

## WÄRTSILÄ 50DF

### Multi-fuel engine generating set

The Wärtsilä 50DF is a four-stroke multi-fuel engine generating set. It allows instant switching to alternative fuels, should price instability or delivery challenges affect the use of the primary fuel. It operates on the lean burn principle, which reduces peak temperatures and lowers NO<sub>x</sub> emissions considerably. High efficiency in a small footprint combined with great reliability and flexibility makes this solution ideal for various applications.

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

#### Key benefits

- Ensures energy security in operation through fuel flexibility and seamless switching between fuels
- Can operate on natural gas or any liquid fuel, including HFO
- Low emissions in gas mode meets even the most stringent emission limits
- Robust, reliable genset, proven in the most challenging environments
- Fast-starting capability which enables rapid response to fluctuations
- Optimised performance and efficiency supported by Wärtsilä Lifecycle solutions

30

seconds connection  
to grid

49.4

% electrical efficiency

>5 700

MW installed capacity

# Main technical data

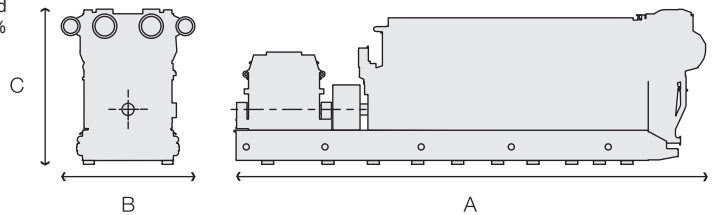
Engine generating set				
Cylinder configurations	18V			
Cylinder bore	500 mm			
Piston stroke	580 mm			
Engine speed	500 rpm (50 Hz), 514 rpm (60 Hz)			
Performance <sup>1</sup>				
	WÄRTSILÄ 18V50DF, GAS		WÄRTSILÄ 18V50DF, LFO	
Rated electrical power (kW)	17 635 (50 Hz)	18 190 (60 Hz)	17 635 (50 Hz)	18 190 (60 Hz)
Electrical efficiency (%)	49.4 (50 Hz)	49.3 (60 Hz)	48.2 (50 Hz)	47.7 (60 Hz)
Heat rate (kJ/kWh)	7 285 (50 Hz)	7 305 (60 Hz)	7 474 (50 Hz)	7 545 (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)	1			
Ramp rate (hot, load /min)	> 100%			
Minimum load				
Unit level	10%			
Plant level	Equal to minimum load of one unit			

## Maximum transportation dimensions (mm) and weight (tonnes) <sup>2</sup>

Genset type	Length (A)	Width (B)	Height (C)	Dry weight
18V50DF	18 747	5 543	6 257	377

<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 and heat rate with 5% tolerance. Gas LHV >28MJ/Nm<sup>3</sup>. 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 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.



**Disclaimer** The information contained herein is provided for informational purposes only and may not be incorporated, in whole or in part, into any agreement or proposal. No representation of any kind is made in respect of any information contained herein and Wärtsilä expressly disclaims any responsibility for, and does not guarantee, the correctness or the completeness of the information. The calculations and assumptions included in the information do not necessarily take into account all the factors that could be relevant in a particular case. Information herein shall not be construed as a guarantee or warranty of the performance of any Wärtsilä technology, equipment or installation.

The information in this document is subject to change without notice and the given data does not carry any contractual value. Wärtsilä assumes no responsibility for any errors that may appear in this document.

WÄRTSILÄ® is a registered trademark. Copyright © 2023 Wärtsilä Corporation.

[www.wartsila.com/energy](http://www.wartsila.com/energy)

