

General Specifications

Mars® 100 Gas Turbine

- Industrial, Two-Shaft
- 15 Stage Axial Compressor
 - Variable Inlet Guide Vanes and Stators
 - Pressure Ratio: 17.8:1
 - Inlet Airflow: 42.0 kg/sec (92.5 lb/sec)
 - Vertically Split Case
- Combustion Chamber, Annular-Type
 - 21 Conventional Fuel Injectors or 14 Lean-Premixed, Dry Low Emissions Injectors
 - Torch Ignitor System
- Power Turbine
 - 2-Stage Reaction
 - Speed, 50-Hz Generator: 8625 rpm
 - Speed, 60-Hz Generator: 8570 rpm
- Bearings
 - 4 Radial Journal: Tilt-Pad
 - 2 Thrust (GP & PT), Active: Tilt-Pad
 - 2 Thrust (GP & PT), Inactive: Fixed Tapered Land
- Coatings
 - Compressor: Inorganic Aluminum
 - Turbine and Nozzle Blades: Platinum Aluminide
- Vibration Transducer Type
 - Proximity Probes, 2 per Radial Bearing/2 per Thrust Bearing

Main Reduction Drive

- Epicyclic Type
 - 1500 or 1800 rpm

Generator

- 4 Pole, 3 Phase, 6 Wire, Wye Connected, Synchronous with Permanent Magnet Generator Exciter
- Available Construction Types:
 - Open Drip-Proof Construction
 - CACA/TEAAC (Closed Air, Cooling Air/ Totally Enclosed, Air to Air Cooling)*
 - CACW/TEWAC (Closed Air, Cooling Water/Totally Enclosed, Water to Air Cooling)*
- Sleeve Bearings
- Vibration Monitoring; Velocity Transducers
- Vibration Monitoring; Displacement Transducers*

- NEMA Class F Insulation
- Class F Temperature Rise
- Class B Temperature Rise*
- Continuous Duty Rating Voltages:
 - 3300, 6600, 11 000 (50Hz)
 - 4160, 6900, 12 470, 13 200, 13 800 (60Hz)

Package

- Mechanical Construction
 - Steel Base Frame with Drip Pans
 - 316L Stainless Steel Piping
 - Compression Type Tube Fittings
- Start System
 - Direct Drive AC Motor with VFD Control
- Package Electrical Certification
 - NEC, CSA Class 1, Group D, Div.2
- Fuel System
 - Natural Gas
 - Diesel*
 - Dual (Natural Gas and Diesel)*
 - Low BTU Gas*
- Integrated Lube Oil System
 - Turbine-Driven Lube Pump
 - AC Motor Driven Pre/Post Lube Pump
 - DC Motor Driven Backup Lube Pump
 - Air to Oil Cooler
 - Water to Oil Cooler*
 - Integral Lube Oil Tank
 - Lube Oil Tank Heater*
 - Lube Oil Filter
 - Duplex Lube Oil Filter*
 - Oil Tank Vent Separator with Flame Arrestor
- Air Inlet and Exhaust Systems
 - Carbon Steel
 - Stainless Steel*
 - Barrier Type Filters
 - Self-Cleaning Filters
 - Inlet and Exhaust Silencers*
 - Inlet Evaporative Cooler*
 - Inlet Chiller Coils*
- Enclosure
 - Complete Package
 - Driver Only*
 - Fire Detection and CO2 Suppression System

- Turbine Compressor Cleaning Systems
 - On-Crank/On-Line
 - Portable Cleaning Tank*
- Package Power
 - 120VDC Battery/Charger System*
- Turbotronic™ On-Skid Gas Turbine and Generator Control System Features
 - Combination Generator Control Module with Load Share, Auto Synchronization, Voltage Control
 - Standard Display with Discrete Event Log, Strip Chart, Historical Trend, Maintenance Screen
 - Vibration and Temperature Monitoring
 - English Display Text and Labels
 - Spanish, Portuguese, German, French or Simplified Chinese Display Text and Labels*
 - Auxiliary and Remote Display/Control Terminals*
 - Turbine Performance Map*
 - KW Import Control*
 - KVAR/Power Factor Control
 - ControlNet Redundant Media, Ethernet, Modbus RS232C/422/485 Supervisory Interface*
 - Heat Recovery Application Interface*
 - Multi-Unit Applications: Load Shed Control, Import/Export or kW/KVAR Control Panels*
 - InSight Platform™ Equipment Health Management*
 - Printer/Logger*
- Electrical System Options
 - Neutral Grounding Resistor or Transformer*
 - Switchgear and Generator Protective Relay*
 - Motor Control Center with Automatic Transfer Switch*
- Documentation
 - Drawings
 - Quality Control Data Book
 - Inspection and Test Plan
 - Test Reports
 - O&M Manuals
- Factory Testing of Turbine
- Factory Testing of Package Systems
 - Non-Dynamic
 - Dynamic

