

General Specifications

Gas Turbine

- Mercury™ 50 Recuperated Gas Turbine
- Industrial, Single-Shaft
- 10-Stage Axial Compressor
 - Variable Inlet Guide Vanes and Stators
 - Compression Ratio: 9.9:1
 - Inlet Airflow: 39.2 lb/sec (17.9 kg/sec)
 - Vertically Split Case
- Combustion Chamber, Annular Type
 - Ultra-Lean-Premix Combustion System
 - 8 Fuel Injectors
 - Single Torch Ignitor System
- Proximity Probe Vibration Transducers
- Turbine
 - 2-Stage, Reaction
 - Clockwise Rotation
- Bearings
 - 2 Radial: Viscous Damped Roller Bearings
 - 1 Thrust/Radial: Viscous Damped Split Inner Race Ball Bearing

Recuperator

- Primary Surface Type

Main Reduction Drive

- Epicyclic
 - 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 Exciter
- Available Construction Type:
 - Open Drip-Proof
- Sleeve Bearings
- Vibration Monitoring: Velocity Transducers
- Class F Temperature Rise
- Class B Temperature Rise*

- NEMA Class F Insulation with F Rise
- Continuous Duty Rating Voltages:
 - 3300, 6600, 11,000 (50Hz)
 - 4160, 6900, 12,470, 13,800V(60 Hz)

Package

- Mechanical Construction
 - Steel Base Frame with Drip Pans and Generator Alignment
 - 316L Stainless Steel Piping
- Start System
 - Direct Drive AC Motor with VFD Control
- Package Electrical Certification
 - NEC, CSA Class 1, Group D, Div 2
- Fuel System
 - Natural Gas
 - Landfill Gas*
 - Digester Gas*
- Integrated Lube Oil System
 - Main/Pre/Post Lube PumpBackupLube Pump
 - Air and Oil Cooler
 - Water/Oil Lube Oil Cooler*
 - Integral Lube Oil Tank
 - Lube Oil Tank Heater
 - Simplex Lube Oil Filter
 - Duplex Lube Oil Filters*
 - Oil Mist Eliminator
 - Vent Flame Trap
- 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
 - Fire Detection and CO2 Suppression System

- Turbine Compressor Cleaning Systems
 - On-Crank
 - Portable Cleaning Tank*
- Package Power
 - 120VDC Battery/Charger System*
- Turbotronic® On-skid Gas Turbine Control System
 - Combination Gas Turbine and Control System
 - Standard Display with Discrete Event Log, Strip Chart, Historical Trend, Maintenance Screen
 - Vibration and Temperature Monitoring
 - English Display Text and Labels
 - Spanish, Portuguese, German, French or Simplified Chinese Display Text and Labels*
 - Auxiliary and Remote Display/Control Terminals*
 - Auto Synchronizing
 - KW Import Control
 - KVAR/Power Factor Control*
 - ControlNet Redundant Media, Ethernet or Modbus RS232C/422/485 Supervisory Interface*
 - Heat Recovery Application Interface*
 - Multi-Unit Applications: Load Shed Control, Import/Export or kW/KVAR Control Panels*
 - InSight Platform™ Equipment Health Management
 - Printer/Logger
- Documentation
 - Drawings
 - Quality Control Data Book
 - Test Reports
 - Operation and Maintenance Manuals
- Factory Testing of Turbine and Package
 - Non-Dynamic
 - Dynamic

Nominal Performance*

Output Power	4600 kW
Heat Rate	9350 kJ/kWe-hr (8865 Btu/kWe-hr)
Exhaust Flow	63 700 kg/hr (140,400 lb/hr)
Exhaust Temperature	365°C (690°F)

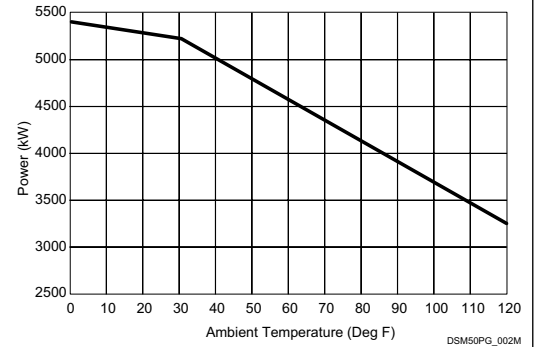
*ASSUMPTIONS

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: 38.5%
(measured at generator terminals)

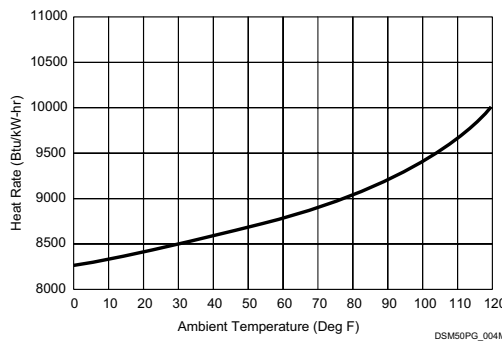
Application Performance

Steam (Unfired)	6.0 tonnes/hr (13,125 lb/hr)
Steam (Fired)	47.1 tonnes/hr (103,865 lb/hr)
Chilling (Absorp.)	5140 kW (1460 refrigeration tons)

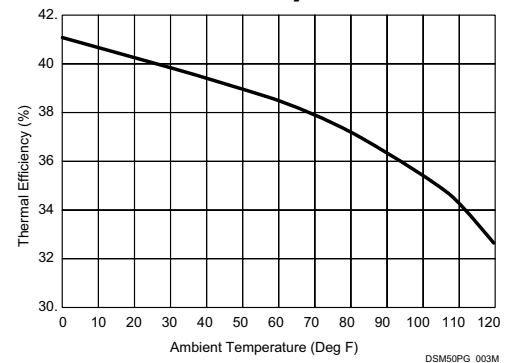
Available Power



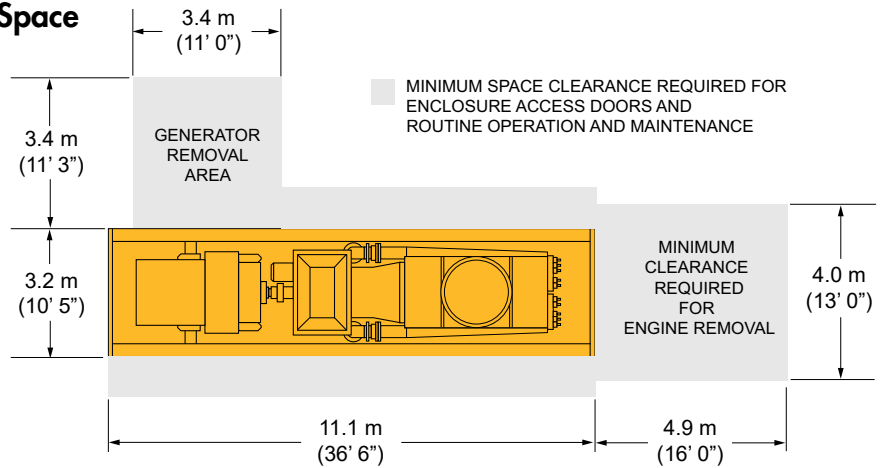
Heat Rate



Thermal Efficiency



Enclosure Access and Maintenance Space



DSM50PG-003C

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