**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: 41.6 kg/sec (91.8 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 ‘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
  - 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
- 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
Solar Turbines Incorporated
P.O. Box 85376
San Diego, CA 92186-5376

FOR MORE INFORMATION
Telephone: (+1) 619-544-5352
Email: infocorp@solarturbines.com
Internet: www.solarturbines.com

MARS 90
Gas Turbine Mechanical-Drive Package

Performance

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output Power</td>
<td>9690 kW (13,220 hp)</td>
</tr>
<tr>
<td>Heat Rate</td>
<td>10 830 kJ/kW-hr (7655 Btu/hp-hr)</td>
</tr>
<tr>
<td>Exhaust Flow</td>
<td>144 585 kg/hr (318,755 lb/hr)</td>
</tr>
<tr>
<td>Exhaust Temp.</td>
<td>465°C (870°F)</td>
</tr>
</tbody>
</table>

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: 33.2%

Available Power

<table>
<thead>
<tr>
<th>OUTPUT POWER, kW (hp)</th>
<th>12,500 (16,763)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11,000 (14,751)</td>
<td>9,500 (12,740)</td>
</tr>
<tr>
<td>8,000 (10,728)</td>
<td>6,500 (8717)</td>
</tr>
</tbody>
</table>

TURBINE AIR INLET
TURBINE EXHAUST

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

Solar Turbines Incorporated
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