General Specifications

Titan™ 250 Gas Turbine
- Industrial, Two-Shaft
- Axial Compressor
  - 16-Stage
  - Variable Inlet Guide Vane and 5 Variable Guide Vanes
  - Pressure Ratio: 24:1
  - Inlet Airflow: 73.2 kg/sec (155.2 lb/sec)
  - Vertically Split Case
- Combustion System
  - Annular-Type, Lean-Premixed, Dry, Low Emission (SoLoNOx™)
  - 14 Fuel Injectors (SoLoNOx)
  - Torch Ignitor System
- Gas Generator Turbine
  - 2-Stage, Axial
  - Max. Speed: 10,690 rpm
  - Thrust Bearing, Active: Tilting-Pad
  - Thrust Bearing, Inactive: Fixed Tapered Land
- Power Turbine
  - 3-Stage, Axial
  - Max. Speed: 6500 rpm
  - Full Tilting-Pad Thrust Bearing
- Journal Bearings
  - Tilting-Pad
- Turning Gear
- Coatings
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
- Vibration Transducer Type
  - Proximity Probes

Key Package Features
- Driver Skid with Drip Pans
- 316L Stainless Steel Piping ≤4” dia.
- Compression-Type Tube Fittings
- Digital Display Panel
- Electrical System Options
  - NEC, Class I, Group D, Div 1, or Div 2
  - 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
  - Compressor Performance Map
  - Historical Displays
  - Printer/Logger
  - Remote Monitoring and Diagnostics Option
  - Process Controls
  - Compressor Anti-Surge Control
  - Field Programming
- Start Systems
  - Direct-Drive AC
- Natural Gas Fuel System
- Integrated Lube Oil System
  - Turbine-Driven Main Pump
  - AC Motor-Driven Pre/Post Pump
  - DC (120 V) Motor-Driven Backup Pump
  - Oil Cooler and Oil Heater (Options)
  - Tank Vent Separator and Flame Trap
  - Lube Oil Filter
  - DC (120 V) Turning Gear System
- Package Skid Design
  - Accommodates Titan Turbines
  - Optional Modifications for Floating Production Applications
  - Modularized System Design
- Axial Compressor Cleaning Systems
  - On-Crank/On-Line
  - Portable Cleaning Tank
- Gearbox (if applicable)
  - Speed Incrementer
  - Speed Decreasers
- 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

<table>
<thead>
<tr>
<th>Output Power</th>
<th>23 790 kW (31,900 hp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8880 kJ/kW-hr (6275 Btu/hp-hr)</td>
</tr>
<tr>
<td>Exhaust Flow</td>
<td>253 440 kg/hr (558,740 lb/hr)</td>
</tr>
<tr>
<td>Exhaust Temp.</td>
<td>460°C (865°F)</td>
</tr>
</tbody>
</table>

Nominal rating – per ISO
At 15°C (59°F), at sea level
No inlet/exhaust losses
Relative humidity 60%
Natural gas fuel with LHV = 31.5 to 43.3 MJ/nm³ (800 to 1100 Btu/scf)
Optimum power turbine speed
AC-driven accessories
Engine efficiency: 39.9%

### Available Power

<table>
<thead>
<tr>
<th>Output Power</th>
<th>26 000 (34,870)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8880 kJ/kW-hr (6275 Btu/hp-hr)</td>
</tr>
</tbody>
</table>

**Inlet Air Temperature, °C (°F)**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>23 750 (31,850)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8800 kJ/kW-hr (6200 Btu/hp-hr)</td>
</tr>
</tbody>
</table>

**Exhaust Flow**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>19 250 (25,810)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8900 kJ/kW-hr (6300 Btu/hp-hr)</td>
</tr>
</tbody>
</table>

**Exhaust Temp.**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>17 000 (22,800)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>9300 kJ/kW-hr (6570 Btu/hp-hr)</td>
</tr>
</tbody>
</table>

**Heat Rate, MJ/kW-hr (Btu/hp-hr)**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>-30.0 (-22)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>10.0 (7070)</td>
</tr>
</tbody>
</table>

**Oil & Gas Applications**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>-15.0 (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>9.6 (6790)</td>
</tr>
</tbody>
</table>

**Exhaust Flow**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>0.0 (32)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>9.3 (6570)</td>
</tr>
</tbody>
</table>

**Exhaust Temp.**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>15.0 (59)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8.9 (6290)</td>
</tr>
</tbody>
</table>

**Exhaust Temp.**

<table>
<thead>
<tr>
<th>Output Power</th>
<th>30.0 (86)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rate</td>
<td>8.5 (6010)</td>
</tr>
</tbody>
</table>

### Package Dimensions*

- **Length:** 10.3 m (33' 9")
- **Width:** 3.4 m (11' 1")
- **Height:** 3.9 m (12' 9")
- **Typical Weight:** 49 900 kg (110,000 lb)

*Driver package only, dry weight, unenclosed height