

## WÄRTSILÄ 31DF MULTI-FUEL ENGINE GENERATING SET

The most 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 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 efficiency
- Optimised performance and efficiency supported by Wärtsilä Lifecycle solutions

**50.2**

% Electrical efficiency

**2**

Minutes to full load

Over

**45**

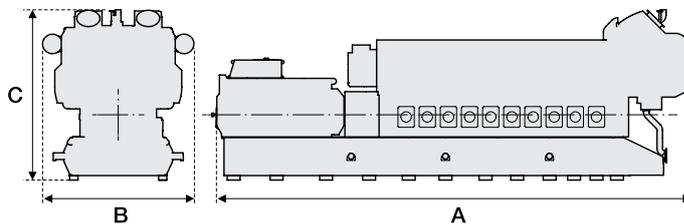
million running hours  
with Wärtsilä dual fuel  
technology

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 <sup>1</sup>		
	WÄRTSILÄ 31DF, GAS	WÄRTSILÄ 31DF, LFO
Rated electrical power (kW)	10 777 (50 Hz) 11 377 (60 Hz)	10 777 (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 (50 Hz) 7 515 (60 Hz)
Loading and unloading		
	Connected to grid	Full load
Regular start time (min:sec)	00:30	< 5
Fast start time (min:sec)	00:30	< 2
Stop time (min)	< 2	
Ramp rate (hot, load/min)	> 100%	
Minimum Load		
Unit level	20%	
Plant level	1%	

Maximum transportation dimensions (mm) and weights (tonnes) <sup>2</sup>				
Genset type	Length (A)	Length (B)	Height (C)	Dry weight
12V31DF	11 126	3 785	4 985	127
16V31DF	12 706	3 893	5 034	150
20V31DF	14 412	3 893	5 090	182

<sup>1</sup> 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 with 5% tolerance. 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.

<sup>2</sup> There are different dismantling options available to reduce weight and height for transporting. Please contact Wärtsilä for further information.



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