Performance

Output Power	11 350 kW
Heat Rate	10 935 kJ/kWe-hr (10,365 Btu/kWe-hr)
Exhaust Flow	153 245 kg/hr (337,850 lb/hr)
Exhaust Temp.	485°C (905 °F)

Application Performance

Steam (Unfired)	23.7 tonnes/hr (52,340 lb/hr)
Steam (Fired)	113.8 tonnes/hr (250,880 lb/hr)
1536°C (2800°F)	
Chilling (Absorp.)	20 490 kW (5820 refrigeration tons)

Nominal rating – per ISO
At 15°C (59°F), sea level

No inlet/exhaust losses

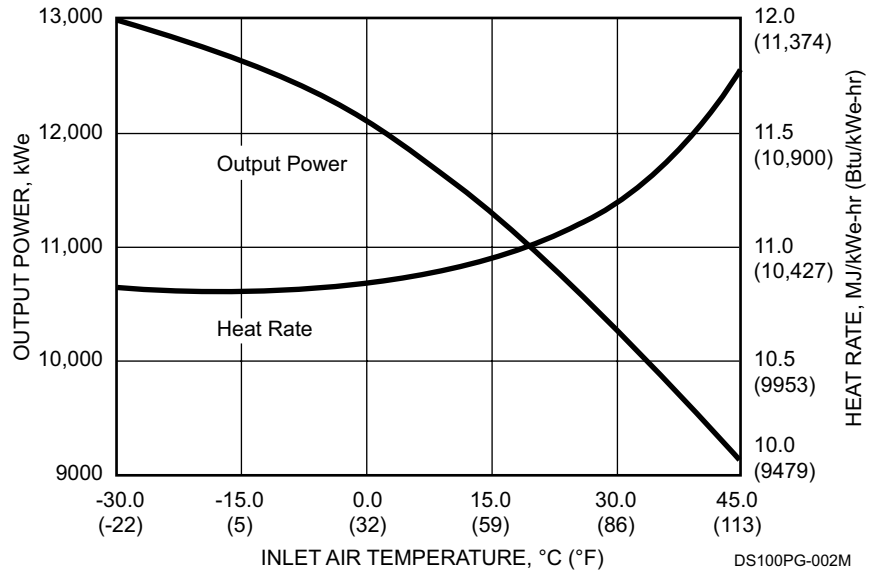
Relative humidity 60%

Natural gas fuel with
LHV = 35 MJ/nm³ (940 Btu/scf)

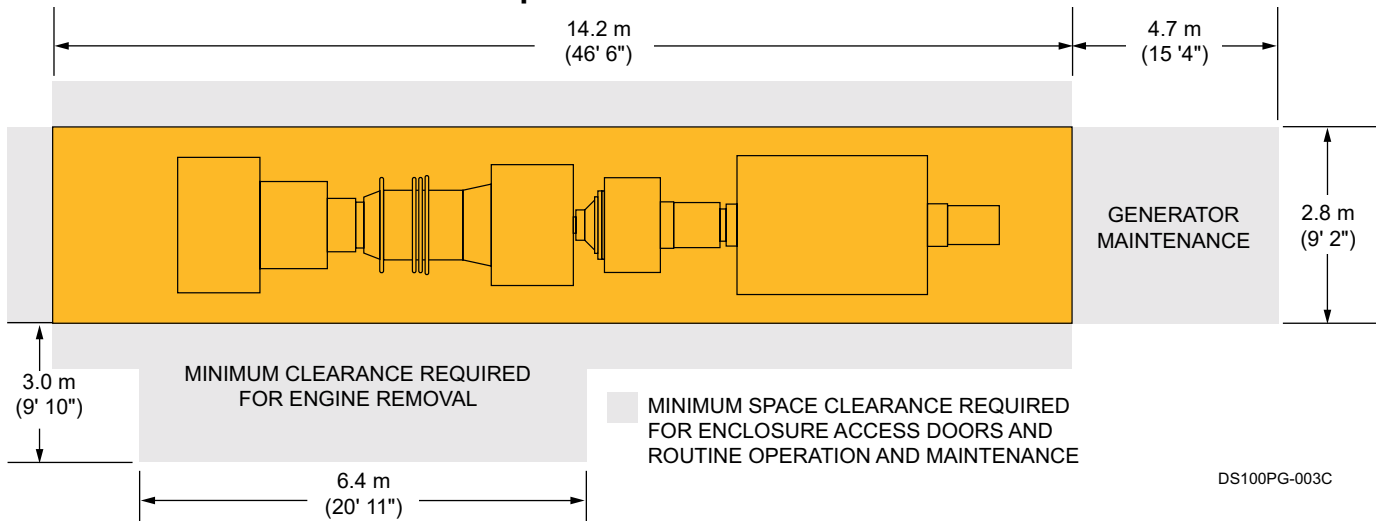
No accessory losses

Engine efficiency: 33%
(Measured at generator terminals)

Available Power



Enclosure Access and Maintenance Space*



Package Height: 3.8 m (12' 6")

Package Weight: 82 145 kg (181,000 lb)

*Dry weight, unenclosed height