

General Specifications

Mars® 100 Gas Turbine

- Industrial, Two-Shaft
- Axial Compressor
 - 15-Stage
 - Variable Inlet Guide Vanes
 - Compression Ratio: 16:1
 - Inlet Airflow: 38 kg/sec (84 lb/sec)
 - 100% Speed: 10,780 rpm
 - Vertically Split Case
- Combustion Chamber
 - Standard: Annular-Type (Conventional)
 - Optional: Annular-Type, Lean-Premixed, Dry, Low Emission (SoLoNO_x[™])
 - 21 Fuel Injectors (Standard)
 - 14 Fuel Injectors (SoLoNO_x)
 - Torch Ignitor System
- Gas Producer Turbine
 - 2-Stage, Reaction
 - 100% Speed: 10,780 rpm
- Power Turbine
 - 2-Stage, Reaction
 - Speed, 50-Hz Generator: 8625 rpm
 - Speed, 60-Hz Generator: 8568 rpm
- Bearings
 - Journal: Tilt-Pad
 - Thrust, Active: Tilt-Pad
 - Thrust, Inactive: Fixed Tapered Land
- Coatings
 - Compressor: Inorganic Aluminum
 - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
- Vibration Transducer Type
 - Proximity Probes

Main Reduction Drive

- Epicyclic Type
- 1500 or 1800 rpm

Generator

- Type: Salient Pole, 3-Phase, 6-Wire, Wye Connected, Synchronous, with Brushless Exciter
- Construction Options
 - Open Drip Proof
 - Weather Protected II (WP11)
 - Totally Enclosed Water/Air Cooled
- Sleeve Bearings
- Voltage Regulation
 - Solid-State Regulation with Permanent Magnet Generator
- Insulation/Rise Options
 - NEMA Class F with F Rise
 - NEMA Class F with B Rise
- Voltages: 3300 to 13,800 Volts
- Frequency: 50 or 60 Hz

Key Package Features

- Base Frame with Drip Pans
- 316L Stainless Steel Piping ≤4"
- Compression-Type Tube Fittings
- Gauge Panel
- Electrical System Options
 - NEC, Class I, Group D, Div 2
 - IEC, Zone 2
- *Turbotronic*[™] Microprocessor Control System
 - Free-Standing Control Console
 - Color Video Display
 - Vibration Monitoring

- Control Options
 - 24-Vdc Control Battery/Charger
 - 120-Vdc Accessory Battery/Charger
 - Turbine and Package Temperature Monitoring
 - Serial Link Supervisory Interface
 - Turbine Performance Map
 - Historical Displays
 - Printer/Logger
 - Predictive Emissions Monitoring
 - Field Programming
- Start System
 - Direct Drive AC
- Fuel Systems
 - Natural Gas
 - Liquid
 - Dual (Gas/Liquid)
- Integrated Lube Oil System
 - AC Motor-Driven Accessories
- Oil System Options
 - Oil Cooler
 - Oil Heater
 - Tank Vent Separator
 - Flame Trap
- Axial Compressor Cleaning Systems
 - On-Crank
 - On-Crank/On-Line
 - Stationary Cleaning Tank
 - Portable Cleaning Tank
- Air Inlet and Exhaust System Options
- Enclosure and Associated Options
- Factory Testing of Turbine and Package
- Documentation
 - Drawings
 - Quality Control Data Book
 - Inspection and Test Plan
 - Test Reports

Performance

No Inlet/Exhaust Losses,
Relative Humidity 60%,
Natural Gas Fuel with
LHV = 31.5 to 43.3 MJ/nm³
(800 to 1100 Btu/scf)
Optimum Power Turbine Speed
Thermal Efficiency: 32.5%

