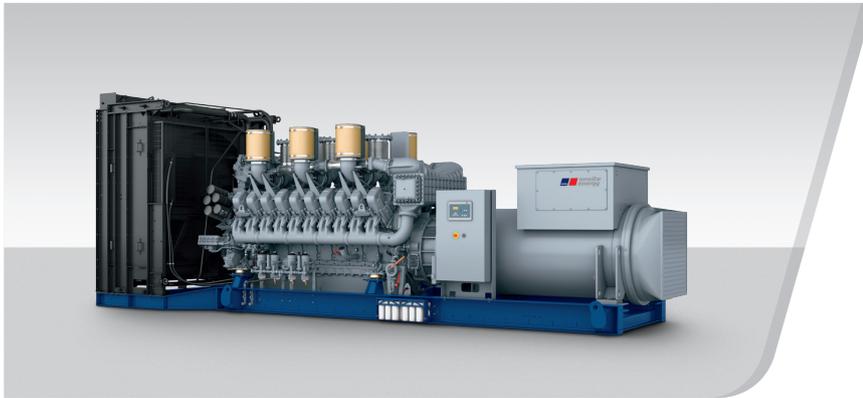


# DIESEL GENERATOR SET

## MTU 20V4000 DS3300

380V – 11 kV/50 Hz/Standby Power/Fuel Consumption Optimized  
MTU 20V4000G63L/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: 3230 kVA - 3430 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<sup>①</sup>

## // Engine

|                   |              |
|-------------------|--------------|
| Manufacturer      | MTU          |
| Model             | 20V4000G63L  |
| 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   | ADEC (ECU 7) |
| Max power: kWm    | 2850         |
| Air cleaner       | Dry          |

## // Fuel System

|                        |    |
|------------------------|----|
| Maximum fuel lift: m   | 5  |
| Total fuel flow: l/min | 27 |

// Fuel Consumption<sup>②</sup>

|                          | l/hr  | g/kwh |
|--------------------------|-------|-------|
| At 100% of power rating: | 666.1 | 194   |
| At 75% of power rating:  | 489.3 | 190   |
| At 50% of power rating:  | 338.2 | 197   |

## // 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: m <sup>3</sup> /s | 3.3 |
| Max. air intake restriction: mbar        | 50  |

## // Cooling/Radiator System

|   |      |
|---|------|
| Coolant flow rate (HT circuit): m <sup>3</sup> /h | 80   |
| Coolant flow rate (LT circuit): m <sup>3</sup> /h | 32.5 |
| Heat rejection to coolant: kW                     | 1050 |
| Heat radiated to charge air cooling: kW           | 500  |
| Heat radiated to ambient: kW                      | 105  |
| Fan power for electr. radiator (40°C): kW         | 70   |

## // Exhaust System

|  |     |
|--|-----|
| Exhaust gas temp. (after turbocharger): °C | 560 |
| Exhaust gas volume: m <sup>3</sup> /s      | 8.8 |
| Maximum allowable back pressure: mbar      | 85  |
| Minimum allowable back pressure: mbar      | 30  |

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

### // System Ratings (kW/kVA)

| Generator model                                | Voltage | Fuel consumption optimized 40°C/400m |      |      |                          |      |      |
|--|---------|--------------------------------------|------|------|--------------------------|------|------|
|  |         | without radiator                     |      |      | with mechanical radiator |      |      |
|  |         | kWel                                 | kVA* | AMPS | kWel                     | kVA* | AMPS |
| Leroy Somer LSA53.2 M12                        | 380 V   | 2728                                 | 3410 | 5181 | 2664                     | 3330 | 5059 |
| (Low voltage Leroy Somer standard)             | 400 V   | 2728                                 | 3410 | 4922 | 2664                     | 3330 | 4806 |
| Marathon 1030FDL7094                           | 415 V   | 2728                                 | 3410 | 4744 | 2664                     | 3330 | 4633 |
| (Low voltage Marathon)                         | 380 V   | 2664                                 | 3330 | 5059 | 2664                     | 3330 | 5059 |
|  | 400 V   | 2624                                 | 3280 | 4734 | 2624                     | 3280 | 4734 |
|  | 415 V   | 2584                                 | 3230 | 4494 | 2584                     | 3230 | 4494 |
| n.a.   | 380 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| (Low voltage Marathon oversized)               | 400 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| n.a.   | 415 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| (Low voltage Marathon engine output optimized) | 380 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| Marathon 1030FDH7102                           | 400 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| (Medium volt. marathon)                        | 415 V   | n.a.                                 | n.a. | n.a. | n.a.                     | n.a. | n.a. |
| Leroy Somer LSA54.1 XL11                       | 11 kV   | 2736                                 | 3420 | 180  | 2704                     | 3380 | 177  |
| (Medium volt. Leroy Somer)                     | 11 kV   | 2744                                 | 3430 | 180  | 2680                     | 3350 | 176  |

\* cos phi = 0,8

### // Engine

- 4-Cycle
- Standard single stage air filter
- Oil drain extension & shut-off valve
- Closed crankcase ventilation
- Governor-electronic isochronous
- Common rail fuel injection
- Fuel consumption optimized engine

### // 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

■ Represents standard features

□ Represents optional features

## STANDARD AND OPTIONAL FEATURES, CONTINUATION

---

### // Cooling System

- |  |   |
|--|---|
| <input checked="" type="checkbox"/> Jacket water pump        | <input type="checkbox"/> Mechanical radiator                |
| <input checked="" type="checkbox"/> Thermostat(s)            | <input type="checkbox"/> Electrical driven front-end cooler |
| <input checked="" type="checkbox"/> Water charge air cooling | <input type="checkbox"/> Jacket water heater                |

