Diesel Generator Set

12V2000 DS850

Water charge-air cooling/770kVA/50 Hz/prime 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>
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</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>616</td>
<td>616</td>
<td>616</td>
</tr>
<tr>
<td>kVA</td>
<td>770</td>
<td>770</td>
<td>770</td>
</tr>
<tr>
<td>Amps</td>
<td>1170</td>
<td>1111</td>
<td>1071</td>
</tr>
<tr>
<td>Generator model</td>
<td>574RSL7066</td>
<td>574RSL7066</td>
<td>574RSL7066</td>
</tr>
<tr>
<td>Temp rise</td>
<td>125°C/40°C</td>
<td>125°C/40°C</td>
<td>125°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>
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</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 75%

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 MGI, 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
- 125 °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**: 1.99 (121)
- **Bore**: 130 (5.1)
- **Stroke**: 150 (5.9)
- **Compression ratio**: 16:1
- **Rated speed**: 1500 rpm
- **Engine governor**: electronic isochronous
- **Max power**: 695 (932) kWm (bhp)
- **Speed regulation**: ±0.25%
- **Air filter**: dry

**Lube oil capacity**

- **Total oil system**: 77 (20) l (gal)

**Electrical**

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

**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**: 5 (16)
- **Recommended fuel**: see MTU fluids & lubrication spec.
- **Total fuel flow**: 480 (127) l/hr (gal/hr)

**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>44</td>
<td>168</td>
<td>201</td>
</tr>
<tr>
<td>At 75% of power rating:</td>
<td>34</td>
<td>127</td>
<td>203</td>
</tr>
<tr>
<td>At 50% of power rating:</td>
<td>23</td>
<td>88</td>
<td>210</td>
</tr>
</tbody>
</table>

**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) 0.200 (0.8)
- **Water pump capacity**: l/min (gpm) 667 (176)
- **Heat rejection to coolant**: kW (BTUM) 310 (17,629)
- **Heat rejection to after cooler**: kW (BTUM) 135 (7,677)
- **Heat radiated to ambient**: kW (BTUM) 40 (2,275)
- **Engine coolant capacity**: l (gal) 90 (24)
- **Coolant to cooler temperature**: °C (°F) 95 (203)

**Air requirements**

- **Aspirating**: m³/min (SCFM) 51 (1799)
- **Air flow required for rad. cooled unit**: m³/min 1062 (37467)

**Exhaust system**

- **Gas temp. (stack)**: °C (°F) 555 (1031)
- **Gas volume flow temp.**: m³/min (SCFM) 138 (4869)
- **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

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (dry/less tank)</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>

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.

Sound data

Consult your local MTU distributor for sound data.

Emissions data

Consult your local MTU distributor for emissions data.

Rating definitions and conditions

Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514 and AS 2789.
Average load factor: ≤ 75%.
Consult your local MTU distributor for derating information.