

## LM2500+ MARINE Gas Turbine

### Technology

The 36% thermally efficient marine gas turbine package generator, or CM2500+, is a hot-end drive, two-shaft industrial gas turbine that is an effective solution for either mechanical or electrical propulsion aboard ships.

- Baseload Power Capabilities of 25 MWe Flat Rated 0°C to 30°C
- High Reliability
- Low Emissions
- Maintenance Ease

### Experience

Maintaining a high degree of commonality with its flight-tested forerunners, the CM2500+ continues to build on its reputation as the most reliable gas turbine generator in its class.

- Over 8.5 Million Engine Operating Hours
- More Than 900 Units in Operation
- End-users: Cruise Ships, Fast Ferries, and Military Vessels

### Innovation

As a leading packager of gas turbines for the marine industry, GE Aero Energy continues to apply customer feedback into our products in many ways.

- Enhanced Lightweight Package Design to Allow More Cargo or Passenger Space
- Smart Electronics to Enable Uninterrupted Turbine Operation
- Combined Diesel and Gas Turbine (CODAG) Provide Ships with Additional Power and Environmental Operation in Compact Spaces

### ISO Performance on Marine Gas Oil

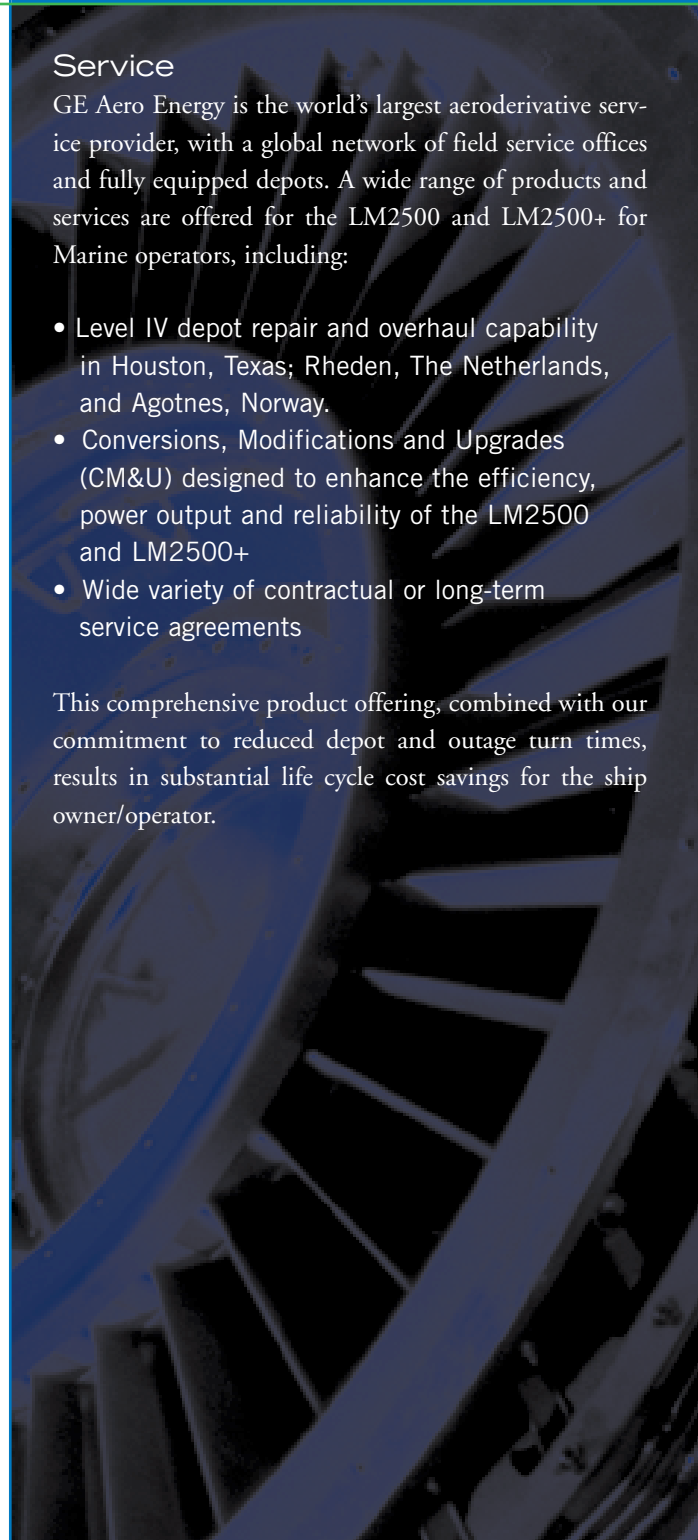
	LM2500	LM2500+
Power Output (kWe)	21,500	30,500
Heat Rate LHV (Btu/kWe-Hr)	9,590	8,850
Exhaust Flow (lbs/sec)	150	192
Exhaust Temperature (°F)	985	960
Power Turbine Speed (rpm)	3,600	3,600
No. of Compressor Stages	16	17
No. of Turbine Stages	6	6

