DIESEL GENERATOR SET
MTU 12V2000 DS800

800 kWe / 60 Hz / Standby
208 - 4160V

Reference MTU 12V2000 DS800 (725 kWe) for Prime Rating Technical Data

SYSTEM RATINGS

Standby

<table>
<thead>
<tr>
<th>Voltage (L-L)</th>
<th>208V**</th>
<th>240V**</th>
<th>380V**</th>
<th>480V**</th>
<th>600V</th>
<th>4160V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PF</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
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<tr>
<td>Hz</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>kW</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
<td>800</td>
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</tr>
<tr>
<td>kVA</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td>Amps</td>
<td>2776</td>
<td>2406</td>
<td>1519</td>
<td>1203</td>
<td>962</td>
<td>139</td>
</tr>
<tr>
<td>skVA@30%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Dip</td>
<td>2125</td>
<td>2125</td>
<td>2710</td>
<td>3175</td>
<td>3340</td>
<td>1990</td>
</tr>
<tr>
<td>Generator Model*</td>
<td>LSA 49.1 L1</td>
<td>LSA 49.1 L1</td>
<td>LSA 49.1 L8</td>
<td>LSA 49.1 L9</td>
<td>LSA 49.1 L9</td>
<td>LS 50.2 L5</td>
</tr>
<tr>
<td>Temp Rise</td>
<td>130 °C/40 °C</td>
<td>130 °C/40 °C</td>
<td>130 °C/40 °C</td>
<td>130 °C/40 °C</td>
<td>130 °C/40 °C</td>
<td>130 °C/40 °C</td>
</tr>
<tr>
<td>Connection</td>
<td>12 LEAD WYE</td>
<td>12 LEAD DELTA</td>
<td>6 LEAD WYE</td>
<td>6 LEAD WYE</td>
<td>6 LEAD WYE</td>
<td>6 LEAD WYE</td>
</tr>
</tbody>
</table>

* Consult the factory for alternate configuration.
** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// Emissions – EPA Tier 2 Certified

// Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// Seismic Certification – Optional
- IBC Certification

// UL 2200 / CSA – Optional
- UL 2200 Listed
- CSA Certified

// Performance Assurance Certification (PAC)
- Generator Set Tested to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// Power Rating
- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 85%.
STANDARD FEATURES*

// MTU Onsite Energy is a single source supplier
// Global Product Support
// 2 Year Standard Warranty
// 12V 2000 Diesel Engine
  - 23.9 Liter Displacement
  - Electronic Unit Pump Injection
  - 4-Cycle
// Complete Range of Accessories

// Generator
- Brushless, Rotating Field Generator
- 2/3 Pitch Windings
- AREP supply to regulator
- 300% Short Circuit Capability
// Digital Control Panel(s)
- UL Recognized, CSA Certified, NFPA 110
- Complete System Metering
- LCD Display
// Cooling System
- Integral Set-Mounted
- Engine Driven Fan

STANDARD EQUIPMENT*

// Engine
Air Cleaners
Oil Pump
Oil Drain Extension & S/O Valve
Full Flow Oil Filter
Closed Crankcase Ventilation
Jacket Water Pump
Inter Cooler Water Pump
Thermostats
Blower Fan & Fan Drive
Radiator - Unit Mounted
Electric Starting Motor - 24V
Governor - Electronic Isochronous
Base - Structural Steel
SAE Flywheel & Bell Housing
Charging Alternator - 24V
Battery Box & Cables
Flexible Fuel Connectors
Flexible Exhaust Connection
EPA Certified Engine

No Load to Full Load Regulation
Brushless Alternator with Brushless Pilot Exciter
4 Pole, Rotating Field
130 °C Maximum Standby Temperature Rise
1 Bearing, Sealed
Flexible Coupling
Full Amortisseur Windings
125% Rotor Balancing
3-Phase Voltage Sensing
±0.25% Voltage Regulation
100% of Rated Load - One Step
5% Maximum Total Harmonic Distortion

