

General Specifications

Mars® 90 Gas Turbine

- Industrial, Two-Shaft
- Axial Compressor
 - 15-Stage
 - Variable Inlet Guide Vanes
 - Pressure Ratio: 16.3:1
 - Inlet Airflow: 39.7 kg/sec (87.5 lb/sec)
 - Vertically Split Case
- Combustion Chamber
 - Standard: Annular-Type (Conventional)
 - Optional: Annular-Type, Lean-Premixed, Dry, Low Emission (SoLoNOx™)
 - 21 Fuel Injectors (Standard)
 - 14 Fuel Injectors (SoLoNOx)
 - Torch Ignitor System
- Power Turbine
 - 2-Stage, Axial
 - Speed, 50-Hz Generator: 8625 rpm
 - Speed, 60-Hz Generator: 8570 rpm
- Bearings
 - Journal: Tilt-Pad
 - Thrust, Active: Tilt-Pad
 - Thrust, Inactive: Fixed Tapered Land
- Coatings
 - Compressor: Inorganic Aluminum
 - Turbine and Nozzle Blades: Platinum Aluminide
- Vibration Transducer Type
 - Proximity Probes
 - Velocity Pick-up
- 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
 - Totally Enclosed Water/Air Cooled*
- Sleeve Bearings
- Voltage Regulation
 - Solid-State Regulation with Permanent Magnet Generator
- Insulation/Rise Options
 - NEMA Class F with B Rise
- Voltages: 4160 to 13,800 Volts
- Frequency: 50 or 60 Hz
- Package**
 - Mechanical Construction
 - Steel Base Frame with Drip Pans
 - 316L Stainless Steel Piping
 - Compression-Type Tube Fittings
 - Suitable for 3-Point Mounting
 - FPSO Modifications (Option)
 - Electrical System
 - NEC, Class 1, Group D, Div 2
 - CENELEC/ATEX Zone 2
 - Cable Tray Wiring
 - 120VDC Battery/Charger System
 - Direct-Drive AC Start System
 - Fuel Systems
 - Conventional Combustion or Dry Low Emission (SoLoNOx)
 - Fuel Types
 - Natural Gas (Conventional and SoLoNOx)
 - Dual Fuel (Gas/Distillate, Conventional Only)
 - Integrated Lube Oil System
 - Turbine-Driven Main Pump
 - AC Motor-Driven Pre/Post Pump
 - DC (120V) Motor-Driven Backup Pump
 - Oil Cooler and Oil Heater (Options)
 - Tank Vent Separator and Flame Trap
 - Lube Oil Filter
 - On-Crank or On-Crank/On-Line Turbine Compressor Cleaning System (Options)
 - Portable Cleaning Tank (Option)

- Air Inlet and Exhaust System
 - Carbon Steel
 - Stainless Steel
 - Marine-Type Filters
- Enclosure (Driver Only or Complete)
 - Fire Detection and Suppression
- Factory Testing of Turbine and Package
- Documentation
 - Electrical Drawings
 - Mechanical Drawings
 - Quality Control Data Book
 - Inspection and Test Plan
 - Test Reports
 - Operation and Maintenance Manuals
- Digital Onskid Display Panel
- Turbotronic™ Control System**
 - Onskid Control System (Optional Offskid System)
 - 24 VDC Control Power (120VDC Input)
 - Serial Link Supervisory Interface
 - Field Programmable
 - Vibration Monitoring
 - Turbine Bearings and Shaft
 - Gearbox
 - Generator Bearings
 - Temperature Monitoring
 - Turbine Combustion Process
 - Turbine Bearings and Lube Oil
 - Generator Bearings and Windings
 - Generator Control
 - Selectable Control Modes
 - Solid-State Voltage Regulation
 - Automatic Synchronization
 - Metering Panel with Manual Synchronization (Option)
 - KW Control (Option)
 - Display and Monitoring System
 - Multiple Operator Display Screens
 - Data Collection and Playback
 - Turbine Performance Map (Option)
 - Printer/Logger (Option)

* Non-standard option

Performance

Output Power Continuous Duty	9450 kW
Heat Rate	11 300 kJ/kWe-hr (10,710 Btu/kWe-hr)
Exhaust Flow	144 590 kg/hr (318,760 lb/hr)
Exhaust Temp.	465°C (870°F)

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

No inlet/exhaust losses

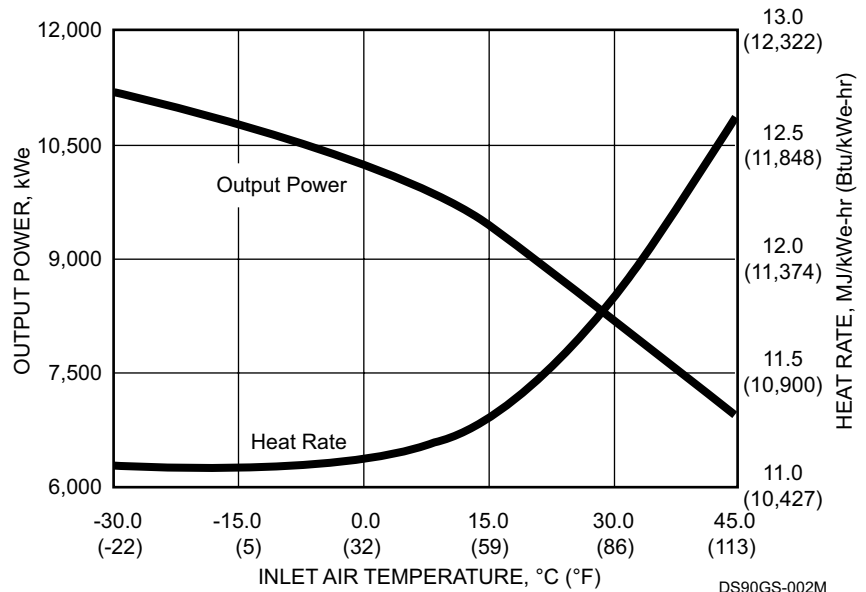
Relative humidity 60%

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

No accessory losses

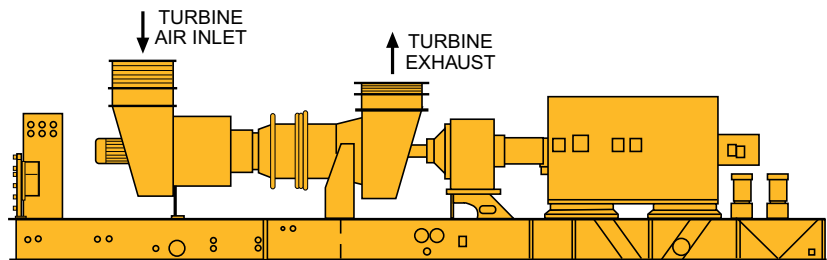
Engine efficiency: 31.9% (measured at
generator terminals)

Available Power



Package Dimensions*

Length: 14.2 m (46' 6")
 Width: 2.8 m (9' 2")
 Height: 3.8 m (12' 6")
 Typical Weight: 82 145 kg (181,000 lb)



DS90GS-003M

*Dry weight, unenclosed height

FOR MORE INFORMATION

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