

### General Specifications

#### Mars<sup>®</sup> 90 Gas Turbine

- Industrial, Two-Shaft
- Axial Compressor
  - 15-Stage
  - Variable Inlet Guide Vanes and Stators
  - Pressure Ratio: 16.3:1
  - Inlet Airflow:
    - 39.7 kg/sec (87.5 lb/sec)
  - Vertically Split Case
- Combustion Chamber
  - Annular-Type, Conventional or Lean-Premixed, Dry, Low Emission (SoLoNOx<sup>™</sup>)
  - 21 Fuel Injectors (Conventional)
  - 14 Fuel Injectors (SoLoNOx)
  - Torch Ignitor System
- Gas Producer Turbine
  - 2-Stage, Reaction
  - Max. Speed: 11,170 rpm
  - Thrust Bearing, Active: Tilting-Pad
  - Thrust Bearing, Inactive: Fixed Tapered Land
- Power Turbine
  - 2-Stage, Axial
  - Max. Speed: 9500 rpm
  - Thrust Bearing Active: Tilting Pad
  - Thrust Bearing Inactive: Fixed Tapered Land
- Journal Bearings
  - Tilting-Pad
- Coatings
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Platinum Aluminide
- Vibration Transducer Type
  - Proximity Probes
  - Velocity Pick-up

### Key Package Features

- Driver Skid with Drip Pans
- 316L Stainless Steel Piping  $\leq 4"$
- Compression-Type Tube Fittings
- Digital Gauge Panel
- Electrical System Options
  - NEC, Class I, Group D, Div 1
  - ATEX, Zone 2
  - CENELEC, Zone 1
- Turbotronic<sup>™</sup> Microprocessor Control System
  - Onskid Control System (Div 2 or ATEX, Zone 2)
  - Freestanding Control Console
  - Color Video Display
  - Vibration Monitoring
- Control Options
  - 120-Vdc Battery Charger System
  - Gas Turbine and Package Temperature Monitoring
  - Serial Link Supervisory Interface
  - Turbine Performance Map
  - Historical Displays
  - Printer/Logger
  - Remote Monitoring and Diagnostics Option
  - Process Controls
  - Compressor Anti-Surge Control
  - Field Programming
  - Predictive Emissions Monitoring
- Start Systems
  - Pneumatic
  - Direct Drive AC
- Fuel System
  - Natural Gas
- Integrated Lube Oil System
  - Turbine-Driven Accessories
  - AC Motor-Driven Accessories
- Oil System Options
  - Oil Cooler
  - Oil Heater
  - Tank Vent Separator
  - Flame Trap
- Package Skid Design
  - Optional Modifications for Floating Production Applications
  - Drop-In Lube Oil tank
  - Modularized System Design
- Axial Compressor Cleaning Systems
  - On-Crank
  - On-Crank/On-Line
  - Portable Cleaning Tank
- Gearbox (if applicable)
  - Speed Increaser
  - Speed Decreaser
- Air Inlet and Exhaust System Options (Carbon or Stainless Steel)
- Enclosure and Associated Options
- Factory Testing of Turbine and Package
- Documentation
  - Drawings
  - Quality Control Data Book
  - Inspection and Test Plan
  - Test Reports
  - Operation and Maintenance Manuals

### Performance

Output Power	9690 kW (13,220 hp)
Heat Rate	10 830 kJ/kW-hr (7655 Btu/hp-hr)
Exhaust Flow	144 585 kg/hr (318,755 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%

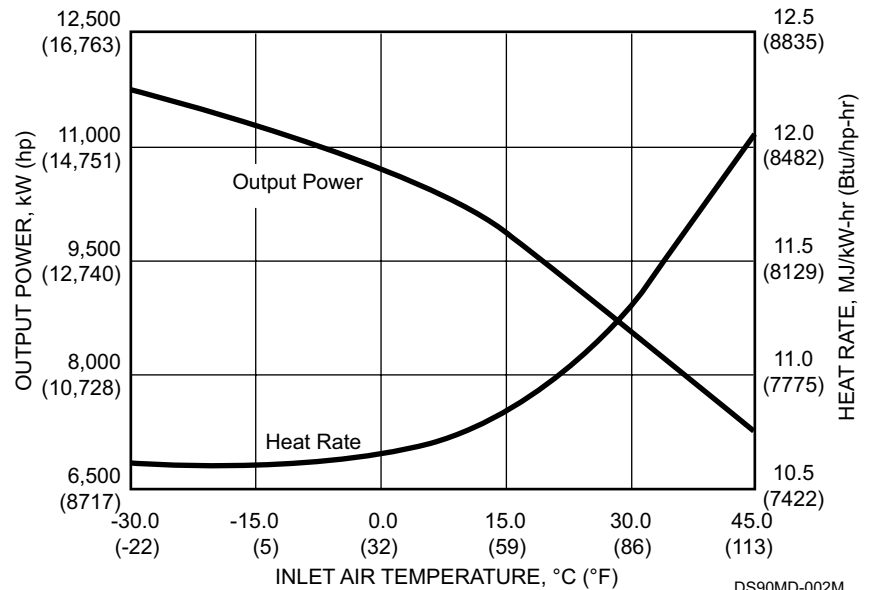
Natural gas fuel with  
LHV = 35 MJ/nm<sup>3</sup> (940 Btu/scf)

Optimum power turbine speed

AC-driven accessories

Engine efficiency: 33.2%

### Available Power



DS90MD-002M

### Package Dimensions\*

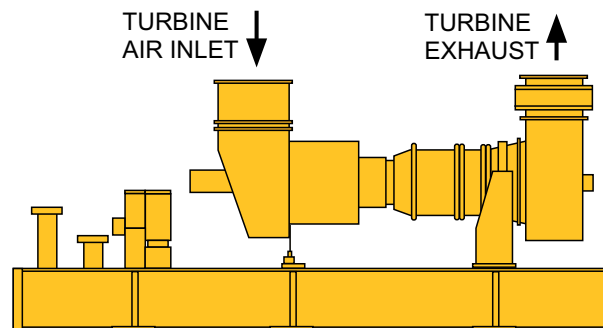
Length: 9.1 m (29' 11")

Width: 2.8 m (9' 2")

Height: 3.4 m (11' 0")

Typical Weight: 33 565 kg (74,000 lb)

\*Driver package only, dry weight,  
unenclosed height



DS100MD-003M