GE
Marine

LM6000 Marine Gas Turbine

The LM6000 is a simple-cycle, two-shaft, high-performance gas turbine that is derived from GE's CF6-80C2 high bypass turbofan aircraft engine. Taking advantage of the CF6-80C2 low-pressure system's normal operating speed of 3600 rpm, the LM6000 couples loads directly to the low-pressure turbine shaft. This feature allows the commonality of the CF6-80C2 and the LM6000 to be maintained. The results are low-cost, field-proven parts for the LM6000. The low pressure compressor features independently controlled variable inlet guide vanes and variable stator vanes to modulate airflow, ensuring fast, easy startup/shutdown—even under partial loads. The high pressure compressor is mated to an efficient annular combustor for maximum fuel economy. Incorporation of advanced airflow and cooling technologies helps the LM6000 have unprecedented parts life, and provide reliable and efficient power, low fuel consumption, and low NO_x, carbon monoxide, and unburned hydrocarbon emissions, which is critical for marine applications.

Direct-Drive Means More Useful Power

The LM6000's power comes directly from the low pressure rotor shaft. There is no free-spinning power turbine, and in 60-cycle applications such as an electric drive ship, no gearbox is required. Loads are coupled directly to the turbine's cold or hot end. Eliminating the free power turbine allows for greater flexibility in ship design and better use of valuable space.

The LM6000 weighs only 17,336 pounds (7,880 kg) which is less than half the weight of other large aeroderivative gas turbines.

The entire unit is only 193.5 in long, 85 in wide and 81 in high (4.91 x 2.16 x 2.03 m) so you can generate more power in less space.

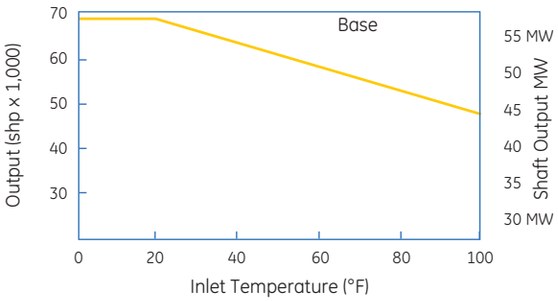
The compact LM6000, with its great environmental and high thermal performance, is an ideal gas turbine for consideration in ship propulsion systems design when high power output is a requirement.

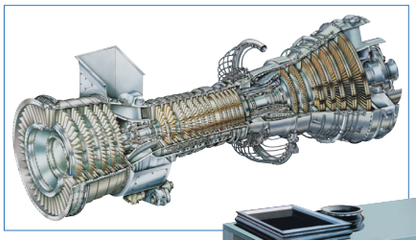
Performance: LM6000 Gas Turbine Data**

Output	59,900 shp (44,700 kW)
SFC	.329 lb/shp-hr
Heat rate	6,049 Btu/shp-hr
	8,119 Btu/kWs-hr
	8,564 kJ/kWs-hr
Exhaust gas flow	286 lb/sec (130 kg/sec)
Exhaust temperature	849°F (454°C)
Power turbine speed	3600 rpm

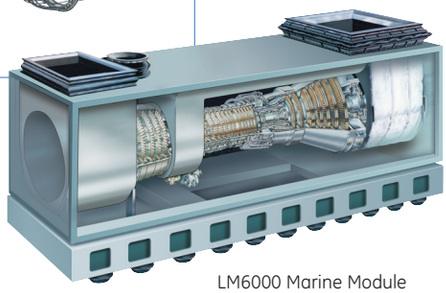
**Average performance, 59°F, sea level, 60% relative humidity, no losses

Max Power vs. Ambient Temperature





LM6000 Gas Turbine



LM6000 Marine Module

LM6000 Marine Gas Turbine

LM6000 Marine Gas Turbine - Genset

The LM6000 marine gas turbine can be coupled with an electric generator making an LM6000 marine gas turbine-generator set. The LM6000 genset is ideal for military ship applications for which electric drive is the propulsion system of choice.

Dimensions*

Base plate width		169.6 in (4.36 m)
Base plate length		650 in (16.5 m)
Enclosure height		193.3 in (4.9 m)
Base plate weight		151 tons
Duct flow areas	Inlet	90 sq ft (8.36 sq m)
	Exhaust	57 sq ft 9 (5.3 sq m)

*Exact dimensions, weight and performance vary with the specific generator selected

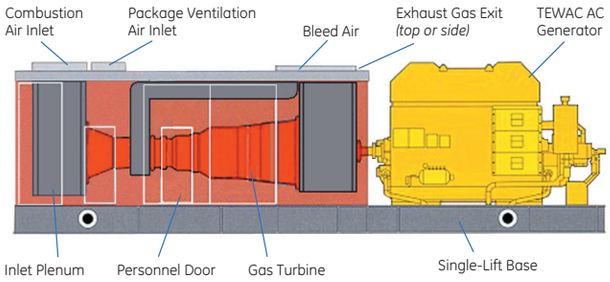
Performance**

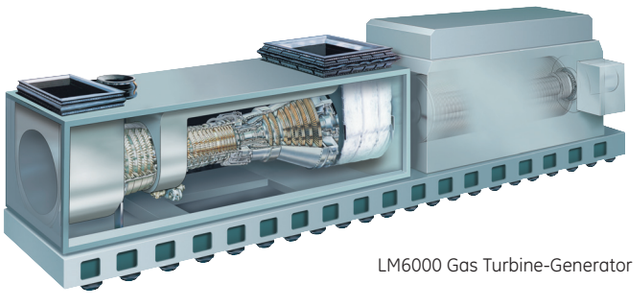
Output	42,800 kW
Heat rate	8,348 Btu/kW-hr
Thermal efficiency	40.8%

**Average performance, 60 Hz, 59°F, sea level, 60% relative humidity, 4 in. water inlet loss, 6 in. water exhaust loss

Specific Qualifications

While the LM6000 has not yet been applied for ship propulsion, many design studies have been performed showing its viability. More than 600 of these units have been built for industrial applications, driving electric generators for utility and industrial power generation. At sea, 14 units are used aboard floating production storage and offloading vessels, accumulating over 260,000 operating hours. More than 7 million operating hours have been accumulated on all the LM6000s, experiencing a fleet-wide reliability greater than 99%.





LM6000 Gas Turbine-Generator Set

Contact us at www.ge.com/marine

Other product sheets are available on the LM500, LM1600, LM2500, LM2500+ and LM2500+G4.

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