MTU 16V4000 DS2250

380V – 11 kV/50 Hz/standby power/fuel consumption optimized
16V4000G74F/water charge air cooling

Optional equipment and finishing shown. Standard may vary.

Product highlights

Benefits
— Low fuel consumption
— Optimized system integration ability
— High reliability
— High availability of power
— Long maintenance intervals

MTU Onsite Energy is a single-source supplier

Support
— Global product support offered

Standards
— Engine-generator set is designed and manufactured in facilities certified to standards ISO 2008:9001 and ISO 2004:14001
— Generator set complies to ISO 8528
— Generator meets NEMA MG1, BS5000, ISO, DIN EN and IEC standards
— NFPA 110

Power rating
— System ratings: 2260 kVA - 2370 kVA
— Accepts rated load in one step per NFPA 110
— Generator set complies to G3 according to ISO 8528-5
— Generator set exceeds load steps according to ISO 8528-5

Performance assurance certification (PAC)
— Engine-generator set tested to ISO 8528-5 for transient response
— 85% load factor
— Verified product design, quality and performance integrity
— All engine systems are prototype and factory tested

Complete range of accessories available
— Control panel
— Power panel
— Circuit breaker/power distribution
— Fuel system
— Fuel connections with shut-off valve mounted to base frame
— Starting/charging system
— Exhaust system
— Mechanical and electrical driven radiators
— Medium and oversized voltage alternators

Emissions
— Fuel consumption optimized

Certifications
— CE certification option
— Unit certificate acc. to BDEW (German Grid-Code)
Application data

Engine
Manufacturer MTU
Model 16V4000G74F
Type 4-cycle
Arrangement 12V
Displacement: l 76.3
Bore: mm 170
Stroke: mm 210
Compression ratio 16.4
Rated speed: rpm 1500
Engine governor ECU 9
Max power: kWm 1965
Air cleaner Dry

Fuel system
Maximum fuel lift: m 5
Total fuel flow: l/min 20

Fuel consumption
At 100% of power rating: 452.23 191
At 75% of power rating: 342.7 193
At 50% of power rating: 240.3 203

Combustion air requirements
Coolant flow rate (HT circuit): m³/hr 68.5
Coolant flow rate (LT circuit): m³/hr 30
Heat rejection to coolant: kW 730
Heat radiated to charge air cooling: kW 320
Heat radiated to ambient: kW 90
Fan power for electr. radiator (40°C): kW 38

Cooling/radiator system
Coolant flow rate (HT circuit): m³/hr 68.5
Coolant flow rate (LT circuit): m³/hr 30
Heat rejection to coolant: kW 730
Heat radiated to charge air cooling: kW 320
Heat radiated to ambient: kW 90
Fan power for electr. radiator (40°C): kW 38

Exhaust system
Exhaust gas temp. (after turbocharger): °C 485
Exhaust gas volume: m³/s 5
Maximum allowable back pressure: mbar 85
Minimum allowable back pressure: mbar 30

Liquid capacity (lubrication)
Total oil system capacity: l 300
Engine jacket water capacity: l 175
Intercooler coolant capacity: l 50

Standard and optional features

System ratings (kW/kVA)

<table>
<thead>
<tr>
<th>Generator model</th>
<th>Voltage</th>
<th>fuel consumption optimized without radiator</th>
<th>fuel consumption optimized with mechanical radiator</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>kWe</td>
<td>kVA*</td>
</tr>
<tr>
<td>Leroy Somer LSA52.3 S7 (Low voltage Leroy Somer standard)</td>
<td>380 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td></td>
<td>400 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td></td>
<td>415 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td>Leroy Somer LSA52.3 L12 (Low voltage Leroy Somer oversized)</td>
<td>380 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td></td>
<td>400 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td></td>
<td>415 V</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td>Marathon 744RSL7092 (Low voltage Marathon)</td>
<td>380 V</td>
<td>1848</td>
<td>2310</td>
</tr>
<tr>
<td></td>
<td>400 V</td>
<td>1848</td>
<td>2310</td>
</tr>
<tr>
<td></td>
<td>415 V</td>
<td>1808</td>
<td>2260</td>
</tr>
<tr>
<td>Marathon 1020FDL7093 (Low voltage Marathon oversized)</td>
<td>380 V</td>
<td>1848</td>
<td>2310</td>
</tr>
<tr>
<td></td>
<td>400 V</td>
<td>1848</td>
<td>2310</td>
</tr>
<tr>
<td></td>
<td>415 V</td>
<td>1808</td>
<td>2260</td>
</tr>
<tr>
<td>Marathon 1020FDL7093 (Low voltage Marathon engine output optimized)</td>
<td>380 V</td>
<td>1896</td>
<td>2370</td>
</tr>
<tr>
<td></td>
<td>400 V</td>
<td>1848</td>
<td>2310</td>
</tr>
<tr>
<td></td>
<td>415 V</td>
<td>1808</td>
<td>2260</td>
</tr>
<tr>
<td>Marathon 1020FDH7097 (Medium volt. marathon)</td>
<td>11 kV</td>
<td>1864</td>
<td>2330</td>
</tr>
<tr>
<td></td>
<td>11 kV</td>
<td>1880</td>
<td>2350</td>
</tr>
</tbody>
</table>

