

WÄRTSILÄ 31DF

Multi-fuel engine generating set

The efficient Wärtsilä 31DF, is a four-stroke multi-fuel engine generating set. It's record-breaking efficiency and fuel adaptability has been designed for applications where energy security is significantly important and where gas network is still forthcoming. Its modular design ensures easy adaption for the engine to run on renewable fuels.

We help our customers in decarbonisation by developing market-leading technologies such as flexible power plants that can be delivered as engineered equipment (EEQ) or as engineering, procurement and construction (EPC). With our full lifecycle support we ensure guaranteed performance of the plant.

Key benefits

- World-class open-cycle efficiency
- Ensures energy security in operation through fuel flexibility and seamless switching between fuels
- Can be easily adapted to run on synthetic renewable fuels
- Supports off-grid operation and provides fast black start capabilities
- Synchronises with the grid within 30 seconds from start command
- Unparalleled load following capabilities and high part load efficiencies
- Optimised performance and efficiency supported by Wärtsilä Lifecycle solutions

50.2
% electrical efficiency

2
minutes to full load

Over
45
million running hours
with Wärtsilä dual fuel
technology

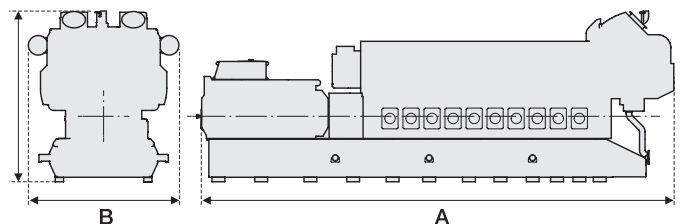
Main technical data

Engine generating set				
Cylinder configurations	20 V			
Cylinder bore	310 mm			
Piston stroke	430 mm			
Engine speed	750 rpm (50 Hz), 720 rpm (60 Hz)			
Performance ¹				
	WÄRTSILÄ 31DF, GAS		WÄRTSILÄ 31DF, LFO	
Rated electrical power (kW)	11 779 (50 Hz)	11 377 (60 Hz)	11 779 (50 Hz)	11 377 (60 Hz)
Electrical efficiency (%)	50.2 (50 Hz)	50.2 (60 Hz)	47.9 (50 Hz)	47.9 (60 Hz)
Heat rate (kJ/kWh)	7 170 (50 Hz)	7 175 (60 Hz)	7 510 (50Hz)	7 515 (60 Hz)
Loading and unloading				
	Connected to grid		Full load	
Regular start time (min:sec)	00:30		< 5:00	
Fast start time (min:sec)	00:30		< 2:00	
Shut-down time (min)	< 2			
Ramp rate (hot, load /min)	> 100%			
Minimum load				
Unit level	20%			
Plant level	Equal to minimum load of one unit			

Maximum transportation dimensions (mm) and weight (tonnes) ²				
Genset type	Length (A)	Width (B)	Height (C)	Dry weight
20V31SG	14 412	3 893	5 090	182

¹ Rated electrical power and electrical efficiencies are given at generator terminals at 100kPa ambient pressure, 25°C suction air temperature and 30% relative humidity, and without engine driven pumps. Power factor 1.0 (site). NOx emission level 90ppm @15% O2 dry. Electrical efficiency and heat rate with 5% tolerance according to ISO 3046-1. Gas LHV >28MJ/Nm3. Gas methane number >80. Site conditions, fuel and applicable emission limits may have an impact on performance figures. Please contact Wärtsilä for project-specific performance data.

² There are a number of dismantling options available for transportation of the generator set. These include different options for reduced weight and height. Please contact Wärtsilä for further information.



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