// Digital Control Panel(s)
Digital Metering
Engine Parameters
Generator Protection Functions
Engine Protection
CANBus ECU Communications
Windows®-Based Software
Multilingual Capability
Remote Communications to RDP-110 Remote Annunciator
Programmable Input and Output Contacts
UL Recognized, CSA Certified, CE Approved
Event Recording
IP 54 Front Panel Rating with Integrated Gasket
NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.
APPLICATION DATA

// Engine

Manufacturer: MTU
Model: 12V 2000 G85 TB
Type: 4-Cycle
Arrangement: 12-V
Displacement: L (in³) 23.9 (1,457)
Bore: cm (in) 13 (5.1)
Stroke: cm (in) 15 (5.9)
Compression Ratio: 16:1
Rated RPM: 1,800
Engine Governor: Electronic Isochronous (ADEC)
Maximum Power: kW (bhp) 890 (1,194)
Speed Regulation: ±0.25%
Air Cleaner: Dry

// Fuel Consumption

At 100% of Power Rating: L/hr (gal/hr) 224 (59)
At 75% of Power Rating: L/hr (gal/hr) 168 (45)
At 50% of Power Rating: L/hr (gal/hr) 114 (30)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F) 50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H₂O) 0.12 (0.5)
Water Pump Capacity: L/min (gpm) 833 (220)
After Cooler Pump Capacity: L/min (gpm) 258 (68)
Heat Rejection to Coolant: kW (BTUM) 315 (17,914)
Heat Rejection to After Cooler: kW (BTUM) 270 (15,355)
Heat Radiated to Ambient: kW (BTUM) 82.1 (4,670)
Fan Power: kW (hp) 34.5 (46.3)

// Liquid Capacity (Lubrication)

Total Oil System: L (gal) 77 (20.3)
Engine Jacket Water Capacity: L (gal) 110 (29.1)
After Cooler Water Capacity: L (gal) 20 (5.3)
System Coolant Capacity: L (gal) 372 (98.3)

// Electrical

Electric Volts DC 24
Cold Cranking Amps Under -17.8 °C (0 °F) 2,800

// Fuel System

Fuel Supply Connection Size: #12 JIC 37° Male
Fuel Return Connection Size: #12 JIC 37° Male
Maximum Fuel Lift: m (ft) 3 (10)
Recommended Fuel: Diesel #2
Total Fuel Flow: L/hr (gal/hr) 480.7 (127)

// Air Requirements

Aspirating: *m³/min (SCFM) 66 (2,331)
Air Flow Required for Rad.
Cooled Unit: *m³/min (SCFM) 1,200 (42,400)
Remote Cooled Applications;
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m³/min (SCFM) 300 (10,532)

* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F) 580 (1,076)
Gas Volume at Stack Temp: m³/min (CFM) 174 (6,145)
Maximum Allowable Back Pressure: kPa (in. H₂O) 8.5 (34.1)
WEIGHTS AND DIMENSIONS

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (less tank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open Power Unit (OPU)</td>
<td>4,674.75 x 2,292 x 2,341.3 mm (184 x 90.24 x 92.18 in)</td>
<td>7,883 kg (17,379 lb)</td>
</tr>
</tbody>
</table>

Weights and dimensions are based on open power units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

SOUND DATA

<table>
<thead>
<tr>
<th>Unit Type</th>
<th>Standby Full Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0: Open Power Unit dBA</td>
<td>92</td>
</tr>
</tbody>
</table>

Sound data is provided at 7 m (23 ft). Generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

EMISSIONS DATA

<table>
<thead>
<tr>
<th>NOx + NMHC</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.66</td>
<td>0.45</td>
<td>0.01</td>
</tr>
</tbody>
</table>

All units are in g/hp-hr and shown at 100% load (not comparable to EPA weighted cycle values).

Emission levels of the engine may vary with ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data was obtained in compliance with US EPA regulations. The weighted cycle value (not shown) from each engine is guaranteed to be within the US EPA Standards.

RATING DEFINITIONS AND CONDITIONS

// Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. No overload capability for this rating. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, and AS 2789. Average load factor: ≤ 85%.

// Deration Factor:
**Altitude**: Consult your local MTU Onsite Energy Power Generation Distributor for altitude derations.
**Temperature**: Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

C/F = Consult Factory/MTU Onsite Energy Distributor
N/A = Not Available