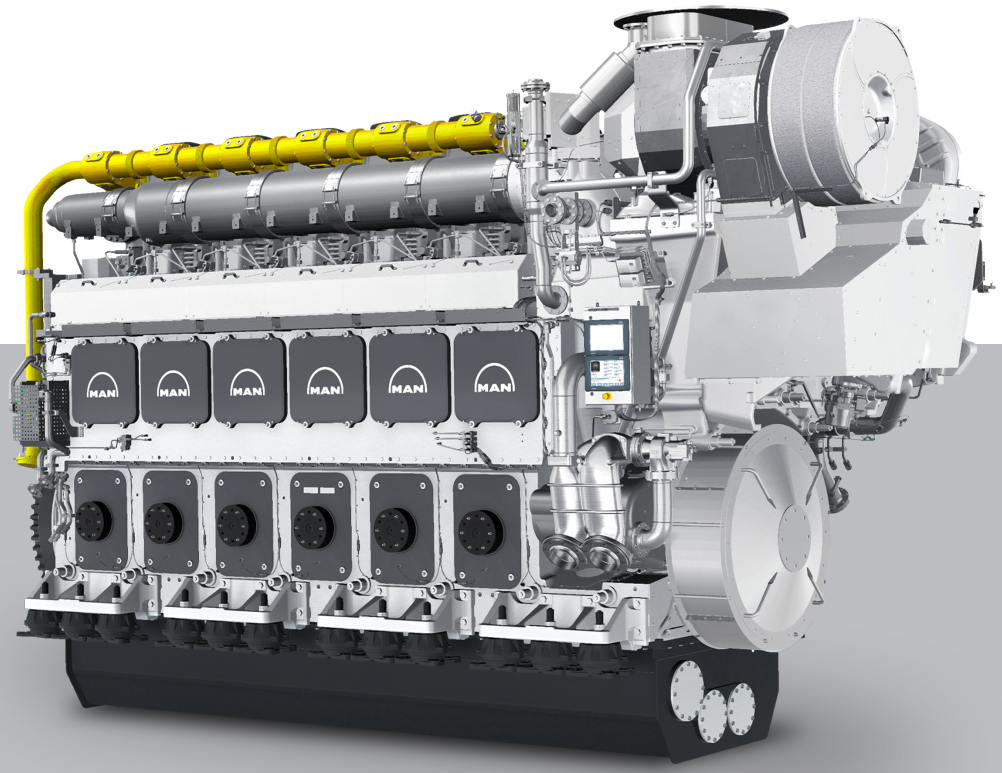
MAN L49/60DF

Propulsion

The MAN 49/60DF is future-proof in multiple ways. Its benchmark fuel efficiency guarantees competitive vessel operation. The very low level of methane emissions ensures long-term CO_2 equivalent emission compliance. A modern engine platform with next-generation engine automation system can harness the benefits of a digitized marine operation. For this platform MAN Energy Solutions plans upgrades to future fuels.

Benefits at a glance

- Benchmark efficiency
- Very low methane emissions
- Robust performance in gas mode based on next-generation combustion control ACC 2.0
- Next-generation engine automation ready for future tasks such as cybersecurity
- Compact design by increased power density



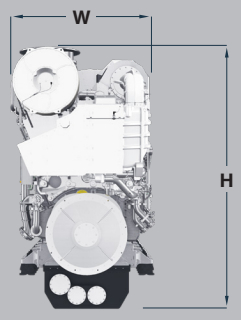
Four-stroke marine systems

MAN L49/60DF

Propulsion

Dimensions

Cyl. No.		6L	7L	8L	9L	10L
L	mm	8,518	9,338	10,399	11,219	12,039
L_1*	mm	7,238	8,058	8,878	9,698	10,518
W	mm	3,134	3,134	3,134	3,154	3,154
H	mm	5,426	5,426	5,426	5,582	5,582
Dry mass	t	130	145	165	180	195

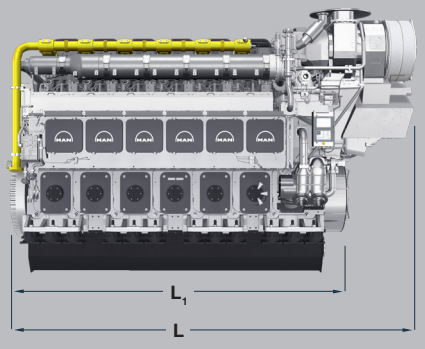


Output

Speed	rpm	600
mep	bar	23
MAN 6L49/60DF	kW	7,800
MAN 7L49/60DF	kW	9,100
MAN 8L49/60DF	kW	10,400
MAN 9L49/60DF	kW	11,700
MAN 10L49/60DF	kW	13,000

*L1, flange of flywheel to front end of engine
Dimensions without flywheel protection cover
Minimum centerline distance for twin-engine installation: 3,700 mm

Last updated October 2023



General

- Engine cycle: four-stroke
- No. of cylinders: 6L, 7L, 8L, 9L, 10L
- Bore: 490 mm – Stroke: 600 mm
- Swept volume per cyl: 113.14 dm^3

Fuel consumption at 85 % MCR*

- Liquid fuel mode: 171.0 g/kWh
- Gas mode: 6,990 kJ/kWh

Cylinder output (MCR)

- At 600 rpm: 1,300 kW
- Power-to-weight ratio: 15.0 – 16.7 kg/kW

Compliance with emission regulations

- Gas mode: IMO Tier III
- Liquid mode: IMO Tier II, IMO Tier III with MAN SCR-LP
- Gas and liquid mode: Fuel EU maritime

Main features

Turbocharging system
- High efficiency MAN TCT and MAN TCX two-stage turbocharging system

Engine automation and control
- Next-generation in-house developed safety and control system MAN SaCoS 5000
- Next-generation combustion control

Fuel system
- Cylinder individual solenoid gas admission valves for gas injection into charge air
- Next-generation MAN Common Rail injection system for liquid main fuel or HFO, developed in-house
- Common rail pilot fuel oil system

Cooling system
- 2-string high and low temperature cooling water systems or alternatively a combined cooling water system

Starting system
- Starting air valves within cylinder heads

Engine mounting
- Resilient or rigid mounting

Optional equipment

- Additional insulation for maximum surface temperature of 110 °C
- High levels of cybersecurity compliance

MCR = Maximum continuous rating
SCR = Selective catalytic reduction
* According to IMO E2 and D2 test cycle, higher values for 8L, including pilot fuel oil

MAN Energy Solutions
86224 Augsburg, Germany
P + 49 821 322-0
F + 49 821 322-3382
info@man-es.com
www.man-es.com