Diesel Generator Set

MTU 20V4000 DS2750

380V – 11 kV/50 Hz/prime power for stationary emergency/TA-Luft optimized
20V4000G14F/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

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: 2620 kVA - 2660 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
— TA-Luft optimized

Certifications
— CE certification option
— Unit certificate acc. to BDEW (German Grid-Code)
Application data 1)

**Engine**
Manufacturer  MTU 
Model  20V4000G14F 
Type  4-cycle 
Arrangement  20V 
Displacement: l  95.4 
Bore: mm  170 
Stroke: mm  210 
Compression ratio  16.4 
Rated speed: rpm  1500 
Engine governor  ECU 9 
Max power: kWm  2200 
Air cleaner  Dry 

**Fuel system**
Maximum fuel lift: m  5 
Total fuel flow: l/min  27 

**Fuel consumption** 2)
At 100% of power rating:  585.8 221 
At 75% of power rating:  423.4 213 
At 50% of power rating:  284.9 215 

**Liquid capacity (lubrication)**
Total oil system capacity: l  390 
Engine jacket water capacity: l  205 
Intercooler coolant capacity: l  50 

**Combustion air requirements**
Combustion air volume: m³/s  3.2 
Max. air intake restriction: mbar  50 

**Cooling/radiator system**
Coolant flow rate (HT circuit): m³/hr  80 
Coolant flow rate (LT circuit): m³/hr  32.5 
Heat rejection to coolant: kW  970 
Heat radiated to charge air cooling: kW  470 
Heat radiated to ambient: kW  105 
Fan power for electr. radiator (40°C): kW  70 

**Exhaust system**
Exhaust gas temp. (after turbocharger): °C  530 
Exhaust gas volume: m³/s  8.7 
Maximum allowable back pressure: mbar  85 
Minimum allowable back pressure: mbar  30 

**Standard and optional features**

**System ratings (kW/kVA)**

<table>
<thead>
<tr>
<th>Generator model</th>
<th>Voltage</th>
<th>2112</th>
<th>2640</th>
<th>4011</th>
<th>2048</th>
<th>2560</th>
<th>3890</th>
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<tbody>
<tr>
<td>Leroy Somer LSA53.2 M7 (Low voltage Leroy Somer standard)</td>
<td>380 V</td>
<td>kWel</td>
<td>kVA*</td>
<td>AMPS</td>
<td>kWel</td>
<td>kVA*</td>
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<td>2048</td>
<td>2560</td>
<td>134</td>
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</table>

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
- Closed crankcase ventilation
- Governor-electronic isochronous
- Common rail fuel injection
- TA-Luft optimized engine
- Governor-electronic isochronous
- Closed crankcase ventilation
- 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 3xIn 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%
- Meets NEMA MG-1, BS 5000, IEC 60034-1, VDE 0530, DIN EN 12601, AS1359 and ISO 8528 requirements
- Leroy Somer low voltage generator
- Marathon low voltage generator
- Oversized generator
- Medium voltage generator

#### Cooling system
- Jacket water pump
- Thermostat(s)
- Water charge air cooling
- Mechanical radiator
- Electrical driven front-end cooler
- Jacket water heater
- 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
- Event recording
- IP 54 front panel rating with integrated gasket
- Different expansion modules
- Remote annunciator
- Daytank control
- Generator winding temperature monitoring
- Generator bearing temperature monitoring
- Modbus TCP-IP

#### 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 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
- [ ] Switchable fuel filter with water separator heavy-duty
- [ ] Separate 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

<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>5760 x 1887 x 2332 mm</td>
<td>16919 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.

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. 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: ≤ 85%. Operating hours/year: max. 500.
- Consult your local MTU distributor for derating information.

Emissions data

<table>
<thead>
<tr>
<th>NOx + NMHC</th>
<th>CO</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1700</td>
<td>300</td>
<td>50</td>
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</table>

All units are in mg/Nm³

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided refers to ISO standard ambient conditions (20°C and 100m above sea level). The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation.