Diesel Generator Set

12V2000 DS850

Air charge-air cooling/850kVA/50 Hz/
standby power (fuel consumption optimized)/380 - 415V

Optional equipment shown. Standard equipment and colors (base frame, generator: grey, engine: blue) may vary.

Product highlights

Benefits
— Industry-leading average load factor
— Outstanding fuel economy
— Optimized maintenance intervals
— Low installation costs
— Best-in-class reliability and availability
— Lifting vertically or with diagonal pull
— Compact design

System ratings

<table>
<thead>
<tr>
<th>Standby power</th>
<th>12V2000 DS850</th>
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<th>12V2000 DS850</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (L-L)</td>
<td>380V</td>
<td>400V</td>
<td>415V</td>
</tr>
<tr>
<td>Phase</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>
</tr>
<tr>
<td>Hz</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>kW</td>
<td>680</td>
<td>680</td>
<td>664</td>
</tr>
<tr>
<td>kVA</td>
<td>850</td>
<td>850</td>
<td>830</td>
</tr>
<tr>
<td>Amps</td>
<td>1291</td>
<td>1227</td>
<td>1155</td>
</tr>
<tr>
<td>Generator model</td>
<td>574RSL7066</td>
<td>574RSL7066</td>
<td>574RSL7066</td>
</tr>
<tr>
<td>Temp rise</td>
<td>150°C/40°C</td>
<td>150°C/40°C</td>
<td>150°C/40°C</td>
</tr>
<tr>
<td>Connection</td>
<td>6 LEAD HI WYE</td>
<td>6 LEAD HI WYE</td>
<td>6 LEAD HI WYE</td>
</tr>
</tbody>
</table>

1 Power available up to 40°C/400 m
Certifications and standards

- Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Performance Assurance Certification (PAC)
  - Engine-generator set tested according to ISO 8528-5 for transient response
  - Verified product design, quality and performance integrity
  - All engine systems are prototype and factory tested
- Power rating
  - Permissible average power output during 24 hours of operation up to 85%

Standard equipment

Engine
- Air filters
- Oil pump for draining
- Full flow oil filters
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Exhaust manifold – dry
- Belt driven radiator fan
- Radiator – unit mounted
- Electric starting motor – 24V
- Governor – electronic isochronous
- Base – formed steel
- SAE flywheel & bell housing
- Charging alternator
- Flexible fuel connectors
- Flexible exhaust connection

Generator
- NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor
- VDE 0530, IEC 60034-1, BS 4999, BS 5000, CSA 22.2-100, AS 1359
- Sustained short circuit current of up to 250% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof IP23
- Superior voltage waveform
- Digital, volts-per-hertz regulator
- No load to full load regulation
- Brushless alternator with brushless pilot exciter
- 4 Pole, rotating field
- 150 °C maximum standby temperature rise
- Heavy duty shielded ball bearings with a minimum B-10 life of 40,000 hrs
- Flexible coupling
- Full amortisseur windings
- 3-phase voltage sensing
- ±0.25% voltage regulation
- 100% of rated load – one step according to NFPA 110
- 3% maximum harmonic content

Standard features

- The engine-generator set complies to G3
- Engine generator set tested according to ISO 8528-5 for transient response
- Accepts rated load in one step as per NFPA 110
- All engine-generator sets are type and factory tested
- Global product support
- Cooling System (integral set-mounted; engine driven fan)
- 12V2000 diesel engine (23.88 liter (1457 cu inch) displacement; 4-stroke)
- Engine-generator resiliently mounted
- Complete range of accessories
- Brushless, rotating field generator (PMG excitation; 250% short circuit capability; 2/3 pitch stator windings)
- Complete system metering
- LCD display

1 Represents standard product only. Consult your local MTU distributor for additional configurations.
### Application data

#### Engine

**Manufacturer**: MTU  
**Model**: 12V2000G65TD  
**Type**: 4-stroke  
**Arrangement**: 12V  
**Displacement/cylinder**: l (cu inch) 1.99 (12)  
**Bore**: mm (inch) 130 (5.1)  
**Stroke**: mm (inch) 150 (5.9)  
**Compression ratio**: 16:1  
**Rated speed**: rpm 1500  
**Engine governor**: electronic isochronous  
**Max power**: kWm (bhp) 765 (1026)  
**Speed regulation**: ±0.25%  
**Air filter**: dry  
**Lube oil capacity**  
**Total oil system**: l (gal) 77 (20)

#### Fuel system

**Fuel supply connection size**: M22 x 1,5 - 60°/male  
**Fuel return connection size**: M12 x 1,5 - 60°/male  
**Maximum fuel lift**: m (ft) 5 (16)  
**Recommended fuel**: see MTU fluids & lubrication spec.  
**Total fuel flow**: l/hr (gal/hr) 480 (127)

#### Fuel consumption

<table>
<thead>
<tr>
<th></th>
<th>gal/hr</th>
<th>l/hr</th>
<th>g/kwh</th>
</tr>
</thead>
<tbody>
<tr>
<td>At 100% of power rating:</td>
<td>49</td>
<td>187</td>
<td>203</td>
</tr>
<tr>
<td>At 75% of power rating:</td>
<td>37</td>
<td>140</td>
<td>202</td>
</tr>
<tr>
<td>At 50% of power rating:</td>
<td>25</td>
<td>96</td>
<td>208</td>
</tr>
</tbody>
</table>

#### Electrical

**Electric Volts DC**: 24  
**Cold cranking amps under -17.8°C (0°F)**: 1000

#### Air requirements

**Aspirating**: m³/min (SCFM) 54 (1905)  
**Air flow required for rad. cooled unit**: m³/min 1062 (37467)

#### Cooling/radiator system

**Ambient capacity of radiator**: °C 40 (optional 50)  
**Max. restriction of cooling air, intake, and discharge side of rad.**: kPa (in. H₂O) 0.2 (0.803)  
**Water pump capacity**: l/min (gpm) 667 (176)  
**Heat rejection to coolant**: kW (BTUM) 330 (18,767)  
**Heat rejection to after cooler**: kW (BTUM) 160 (9,099)  
**Heat radiated to ambient**: kW (BTUM) 40 (2,275)  
**Engine coolant capacity**: l (gal) 90 (24)  
**Coolant to cooler temperature**: °C (°F) 95 (203)

#### Exhaust system

**Gas temp. (stack)**: °C (°F) 565 (1049)  
**Gas volume flow temp.**: m³/min (SCFM) 150 (5292)  
**Maximum allowable back pressure**: kPA 8.5 (34)

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1 Values in accordance with ISO 3046-1. Conversion calculated with fuel density of 0.83 g/mL.  
2 System ratings at 50°C may differ.  
3 Air density = 1.184 kg/m³ (0.0739 lbm/ft³)
Weights and dimensions

![Drawing of an engine-generator set](image)

Drawing above for illustration purposes only, based on standard open power 400 Volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (dry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>4242 x 1750 x 2072 mm (167 x 69 x 82 inch)</td>
<td>5477 kg (12,075 lbs)</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 engine-generator set.

Sound data

- Consult your local MTU distributor for sound data.

Emissions data

- Consult your local MTU distributor for emissions data.

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%.
  Operating hours/year: max. 500.
- Consult your local MTU distributor for derating information.