

More Power – Total Flexibility

GE's LM6000-PG* (SAC)

Adding technology advancements to deliver greater value.

In its quest to push the limits of gas power and performance, GE Power & Water continues to innovate available gas turbine offerings that improve power capability and enhance customer operations.

Offering a 25% simple cycle power increase and an 18% boost in exhaust energy for cogeneration applications, GE introduces one of the latest enhancements of its proven LM6000® aeroderivative gas turbine product line: the LM6000-PG with single annular combustor (SAC).

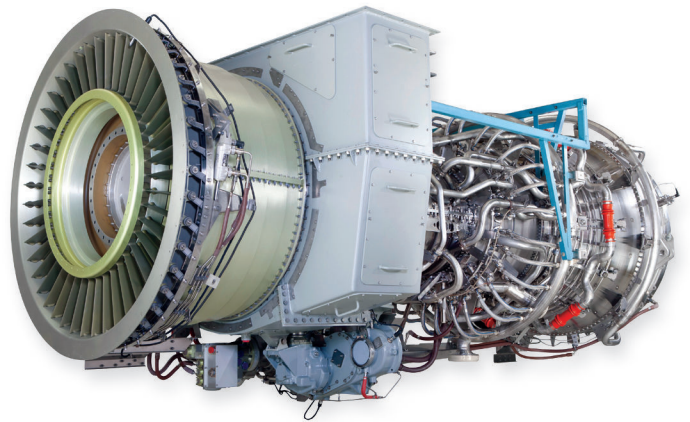
The LM6000-PG will provide combined cycle power in the range of 66 megawatts (MW) with efficiencies ranging from 50 to 52%, depending on selected emissions control methods. The power increase comes from the same 4.5 m X 21.5 m package footprint as existing 50 Hz LM6000 technology, yielding a power density improvement of nearly 20%.

GE's LM6000 has a product heritage of over 1,000 units shipped and +21 million operating hours with over 99% reliability. The improved combined cycle efficiency of the LM6000-PG can reduce fuel consumption by the equivalent of 33,000 barrels of oil per year, when compared to other similar aeroderivative solutions in its class. The LM6000 uprate also reduces carbon dioxide emissions by 6,500 tons over the course of a typical operating year—the same emissions reduction achieved by removing 2,500 cars from the road annually.

Material and technology upgrades previously demonstrated on the CF6-80E and GE90 aircraft engine, and the LMS100® were key to the improvements on the LM6000. The LM6000-PG has been designed with specific attention to commonalities between the 50 Hz and 60 Hz offerings, allowing operators to benefit from a global experience base. The 60 Hz packages will be assembled in GE's Houston, Texas facility, while the 50 Hz packages will be manufactured in GE's Hungary facility.

ISO Performance based on natural gas at ISO conditions, zero losses

NO _x Control Method/Sprint®	Unabated/-	Water/-	Water/Sprint®
Power Output (kWe)	52,784	55,617	58,036
Thermal Efficiency (%)	43.2%	41%	40.8%
Heat Rate LHV (Btu/kWe-Hr)	7,898	8,324	8,355
Exhaust Flow (lbs/sec)	310	320	324
Exhaust Temperature (°F)	878	858	867
NO _x Emissions (ppmvd)	—	25	25
Water Injection for NO _x (lbs/hr)	—	27,965	26,519
Power Turbine Speed (rpm)	3,930	3,930	3,930
No. of Compressor Stages	19	19	19
No. of Turbine Stages	7	7	7



The LM6000-PG provides more power and total flexibility. Built upon the heritage of an industry leader, the LM6000-PG is ready to meet your power needs.



STANDARD 60/50 Hz LM6000-PG (SAC) Package Configuration

Gas Turbine

- Cold-end drive
- Single Annular Combustor (25 ppm NO_x, 50 mg/Nm³) combustor
- Horizontally split casing
- Variable inlet guide vanes
- Gas turbine familiarization training

Generator

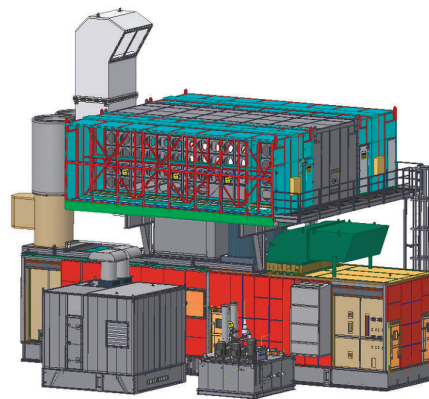
- 13.8 kV, 0.85 PF brushless 2-pole exciter (60 Hz)
- 11.5 kV, 0.8 PF brushless 2-pole exciter (50 Hz)
- WPII weather protected
- Voltage regulator/neutral side protection CTs
- NEMA Class F insulation and B temperature rise
- Integrated protective relay panel
- Vertical offset gearbox

Package

- Auxiliary module containing turbine lube oil, water wash, hydraulic start, and water injection systems
- Fully enclosed gas turbine and generator system meeting 85 dBA near field design
- Direct drive generator fans
- Guard inlet air filters
- Electro-hydraulic start/shutdown system
- Class I Div 2 Group D/Zone 2 class electrical system
- Digital control system with duplex key reliability sensors and instrumentation
- Simplex shell and tube coolers for the lube oil system
- Axial exhaust collector
- Fire protection system with gas detectors, and optical flame and thermal detectors

Options

- Dual igniter
- Integrated piping, cable trays, and wiring
- Enhanced walkway (60 Hz units only)
- Control Module
- Generator options
 - Voltages from 12.47 kV to 13.8 kV (60 Hz)
 - Voltages from 10.5 kV to 11.5 kV (50 Hz)
- Fuel systems
 - Gas with water or steam for NO_x control – 25 ppm, 50 mg/Nm³
 - Liquid with water for NO_x control – 42 ppm, 86 mg/Nm³
 - Dual fuel
- Control system
 - Black start for island operation
 - Continuous Emission Monitoring
 - Remote display to control or monitor the unit
 - Power & Control Module fully wired
 - Motor control center
- Lube oil system
 - Oil/water coolers
 - First fill lubricants
- Winterization interval packages down to -39°F, -39°C
- Pulse air filter for less maintenance
- 80 dBA capability
- Inlet conditioning for optimized efficiency
 - Evaporative cooling
 - Mechanical chilling
 - Heating



LM6000-PG/PH* Enhanced Packaging

Key Characteristics

- Universal aux skid reduces footprint
- Minimizes field connections
- Main base has same footprint
- Mark VIe and Woodward Controls
- Same inlet air filter house
- Same chiller coils



For more information, contact your GE representative
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