### Service

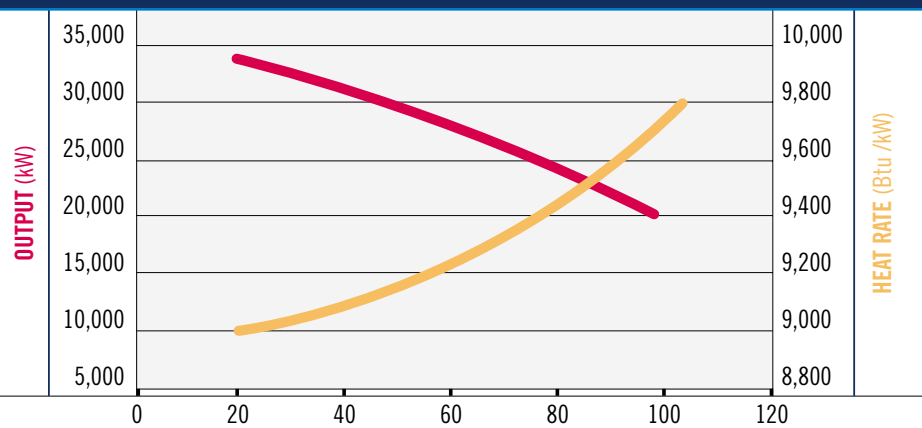
GE Aero Energy is the world's largest aeroderivative service provider, with a global network of field service offices and fully equipped depots. A wide range of products and services are offered for the LM2500 and LM2500+ for Marine operators, including:

- Level IV depot repair and overhaul capability in Houston, Texas; Rheden, The Netherlands, and Agotnes, Norway.
- Conversions, Modifications and Upgrades (CM&U) designed to enhance the efficiency, power output and reliability of the LM2500 and LM2500+
- Wide variety of contractual or long-term service agreements

This comprehensive product offering, combined with our commitment to reduced depot and outage turn times, results in substantial life cycle cost savings for the ship owner/operator.

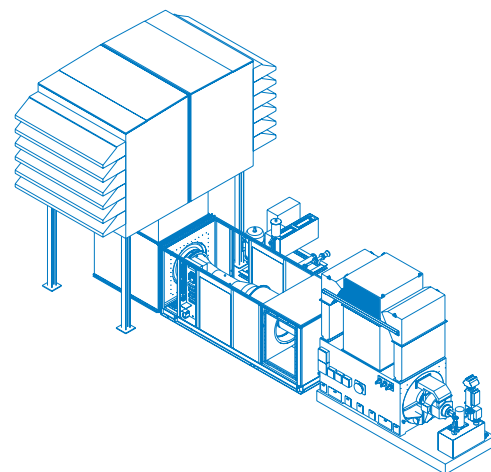


## LM2500+ 60Hz Output and Heat Rate



0 ft, 60% RH, 4/6 in H2O inlet/exhaust loss on marine gas oil

AMBIENT (°F)



LENGTH 52'3" x WIDTH 8'5" x HEIGHT 11'6"

## STANDARD 60HZ LM2500+ MARINE GENERATOR PACKAGE

### Gas Turbine

- 17 Stage Axial Compressor
  - > 1st 6 Stages are VIGV
  - > Horizontal Split Casing
  - > 20:1 Compression Ratio
  - > 103 lb/s Nominal Inlet Mass Flow
- Annular Combustor
  - > Liquid Fuel (Marine Gas Oil)
  - > Dual Igniters
- 6 Stage Power Turbine

### Generator

- Continuous Duty
- 2 pole, 3 phase 13.8kV, 0.8pf Brushless Exciter
- Water-to-Air Cooled (TEWAC)
- Voltage Regulator and Neutral Side Protection CT's
- NEMA Class F Insulation & B Temperature Rise

### Package

- 24V DC Batteries
- 92dBa Near Field Design
- Three Stage Air Filters
- Electro-Hydraulic Start System
- DNV/Loyds Register Type Approved
- Digital Control System with a Human Machine Interface (HMI)
- Turbine and Generator Lube Oil Systems with Plate and Frame Coolers
- Turbine Factory Tested
- On/Off-line Water Wash
- 1 Year Parts/Service Warranty
- Package Familiarization Training
- Electronically transmitted drawings

## OPTIONAL EQUIPMENT AND SERVICES

- Generator Options
  - > TEAC
  - > Voltages: 11kV
  - > Enclosure
- Fuel System
  - > Gas (LNG)
  - > Dual
- Control System
  - > Fast Start Capability
  - > Remote Display
- Fuel Oil System
  - > Fuel Forwarding/Coalescing Filtration Skid
- Winterization
- Steam Anti-Ice Inlet Conditioning