General Specifications

Centaur® 50 Gas Turbine

- Industrial, Single-Shaft
- 11 Stage Axial Compressor
  - Variable Inlet Guide Vanes and Stators
  - Pressure Ratio: 10.6:1
  - Inlet Airflow: 18.8 kg/sec (41.4 lb/sec)
  - Vertically Split Case
- Combustion Chamber, Annular-Type
  - 12 Conventional Fuel Injectors or 12 Lean-Premixed, Dry Low Emissions SoLoNOx™ Injectors
  - Single Torch Ignitor System
- Power Turbine
  - 3-Stage Reaction
  - Clockwise Rotation
- Bearings
  - 3 Radial Journal: Tilt-Pad
  - 1 Thrust, Active: Tilt-Pad
  - 1 Thrust, Inactive: Fixed Tapered Land
- Coatings
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
- Vibration Transducer Type
  - Proximity Probes, 2 per Radial Bearing/2 per Thrust Bearing, horizontal and vertical
  - Velocity Pick-up*

Main Reduction Drive

- Epicyclic Type
  - 1500 or 1800 rpm (50 or 60 Hz)
  - Vibration monitoring; Acceleration Transducer

Generator

- 4 Pole, 3 Phase, 6 Wire, Wye Connected, Synchronous with Permanent Magnet Generator Exciter
- Available Construction Types:
  - Open Drip-Proof Construction
  - CACA/TEAAC (Closed Air, Cooling Air/Totally Enclosed, Air to Air Cooling)*
  - CACW/TEWAC (Closed Air, Cooling Water/Totally Enclosed, Water to Air Cooling)*
- Sleeve Bearings
- Vibration Monitoring; Velocity Transducers
- Vibration Monitoring; Displacement Transducers*

Package

- Mechanical Construction
  - Steel Base Frame with Drip Pans
  - 316L Stainless Steel Piping
  - Compression Type Tube Fittings
- Start System
  - Direct Drive AC Motor with VFD Control
- Package Electrical Certification
  - NEC, CSA Class 1, Group D, Div.2
- Fuel System
  - Natural Gas
  - Diesel*
  - Dual (Natural Gas and Diesel)*
  - Low BTU Gas*
- Integrated Lube Oil System
  - Turbine-Driven Lube Pump
  - AC Motor Driven Pre/Post Lube Pump
  - DC Motor Driven Backup Lube Pump
  - Air to Oil Cooler
  - Water to Oil Cooler*
  - Integral Lube Oil Tank
  - Lube Oil Tank Heater
  - Lube Oil Filter
  - Duplex Lube Oil Filter*
  - Oil Tank Vent Separator with Flame Arrestor
- Air Inlet and Exhaust Systems
  - Carbon Steel
  - Stainless Steel*
  - Barrier Type Filters
  - Self-Cleaning Filters
  - Inlet and Exhaust Silencers
  - Inlet Evaporative Cooler*
  - Inlet Chiller Coils*
- Enclosure
  - Complete Package
  - Driver Only*
  - Fire Detection and CO2 Suppression System
- NEMA Class F Insulation
- Class F Temperature Rise
- Class B Temperature Rise*
- Continuous Duty Rating Voltages:
  - 3300, 6600, 11 000 (50Hz)
  - 4160, 6900, 12 470, 13 200, 13 800 (60Hz)

Power Generation

CENTAUR 50
Gas Turbine Generator Set

* Option
**Performance**

Output Power: 4600 kWe

Heat Rate: 12,270 kJ/kWe-hr (11,630 Btu/kWe-hr)

Exhaust Flow: 68,680 kg/hr (151,410 lb/hr)

Exhaust Temp.: 510°C (950°F)

**Application Performance**

Steam (Unfired): 11.5 tonnes/hr (25,280 lb/hr)

Steam (Fired): 50.4 tonnes/hr (111,190 lb/hr)

Chilling (Absorp.): 9,890 kW (2810 refrigeration tons)

Nominal rating – per 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)

No accessory losses

Engine efficiency: 29.3%

(measured at generator terminals)

**Enclosure Access and Maintenance Space**

<table>
<thead>
<tr>
<th>Generator Maintenance</th>
<th>MINIMUM CLEARANCE REQUIRED FOR ENGINE REMOVAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0 m (9' 10&quot;)</td>
<td>9.8 m (32' 3&quot;)</td>
</tr>
<tr>
<td>2.6 m (8' 6&quot;)</td>
<td></td>
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</tbody>
</table>

Package Height: 3.2 m (10' 5")

Package Weight: 37,785 kg (83,300 lb)

Dry weight, enclosed height

FOR MORE INFORMATION

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