

Wärtsilä 34DF



The Wärtsilä 34DF is based on the well proven and reliable Wärtsilä 32 diesel engine introduced in the mid-1990s. The fuel flexibility of the Wärtsilä 34DF enables optimisation for constant speed generating sets for main engine applications, as well as variable speed mechanical drives.

The Wärtsilä dual fuel engine capability enables ships to be operated on either conventional liquid marine fuels (LFO, HFO or liquid bio fuel) or LNG. The switch between fuels can be made seamlessly without loss of power or speed. Such fuel flexibility enables compliance with emission regulations in controlled areas, while giving operators the option of determining the fuel according to cost and availability.

Typical applications

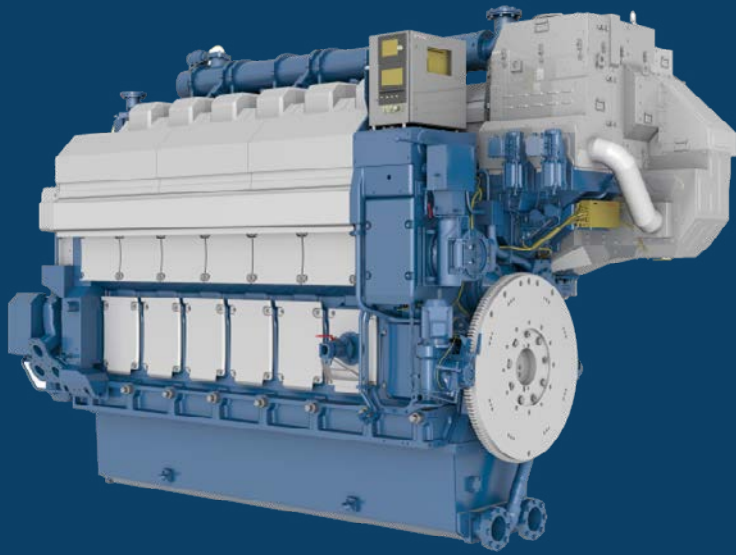
The Wärtsilä 34DF is the ideal choice for main power source in a vast range of applications, for instance offshore support vessels and platforms, small LNG carriers, ferries & tugs.

Besides serving as mechanical-drive or diesel/gas-electric main engine, the Wärtsilä 34DF is also a perfect fit as auxiliary generating set installed alongside Wärtsilä 46DF or 50DF main propulsion machinery, thus completing the multi-fuel engine room concept.

Key benefits

- Flexibility to operate on natural gas and liquid fuels (LFO and HFO)
- High efficiency
- Low emissions, due to clean fuel and lean burn combustion
- Low gas pressure
- Pilot fuel for ignition of gas
- Operation in arctic conditions
- Advanced control.
- Gas mode operation, 0-100%





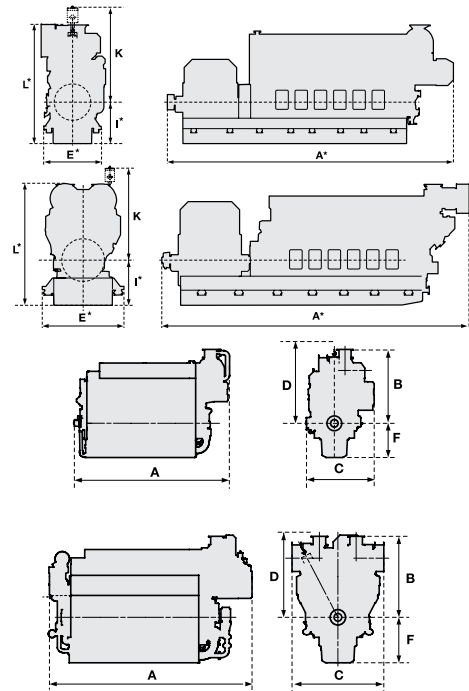
Wärtsilä 34DF		IMO Tier III, EPA T3	
Cylinder bore	340 mm	Fuel specification: Fuel oil	
Piston stroke	400 mm	700 cSt/50°C	7200 sR1/100°F
Cylinder output	480, 500 kW/cyl	ISO 8217, category ISO-F-DMX, DMA and DMB	
Speed	720, 750 rpm	BSEC 7590 kJ/kWh	
Mean effective pressure	22.0 bar	BSGC 7490 kJ/kWh	
Piston speed	9.6, 10.0 m/s		
Generator voltage	0.4–13.8 kV		
Generator efficiency	0.95–0.97		

Engine type	60 Hz		50 Hz	
	480 kW/cyl, 720 rpm		500 kW/cyl, 750 rpm	
	Engine kW	Gen. kW	Engine kW	Gen. kW
6L34DF	2 880	2 770	3 000	2 890
8L34DF	3 840	3 690	4 000	3 840
9L34DF	4 320	4 150	4 500	4 320
12V34DF	5 760	5 530	6 000	5 770
16V34DF	7 680	7 370	8 000	7 680

Engine dimensions (mm) and weights (tonnes)						
Engine type	A	B	C	D	F	Weight
6L34DF	5 335	2 550	2 380	2 345	1 155	35
8L34DF	6 315	2 550	2 295	2 345	1 155	44
9L34DF	6 869	2 550	2 610	2 345	1 155	49
12V34DF	6 865	2 435	2 900	2 120	1 210	61
16V34DF	7 905	2 570	3 325	2 120	1 210	77

Genset dimensions (mm) and weights (tonnes)						
Engine type	A*	E*	I*	K	L*	Weight
6L34DF	8 700	2 290	1 450	2 345	4 000	57
8L34DF	10 410	2 690	1 630	2 345	4 180	76
9L34DF	10 475	2 890	1 630	2 345	4 180	87
12V34DF	10 075	3 060	1 700	2 120	4 365	96
16V34DF	11 175	3 060	1 850	2 120	4 515	121

* Dependent on generator type.
Generator output based on a generator efficiency of 96%.



Operational features

The Wärtsilä 34DF is manufactured in configurations from 6L to 16V, giving 500 kW per cylinder and a total maximum mechanical output of 8000 kW. The engine speed is 750 rpm.

With the current output range from 2610 kW to 8000 kW and three in-line (6, 8 & 9L) and two V-cylinder (12 & 16V) configurations, it covers the mid part of the Wärtsilä 4-stroke engine portfolio for multi-fuel engines aimed at the main (CPP) and diesel electric propulsion as well as auxiliary applications.

Environmental compliance

The Wärtsilä 34DF engines are Tier 2 compliant in diesel mode and Tier 3 compliant in gas mode. The 34DF can also be delivered as Wärtsilä NOR compatible.

The engine operates efficiently and economically on low sulphur fuels (<0.1% S), making it suitable for operation in emission-controlled areas.

The Wärtsilä 34DF has also obtained certification of emission standard compliance from the United States Environmental Protection Agency (EPA), which further endorses the environmental compliance of this engine.

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