Nominal Rating - ISO
At 15°C (59°F), Sea Level

Output Power
Continuous Duty
10 695 kW_e

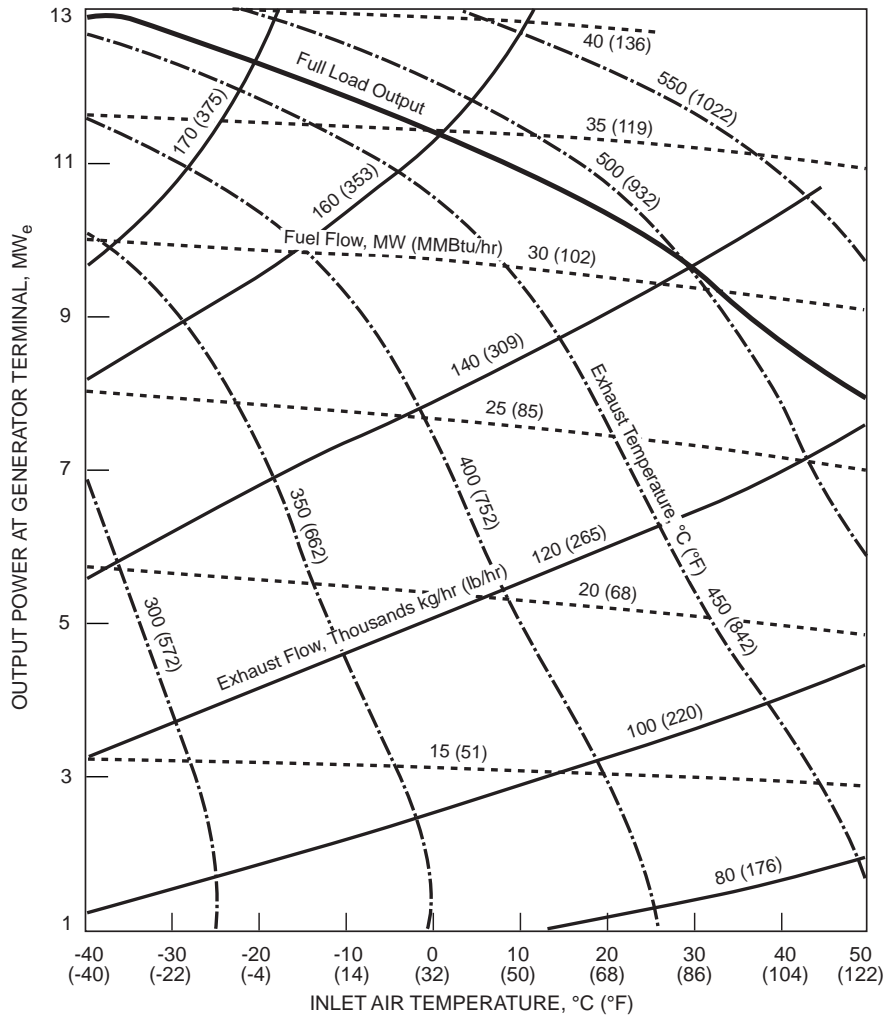
Heat Rate
11 092 kJ/kW_e-hr
(10,515 Btu/kW_e-hr)

Exhaust Flow
149 930 kg/hr (330,540 lb/hr)

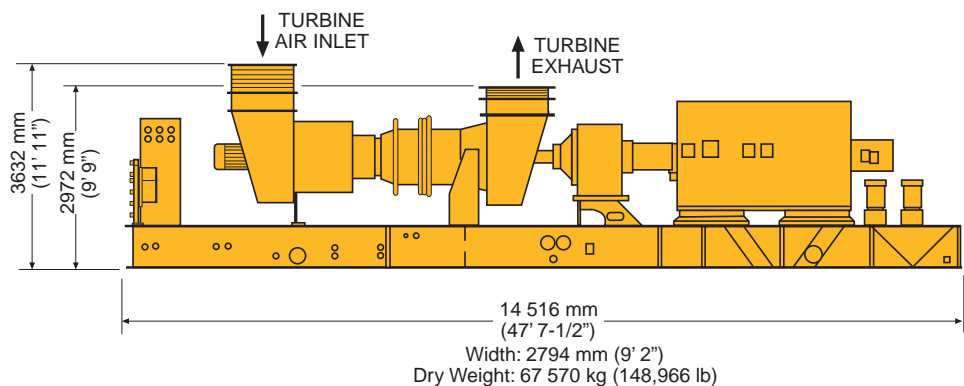
Exhaust Temperature
486°C (911°F)

Oil and Gas

Available Power



Package Dimensions



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DS100GS/298/5M

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