* cos phi = 0.8

1 All data refers only to the engine and is based on ISO standard conditions (25°C and 100m above sea level).
2 Values referenced are in accordance with ISO 3046-1. Conversion calculated with fuel density of 0.83 g/ml. All fuel consumption values refer to rated engine power.
Standard and optional features

Engine
- 4-Cycle
- Standard single stage air filter
- Oil drain extension & shut-off valve

Generator
- 4 pole three-phase synchronous generator
- Brushless, self-excited, self-regulating, self-ventilated
- Digital voltage regulator
- Anti condensation heater
- Stator winding Y-connected, accessible neutral (brought out)
- Protection IP23
- Insulation class H, utilization acc. to H
- Radio suppression EN55011, group 1, cl. B
- Short circuit capability 3In for 10sec
- Winding and bearing RTDs (without monitoring)
- Excitation by AREP
- Mounting of CT’s: 2 core CT’s
- Winding pitch: 2/3 winding
- Voltage setpoint adjustment ± 10%

Cooling system
- Jacket water pump
- Thermostat(s)
- Water charge air cooling
- Mechanical radiator
- Electrical driven front-end cooler
- Jacket water heater

Control panel
- Pre-wired control cabinet for easy application of customized controller (V1+)
- Island operation (V2)
- Automatic mains failure operation with ATS (V3a)
- Automatic mains failure operation incl. control of generator and mains breaker (V3b)
- Island parallel operation of multiple gensets (V4)
- Automatic mains failure operation with short (< 10s) mains parallel overlap synchronization (V5)
- Mains parallel operation of a single genset (V6)
- Mains parallel operation of multiple gensets (V7)
- Basler controller
- Deif controller
- Complete system metering
- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- SAE J1939 engine ECU communications
- Parametrization software
- Multilingual capability
- Multiple programmable contact inputs
- Multiple contact outputs

Power panel
- Available in 600x600 and 600x1000
- Phase monitoring relay 230V/400V
- Supply for battery charger
- Supply for jacket water heater
- Supply for anti condensation heating
- Plug socket cabinet for 230V compatible Euro/USA
- Supply for electrical driven radiator from 45kW – 75kW (PP 600x1000)

Represents standard features
Represents optional features
## Standard and optional features

### Circuit breaker/power distribution
- [ ] 3-pole circuit breaker
- [ ] 4-pole circuit breaker
- [ ] Manual-actuated circuit breaker
- [ ] Electrical-actuated circuit breaker
- [ ] Stand-alone solution in separate cabinet

### Fuel system
- [ ] Flexible fuel connectors mounted to base frame
- [ ] Fuel filter with water separator
- [ ] Fuel filter with water separator heavy-duty
- [ ] Switchable fuel filter with water separator
- [ ] Heavy-duty
- [ ] Seperate fuel cooler
- [ ] Fuel cooler integrated into cooling equipment

### Starting/charging system
- [ ] 24V starter
- [ ] Starter batteries, cables, rack, disconnect switch
- [ ] Battery charger

### Mounting system
- [ ] Welded base frame
- [ ] Resilient engine and generator mounting
- [ ] Modular base frame design

### Exhaust system
- [ ] Exhaust bellows with connection flange
- [ ] Exhaust silencer with 10 dB(A) sound attenuation
- [ ] Exhaust silencer with 30 dB(A) sound attenuation
- [ ] Exhaust silencer with 40 dB(A) sound attenuation
- [ ] Y-connection-pipe

- ■ Represents standard features
- □ Represents optional features
Weights and dimensions

Drawing above for illustration purposes only, based on a 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/less tank)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>4766 x 1810 x 2330 mm</td>
<td>12428 kg</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.