## General Specifications

### Mars® 100 Gas Turbine
- **Industrial, Two-Shaft**
- **Axial Compressor**
  - 15-Stage
  - Variable Inlet Guide Vanes and Stators
  - Pressure Ratio: 17:1
  - Inlet Airflow: 41.6 kg/sec (91.8 lb/sec)
  - Max. Speed: 11,170 rpm
  - 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
  - Full Tilting-Pad Thrust Bearing
- **Journal Bearings**
  - Tilting-Pad
- **Coatings**
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Platinum Aluminide
- **Vibration Transducer Type**
  - Proximity Probes
  - Velocity Pick-up

### Solar® Gas Compressors
- Single Body or Tandem
- Gearbox (if required)
- Dry Gas Seal System
- Driven Equipment Monitoring

### Key Package Features
- **Driver and Driven Skid with Drip Pans**
- **316L Stainless Steel Piping -4”**
- Compression-Type Tube Fittings
- Digital Display Panel
- **Electrical System Options**
  - NEC, Class I, Group D, Div 1
  - ATEX, Zone 2
  - CENELEC, Zone 1
- **Turbotronic™ Microprocessor Control System**
  - Onskid Control System
  - 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
  - Compressor Performance Map
  - Historical Displays
  - Remote Monitoring and Diagnostic Option
  - Printer/Logger
  - Process Controls
  - Compressor Anti-Surge Control
  - Field Programming
  - Predictive Emissions Monitoring
- **Start Systems**
  - Pneumatic
  - Direct Drive AC

### Solar® Turbines
- **A Caterpillar Company**

### Oil & Gas Applications

- **MARS 100 Gas Turbine Compressor Set**
- **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
- Accommodates Mars and Titan™ Gas Turbines
- 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: 11,860 kW (15,900 hp)
Heat Rate: 10,465 kJ/kW-hr (7395 Btu/hp-hr)
Exhaust Flow: 153,245 kg/hr (337,850 lb/hr)
Exhaust Temp.: 485°C (905°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/m³ (940 Btu/scf)
- Optimum power turbine speed
- AC-driven accessories
- Engine efficiency: 34.4%

**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*