



WÄRTSILÄ 31SG GAS ENGINE GENERATING SET

The most efficient gas engine, Wärtsilä 31SG, is a four-stroke, spark-ignited, lean-burn gas engine generating set. With its world class open-cycle efficiency and unparalleled dynamic capabilities, it reduces environmental footprint and lowers the total cost of ownership.

Wärtsilä 31SG is well suited for baseload production, balancing renewables and industrial applications where reducing carbon emissions while producing reliable power is crucial. Its capability of fast starting and stopping and ability to run on sustainable fuels secures low emissions and high efficiency. It also meets the specific needs of combined heat and power (CHP) plants, for example steam generation, hot or chilled water or a combination of the above.

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 enabled by 2-stage turbocharging system
- Adaptability for various gas qualities
- Capable of hydrogen blending
- Excellent load following capabilities
- Cost efficient maintenance
- Optimised performance and efficiency supported by Wärtsilä Lifecycle solutions

52.3

% Highest possible
electrical efficiency

11.8

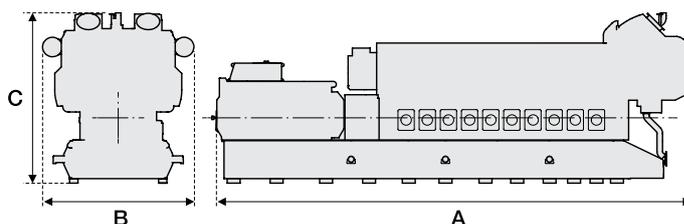
MW Highest possible
electrical power

30

Seconds power to grid

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 31SG	WÄRTSILÄ 31SG Efficiency optimised
Rated electrical power (kW)	11 777 (50 Hz) 11 377 (60 Hz)	10 798 (50 Hz) 10 396 (60 Hz)
Electrical efficiency (%)	51.5 (50 Hz) 51.6 (60 Hz)	52.2 (50 Hz) 52.3 (60 Hz)
Heat rate kJ/kWh	6 986 (50 Hz) / 6 971 (60 Hz)	6 901 (50 Hz) / 6 886 (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	10%	
Plant level	1%	

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 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.



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 © 2022 Wärtsilä Corporation.

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

