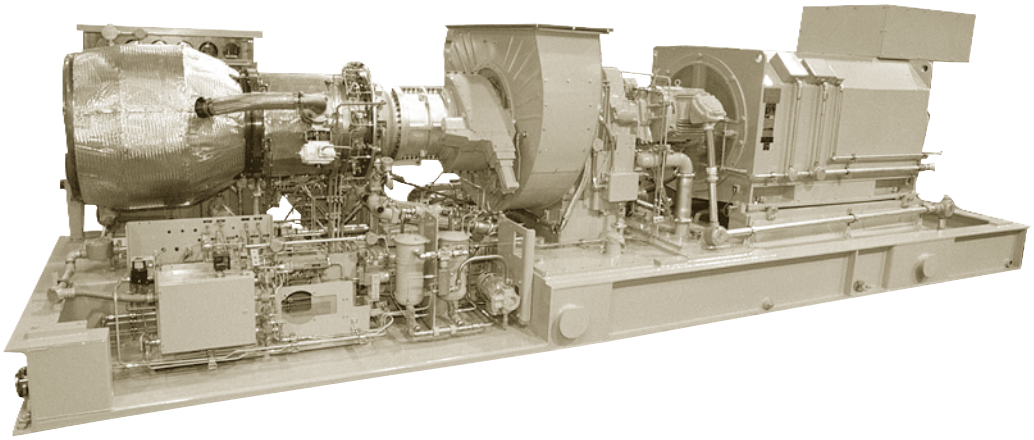
Solar® Turbines

A Caterpillar Company

CENTAUR 50

Gas Turbine Generator Set

Oil & Gas Applications



General Specifications

Centaur® 50 Gas Turbine

- Industrial, Single Shaft
- Axial Compressor
  - 11 Stage
  - Variable Inlet Guide Vanes
  - Pressure Ratio: 10:6:1
  - Inlet Airflow: 18.8 kg/sec (41.4 lb/sec)
  - Axially Split Case
- Combustion Chamber
  - Annular Type
  - Conventional or Lean-Premixed, Dry, Low Emission (*SoLoNOx*™)
  - 12 Fuel Injectors
  - Torch Ignitor System
- Turbine
  - 3 Stage, Reaction
  - Max. Speed: 14,950 rpm
- Bearings
  - Journal: Tilting Pad
  - Thrust: Tilting Pad (Active) and Fixed Tapered Land (Inactive)
- Coatings
  - Compressor Stators and Drums: Inorganic Aluminum
  - Turbine Nozzles and Blades: Precious Metal Diffusion Aluminide
- Axial Position Probe, Proximity Probes, Keyphasor and RTDs

Main Reduction Drive

- Epicyclic Type
- 1500 rpm (50 Hz) or 1800 rpm (60 Hz)
- Accelerometer

Generator

- Type: Salient Pole, 3 Phase, 6 Wire, Wye Connected, Synchronous, with Brushless Exciter
- Construction Options
  - Open Drip Proof
  - Weather Protected II (WPII)
  - Totally Enclosed Water/Air Cooled
- Sleeve Bearings
- Voltage Regulation
  - Solid-State Regulation with Permanent Magnet Generator
- NEMA Class F Insulation with B Temperature Rise
- Voltages: 3300 to 13,800 Volts
- Frequency: 50 or 60 Hz

Key Package Features

- Base Frame 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. 2
  - CENELEC Zone 2
- *Turbotronic*™ Microprocessor Control System
  - Freestanding Control Console (with offskid controls)
  - Video Display Unit
  - Temperature and Vibration Monitoring
  - Historical Displays
- Control Systems Options
  - Auxiliary Control Interface or Auxiliary Control Console (with onskid controls)
  - Remote Control and Display
  - 120-VDC Control Battery/Charger
  - Supervisory Communications Interface
  - Turbine Performance Map
  - Printer/Logger
  - Field Programming
  - Predictive Emissions Monitoring
- Start System: Direct Drive AC
- Fuel Systems
  - Natural Gas
  - Dual (Gas/Liquid)
  - Alternate Fuels
- Integrated Lube Oil System
  - Turbine-Driven Accessories
  - Oil Tank Vent Separator
  - Oil Tank Vent Flame Trap
- Lube Oil System Options
  - Oil Cooler
  - Oil Heater
  - Axial Compressor Cleaning Systems
  - On-Crank
  - On-Crank/On-Line
  - Certified Cleaning Tank
- Air Inlet and Exhaust System Options
- 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 Instruction Manual

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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)

Nominal Rating – per ISO
At 15°C (59°F), at sea level

No inlet/exhaust losses

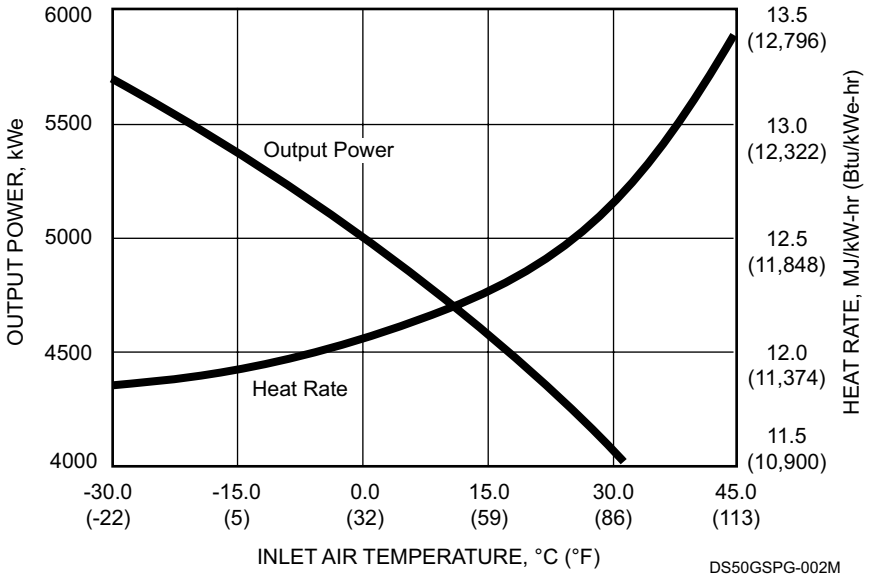
Relative humidity 60%

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

No accessory losses

Engine efficiency: 29.3% (measured at generator terminals)

Available Power



DS50GSPG-002M

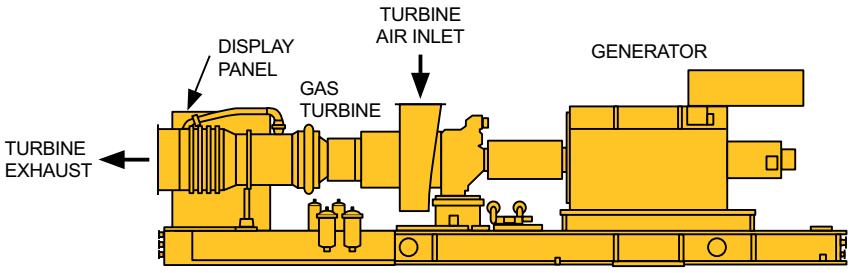
Package Dimensions

Length: 9.8 m (32' 3")

Width: 2.6 m (8' 6")

Height: 3.2 m (10' 5")

Typical Weight: 38 945 kg (85,860 lb)



DS50GS-003M

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DS50GS/1109/EO

FOR MORE INFORMATION

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