

## Wärtsilä 50DF



The Wärtsilä 50DF multi-fuel engine is the ultimate ‘fuel flexibility’ solution. This 4-stroke engine generating set runs on gas and liquid fuels, and can switch over from gas to liquid fuel and vice versa seamlessly during engine operation. The Wärtsilä 50DF is available in an 18V cylinder configuration, with a power output ranging between 16.7 and 17.2 MW at 500 and 514 rpm for 50 or 60 Hz applications.

- Fast-starting capability which enables rapid response to fluctuations inherent to renewable generation
- Proven and reliable heavy fuel technology
- Easy and cost-effective installation
- Low exhaust gas emissions
- Fuel economy over the entire engine operation range
- Embedded automation system
- Optimised performance and efficiency throughout the lifecycle with Wärtsilä’s lifecycle solutions
  - Technical support and expertise services
  - Parts maintenance and repair services



## Main technical data

Engine generating set, 50 & 60 Hz	
Cylinder configurations	18V
Cylinder bore	500 mm
Piston stroke	580 mm
Engine speed	500 rpm (50 Hz), 514 rpm (60 Hz)
Mean piston speed	9.7 m/s (50 Hz), 10 m/s (60 Hz)

### Rated electrical power (kW)

Genset type	50 Hz	60 Hz
18V50DF	16 741	17 217

### Electrical efficiency / heat rate 50 Hz

#### 5% tolerance, ISO conditions

Genset type	Gas	HFO	HFO, LFO
18V50DF	49.4% / 7284 kJ/kWh	47.5% / 7587 kJ/kWh	48.0% / 7496 kJ/kWh

#### 0% tolerance, ISO conditions

Genset type	Gas	HFO	HFO, LFO
18V50DF	47.0% / 7656 kJ/kWh	45.2% / 7973 kJ/kWh	45.7% / 7878 kJ/kWh

### Electrical efficiency / heat rate 60 Hz

#### 5% tolerance, ISO conditions

Genset type	Gas	HFO	HFO, LFO
18V50DF	49.5% / 7269 kJ/kWh	47.2% / 7633 kJ/kWh	47.7% / 7542 kJ/kWh

#### 0% tolerance, ISO conditions

Genset type	Gas	HFO	HFO, LFO
18V50DF	47.1% / 7640 kJ/kWh	44.9% / 8022 kJ/kWh	45.4% / 7926 kJ/kWh

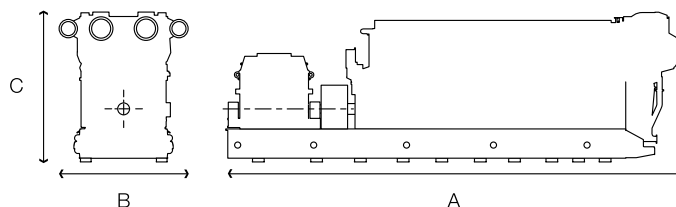
### Dimensions (mm) and weights (tonnes)<sup>1</sup>

Genset type <sup>2</sup>	Length (A)	Width (B)	Height (C)	Dry weight <sup>3</sup> +/- 5%
18V50DF	18 783	5 325	6 166	382

<sup>1</sup> There are a number of dismantling options available for transportation of the generator set. These include different options for reduced weight, height and length. Please contact Wärtsilä for further information.

<sup>2</sup> The listed dimensions of generating set are maximum transportation dimensions, but excludes the spring-mounted shock absorbers and turbocharger inlet cones for V engines.

<sup>3</sup> The generating set's dry weight includes spring-mounted shock absorbers and inlet cones, excludes lube oil and cooling fluids.



**General conditions** Rated electrical power, heat rates and electrical efficiencies are given at generator terminals at 100 kPa ambient pressure, 25°C suction air temperature and 30% relative humidity, and without engine driven pumps. Power factor 1.0 (site).

Gas LHV >28 MJ/Nm<sup>3</sup>. Gas methane number >80. Gas pressure > 5.1 bar(g) at plant inlet. Please contact Wärtsilä for project-specific performance figures in case the gas does not fulfil the aforementioned criteria

**Special conditions** Site conditions and applicable emission limits may have an impact on the heat rate and efficiency. Please contact Wärtsilä for project-specific performance data.

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