



# LM2500+G4 Marine Gas Turbine

37 MW (ISO<sup>1</sup>) or 30.46 MW (US NSD<sup>2</sup>) Ratings of Reliable Power



Ship imagery courtesy U.S. DoD

## Unmatched experience and reliability

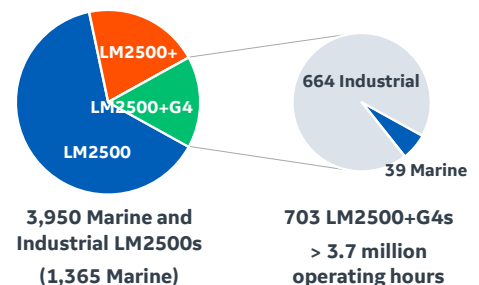
The GE LM2500+G4 aeroderivative marine gas turbine is naval propulsion's latest technology. As part of GE's LM2500 family of engines, the LM2500+G4 is backed by a commitment to unmatched, reliable propulsion power.

All GE LM2500 family gas turbines are supported by ten global depot/service locations. GE offers the LM2500 family with extensive auxiliary component options and the new lightweight composite gas turbine module to provide best-in-class power density with the lowest lifecycle costs.

GE's marine business benefits from its parent, GE Aviation, that

manufactures all LM aeroderivative gas turbines in Cincinnati, Ohio. These engines serve demanding marine and industrial markets in mechanical and electrical generation applications.

A proven operational record can be traced to GE's continual technology infusion. The LM2500 family of engines has significant commonality, as all are two spool engines.



3,950 Marine and Industrial LM2500s (1,365 Marine)

703 LM2500+G4s > 3.7 million operating hours



## LM2500 naval family: 36 navies • 1,365 engines • 16+ million hours • 99+% reliability

Model	ISO Power (MW)	US NSD Power (MW)	Gas Generator (GG)		Power Turbine (PT)
			High Pressure Compressor (HPC)	High pressure turbine (HPT)	
LM2500	25.06	22.07	16-stage	2-stage	6-stage free
LM2500+	30.20	26.63	17-stage; added zero-stage blisk		
LM2500+G4	36.98	30.46			

1. ISO average performance: 59°F, sea level pressure, 0% relative humidity, no inlet/exhaust losses
2. U.S. Navy Standard Day (US NSD) average performance: 100°F ambient air, sea level pressure, 60% relative humidity, 4.0 in H<sub>2</sub>O inlet loss/6.0 in H<sub>2</sub>O exhaust loss.

### Proven design

- Two-spool engine has no restrictions for cold start-up or operation in harsh environments
- Full enclosure for optimal noise and thermal protection for the crew
- Every U.S. Navy gas turbine is full load tested with the module to ensure acoustic and operational performance
- Shock-qualified via barge test
- Type approvals: ABS NVR, BV, DNV GL, Lloyd's Register Naval, and RINA

### Benefits

- Reliability
- Survivability
- Power density
- Simple maintainability
- Enhanced crew safety
- Efficiency



### Simple maintainability

- No need for expensive turbine removals with long unavailability; GE's horizontal split compressor makes it easy to insert life-extending technology or make repairs
- Maximize repairs inside the module with the ability to separate gas generator and power turbine
- Navies save millions in repair costs

### Lightweight composite module

- One-piece composite carbon fiber construction eliminates corrosion
- Shock, fire and smoke tested
- 5,500 lb wall weight reduction versus steel
- Improved sound attenuation; 60% (4 dBA)
- Reduced wall temperature (25°F to 50°F cooler)
- Improved entrance
  - Access doors are 60% lighter, 6" taller than steel design; large 8" x 18" viewing window
  - New large external plenum access panel
  - Larger, lighter rear panel for easier maintenance access





## Gas turbine package standard contents

- Simple lift skid; pre-wired and piped (fluid feed and drains) and mounted on low-noise shock and vibration mounts
- Full complement of lighting, instrumentation, valves and expansion joints
- Clockwise shaft rotation (viewed aft looking forward)

## Package dimensions

All LM2500 models have the same overall package dimensions providing the greatest flexibility in engine arrangement and future power needs. The Lube Scavenging and Conditioning Assembly (LSCA) is a provided off-module skid.

Model	LM2500	LM2500+	LM2500+G4	LSCA
Dry weight - lb (mt)	40,500 (18.4)	43,900 (19.9)		1,290 (0.6)
Baseplate length - in (m)			315 (8.0)	52 (1.3)
Baseplate width - in (m)			104 (2.6)	31 (0.8)
Height (bottom of baseplate to top of enclosure) - in (m)			96 (2.4)	41 (1.0)
Nominal inlet duct cross section - ft <sup>2</sup> (m <sup>2</sup> )	48 (4.5)	57 (5.3)		
Nominal exhaust duct cross section - ft <sup>2</sup> (m <sup>2</sup> )	30 (2.8)	36 (3.3)		

## Maximum power performance

LM2500+G4	ISO	US NSD
Output	49,587 shp (36,977 kW)	40,840 shp (30,455 kW)
SFC	0.350 lb/shp-hr (213 g/kW-hr)	0.368 lb/shp-hr (224 g/kW-hr)
Heat rate (18,400 Btu/lb LFHV)	6,432 Btu/shp-hr; 8,626 Btu/kW-hr 9,098 kJ/kW-hr	6,763 Btu/shp-hr; 9,070 Btu/kW-hr 9,566 kJ/kW-hr
Inlet air flow	205.7 lb/s (93.5 kg/s)	180.4 lb/s (82 kg/s)
Exhaust gas flow	209 lb/sec (93 kg/sec)	183 lb/sec (83.1 kg/sec)
Exhaust gas temperature	1,042°F (549°C)	1,078°F (581°C)
Power turbine speed	3600 rpm	3600 rpm



## Gas turbine package customer options

- Composite access door  
One door;  Left  Right  
 Two doors; one on each side
- Fire protection  
 Water mist  HFP  AFFF  
 CO2  Other \_\_\_\_\_
- Engine Start  
 Electric  Hydraulic  Pneumatic
- Off engine Lube Storage and Conditioning Assembly (LSCA)
- Optional off-engine auxiliary systems/skids  
 Fire suppression  Engine start  Fuel delivery  
 Engine control unit  Water wash

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