General Specifications

**Saturn® 20 Gas Turbine**

- **Industrial, Single-Shaft**
- **Axial Compressor**
  - 8-Stage
  - Pressure Ratio: 6.7:1
  - Inlet Airflow: 5.8 kg/sec (12.8 lb/sec)
- **Combustion Chamber**
  - Annular-Type
  - 12 Fuel Injectors
  - Torch Ignitor System
- **Turbine**
  - 3-Stage, Reaction
  - Max. Speed: 22,300 rpm
- **Bearings**
  - Journal: Multi-Ramp Sleeve
  - Thrust: Fixed Tapered Land
- **Coatings**
  - Compressor: Inorganic Aluminum
  - Turbine and Nozzle Blades: Precious Metal Diffusion Aluminide
  - Velocity Vibration Transducer

**Main Reduction Drive**

- Epicyclic Type
- 1500 or 1800 rpm

**Generator**

- Type: Salient Pole, 3 Phase, 6 Wire, Wye Connected, Synchronous, with Brushless Exciter
- Construction Options
  - Open Drip Proof
  - Antifriction (Ball) Bearings

**Key Package Features**

- **Voltage Regulation**
  - Solid-State Regulation with Permanent Magnet Generator
- **Insulation/Rise Options**
  - NEMA Class F with F Rise
  - NEMA Class F with B Rise
- **Voltages:** 380 to 4160 Volts
  - Frequency: 50 or 60 Hz

**Oil & Gas Applications**

**SATURN 20**

**Gas Turbine Generator Set**

**Start Systems**

- Pneumatic
- Direct-Drive AC
**Fuel Systems**

- Natural Gas
- Liquid
- Dual (Gas/Liquid)
- Alternate Fuels
**Integrated Lube Oil System**

- Turbine-Driven Accessories

**Oil System Options**

- Oil Cooler
- Oil Heater
- Tank Vent Separator
- Flame Trap
**Axial Compressor Cleaning Systems**

- On-Crank
- On-Crank/On-Line
- 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 Manuals
### Performance

- **Output Power**: 1210 kWe
- **Heat Rate**: 14,795 kJ/kWe-hr (14,025 Btu/kWe-hr)
- **Exhaust Flow**: 23,540 kg/hr (51,890 lb/hr)
- **Exhaust Temp.**: 505°C (940°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: 24.3% (measured at generator terminals)

### Package Dimensions

- **Length**: 6.7 m (21' 11")  
- **Width**: 2.4 m (8' 0")  
- **Height**: 2.7 m (8' 11")  
- **Typical Weight**: 10,530 kg (23,215 lb)

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FOR MORE INFORMATION  
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