### // Control Panel

- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Pre-wired control cabinet for easy application of customized controller (V1+)         | <input type="checkbox"/> Basler controller  | <input type="checkbox"/> Different expansion modules              |
| <input type="checkbox"/> Island operation (V2)  | <input type="checkbox"/> Deif controller  | <input type="checkbox"/> Remote annunciator                       |
| <input type="checkbox"/> Automatic mains failure operation with ATS (V3a)   | <input checked="" type="checkbox"/> Complete system metering                        | <input type="checkbox"/> Daytank control                          |
| <input type="checkbox"/> Automatic mains failure operation incl. control of generator and mains breaker (V3b)             | <input checked="" type="checkbox"/> Digital metering                                | <input type="checkbox"/> Generator winding temperature monitoring |
| <input type="checkbox"/> Island parallel operation of multiple gensets (V4)   | <input checked="" type="checkbox"/> Engine parameters                               | <input type="checkbox"/> Generator bearing temperature monitoring |
| <input type="checkbox"/> Automatic mains failure operation with short (< 10s) mains parallel overlap synchronization (V5) | <input checked="" type="checkbox"/> Generator Protection Functions                  | <input type="checkbox"/> Modbus TCP-IP                            |
| <input type="checkbox"/> Mains parallel operation of a single genset (V6)   | <input checked="" type="checkbox"/> Engine protection                               |   |
| <input type="checkbox"/> Mains parallel operation of multiple gensets (V7)  | <input checked="" type="checkbox"/> SAE J1939 engine ECU communications             |   |
|   | <input checked="" type="checkbox"/> Parametrization software                        |   |
|   | <input checked="" type="checkbox"/> Multilingual capability                         |   |
|   | <input checked="" type="checkbox"/> Multiple programmable contact inputs            |   |
|   | <input checked="" type="checkbox"/> Multiple contact outputs                        |   |
|   | <input checked="" type="checkbox"/> Event recording                                 |   |
|   | <input checked="" type="checkbox"/> IP 54 front panel rating with integrated gasket |   |

### // Power Panel

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

### // Circuit Breaker/Power Distribution

- |   |  |   |
|---|--|---|
| <input type="checkbox"/> 3-pole circuit breaker | <input type="checkbox"/> Manual-actuated circuit breaker     | <input type="checkbox"/> Stand-alone solution in separate cabinet |
| <input type="checkbox"/> 4-pole circuit breaker | <input type="checkbox"/> Electrical-actuated circuit breaker |   |

## STANDARD AND OPTIONAL FEATURES, CONTINUATION

---

### // Fuel System

- |   |  |  |
|---|--|--|
| <ul style="list-style-type: none"> <li>■ Flexible fuel connectors mounted to base frame</li> <li><input type="checkbox"/> Fuel filter with water separator</li> <li><input type="checkbox"/> Fuel filter with water separator heavy-duty</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Switchable fuel filter with water separator</li> <li><input type="checkbox"/> Switchable fuel filter with water separator heavy-duty</li> <li><input type="checkbox"/> Seperate fuel cooler</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Fuel cooler integrated into cooling equipment</li> </ul> |
|---|--|--|

### // Starting/Charging System

- |   |   |  |
|---|---|--|
| <ul style="list-style-type: none"> <li>■ 24V starter</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Starter batteries, cables, rack, disconnect switch</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Battery charger</li> </ul> |
|---|---|--|

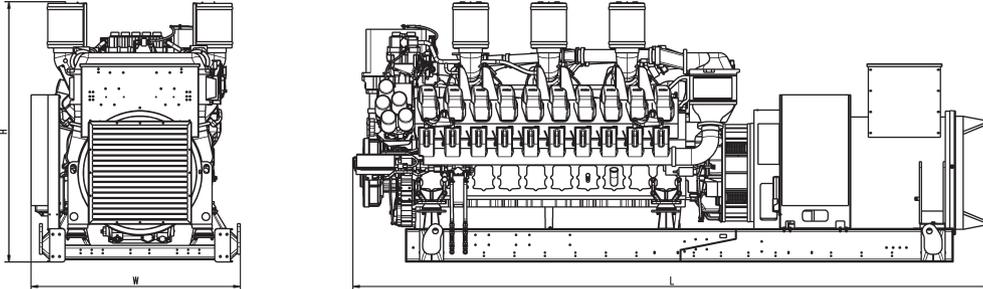
### // Mounting System

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>■ Welded base frame</li> </ul> | <ul style="list-style-type: none"> <li>■ Resilient engine and generator mounting</li> </ul> | <ul style="list-style-type: none"> <li>■ Modular base frame design</li> </ul> |
|---|---|---|

### // Exhaust System

- |  |  |  |
|--|--|--|
| <ul style="list-style-type: none"> <li><input type="checkbox"/> Exhaust bellows with connection flange</li> <li><input type="checkbox"/> Exhaust silencer with 10 dB(A) sound attenuation</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Exhaust silencer with 30 dB(A) sound attenuation</li> <li><input type="checkbox"/> Exhaust silencer with 40 dB(A) sound attenuation</li> </ul> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Y-connection-pipe</li> </ul> |
|--|--|--|

## 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.

| System                | Dimensions (L x W x H) | Weight (dry/less tank) |
|-----------------------|------------------------|------------------------|
| Open Power Unit (OPU) | 5760 x 1887 x 2332 mm  | 15819 kg               |

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 Onsite Energy distributor for sound data.

## EMISSIONS DATA

// Consult your local MTU Onsite Energy 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:  $\leq 85\%$ . Operating hours/year: max. 500.

// 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.

Rated power is available up to 40°C and 400m above sea level.

Materials and specifications subject to change without notice.