

WÄRTSILÄ 50

Diesel engine generating set

The Wärtsilä 50 is a four-stroke diesel engine generating set. High efficiency and power on any liquid fuel combined with high reliability and flexibility makes this solution perfect for flexible baseload applications including daily starts and stops. The dynamic features of the genset are also suitable for balancing power generation, especially in larger power plants where footprint needs to be reduced.

Wärtsilä 50 engine comes in 18V cylinder configuration producing up to 18.9 MW electrical power. It uses direct fuel injection that results in high engine efficiency while keeping emissions within limits set by the World Bank/IFC Guidelines.

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

- Most efficient liquid fuel solution
- Can operate on any liquid fuel including liquid biofuels, LFO and HFO
- Fast-starting capability which enables rapid response to fluctuations
- No start cost, limitations nor degradation in number of starts
- Compact size reduces power plant footprint
- Minimal water consumption
- Optimised performance and reliability supported by Wärtsilä Lifecycle solutions

30

seconds power to grid

49.4

% electrical efficiency

> 3 500

MW installed capacity

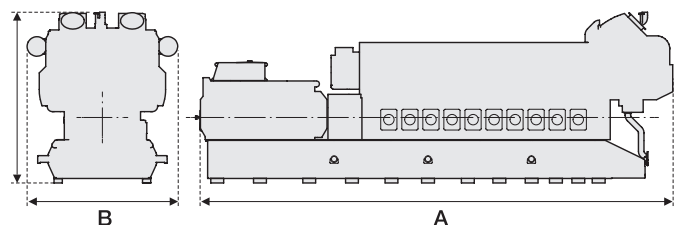
Main technical data

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 ¹		
	18V50	
Rated electrical power (kW)	18 434 (50 Hz)	18 875 (60 Hz)
Electrical efficiency (%)	49.4 (50 Hz)	49.1 (60 Hz)
Heat rate (kJ/kWh)	7 282 (50 Hz)	7 339 (60 Hz)
Loading and unloading		
	Connected to grid	Full load
Regular start time (min:sec)	0:30	10:00
Fast start time (min:sec)	0:30	Down to 2:00
Shut-down time (min)	1:00	
Ramp rate (hot, load /min)	60%	
Minimum load		
Unit level	10%	
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
Wärtsilä 50	18 747	5 543	6 257	377

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. Site conditions, fuel and applicable emission limits may have an impact on performance figures. Please contact Wärtsilä for project-specific performance data.

² The engine and generator are transported separately. There are a number of additional dismantling options available for transporting the generator set. These include different options for reduced weight and height. Please contact Wärtsilä for further information.



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