

General Specifications

Mars[®] 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[™])
 - 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[™] 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%

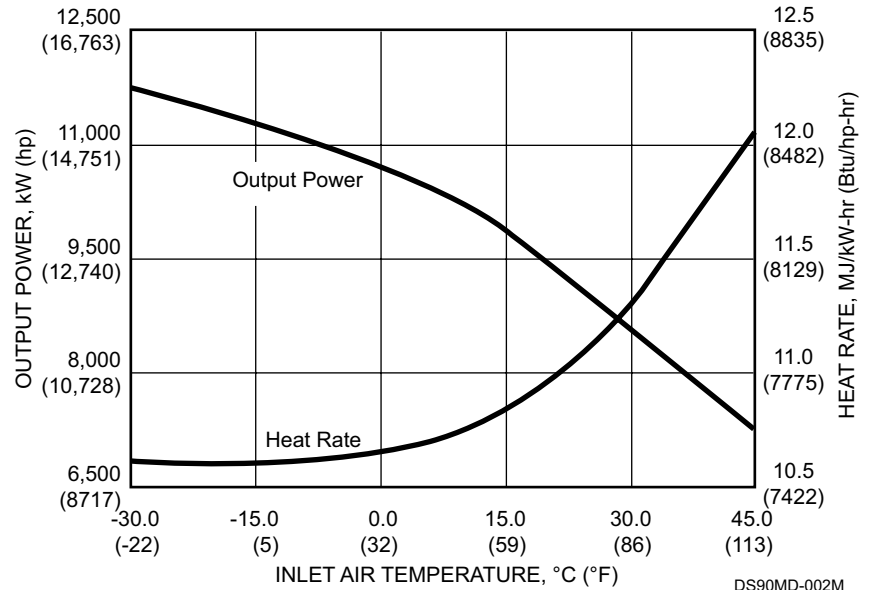
Natural gas fuel with
LHV = 35 MJ/nm³ (940 Btu/scf)

Optimum power turbine speed

AC-driven accessories

Engine efficiency: 33.2%

Available Power



DS90MD-002M

Package Dimensions*

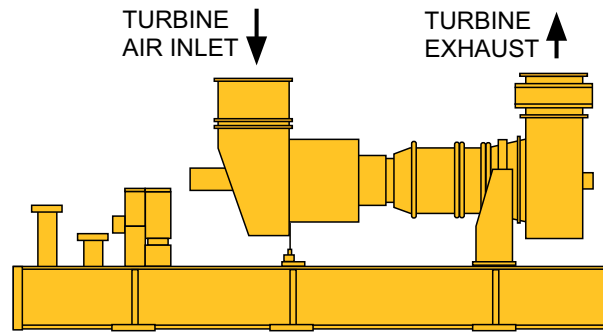
Length: 9.1 m (29' 11")

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