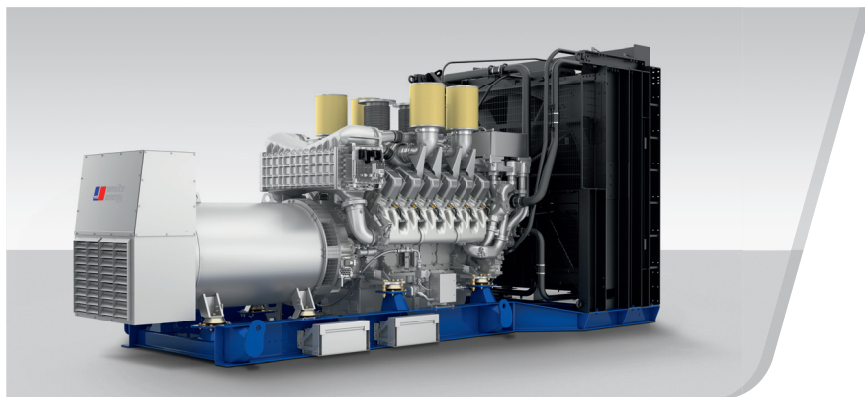


# DIESEL GENERATOR SET

## DS01750D5S

380V – 11 kV/50 Hz/Standby/Fuel Consumption Optimized  
MTU 12V4000G23/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: 1650 kVA - 1850 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
- 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 voltage alternators

#### // Emissions

- Fuel consumption optimized

#### // Certifications

- CE certification option

APPLICATION DATA<sup>①</sup>

## // Engine

|                   |              |
|-------------------|--------------|
| Manufacturer      | MTU          |
| Model             | 12V4000G23   |
| Type              | 4-cycle      |
| Arrangement       | 12V          |
| Displacement: l   | 57.2         |
| Bore: mm          | 170          |
| Stroke: mm        | 210          |
| Compression ratio | 16.4         |
| Rated speed: rpm  | 1500         |
| Engine governor   | ADEC (ECU 7) |
| Max power: kWm    | 1575         |
| Air cleaner       | Dry          |

## // Fuel System

|                        |    |
|------------------------|----|
| Maximum fuel lift: m   | 5  |
| Total fuel flow: l/min | 16 |

// Fuel Consumption<sup>②</sup>

|                          | l/hr  | g/kwh |
|--------------------------|-------|-------|
| At 100% of power rating: | 358.6 | 189   |
| At 75% of power rating:  | 276.1 | 194   |
| At 50% of power rating:  | 189.8 | 200   |

## // Liquid Capacity (Lubrication)

|                                 |     |
|---------------------------------|-----|
| Total oil system capacity: l    | 260 |
| Engine jacket water capacity: l | 160 |
| System coolant capacity: l      | 40  |

## // Combustion Air Requirements

|                                          |     |
|------------------------------------------|-----|
| Combustion air volume: m <sup>3</sup> /s | 1.8 |
| Max. air intake restriction: mbar        | 50  |

## // Cooling/Radiator System

|                                                   |     |
|---------------------------------------------------|-----|
| Coolant flow rate (HT circuit): m <sup>3</sup> /h | 56  |
| Coolant flow rate (LT circuit): m <sup>3</sup> /h | 30  |
| Heat rejection to coolant: kW                     | 580 |
| Heat radiated to charge air cooling: kW           | 260 |
| Heat radiated to ambient: kW                      | 75  |
| Fan power for mech. radiator (40°C): kWm          | 38  |

## // Exhaust System

|                                            |     |
|--------------------------------------------|-----|
| Exhaust gas temp. (after turbocharger): °C | 440 |
| Exhaust gas volume: m <sup>3</sup> /s      | 4.5 |
| 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 |      |      | with electr. driven radiator |      |      |
|                                                                          |         | kWel                                 | kVA* | AMPS | kWel                     | kVA* | AMPS | kWel                         | kVA* | AMPS |
| Marathon 743RSL7090<br>(Low voltage<br>marathon standard)                | 380 V   | 1440                                 | 1800 | 2735 | 1400                     | 1750 | 2659 | 1400                         | 1750 | 2659 |
|                                                                          | 400 V   | 1440                                 | 1800 | 2598 | 1400                     | 1750 | 2526 | 1400                         | 1750 | 2526 |
|                                                                          | 415 V   | 1360                                 | 1700 | 2365 | 1320                     | 1650 | 2295 | 1320                         | 1650 | 2295 |
| Marathon 744RSL7091<br>(Low voltage<br>marathon oversized)               | 380 V   | 1440                                 | 1800 | 2735 | 1400                     | 1750 | 2659 | 1400                         | 1750 | 2659 |
|                                                                          | 400 V   | 1440                                 | 1800 | 2598 | 1400                     | 1750 | 2526 | 1400                         | 1750 | 2526 |
|                                                                          | 415 V   | 1360                                 | 1700 | 2365 | 1320                     | 1650 | 2295 | 1320                         | 1650 | 2295 |
| Marathon 744RSL7091<br>(Low voltage marathon<br>engine output optimized) | 380 V   | 1480                                 | 1850 | 2811 | 1440                     | 1800 | 2735 | 1440                         | 1800 | 2735 |
|                                                                          | 400 V   | 1480                                 | 1850 | 2670 | 1440                     | 1800 | 2598 | 1440                         | 1800 | 2598 |
|                                                                          | 415 V   | 1480                                 | 1850 | 2574 | 1440                     | 1800 | 2504 | 1440                         | 1800 | 2504 |
| Leroy Somer LSA 51.2 S55<br>(Low voltage<br>Leroy Somer)                 | 380 V   | 1480                                 | 1850 | 2811 | 1440                     | 1800 | 2735 | 1440                         | 1800 | 2735 |
|                                                                          | 400 V   | 1480                                 | 1850 | 2670 | 1440                     | 1800 | 2598 | 1440                         | 1800 | 2598 |
|                                                                          | 415 V   | 1480                                 | 1850 | 2574 | 1440                     | 1800 | 2504 | 1440                         | 1800 | 2504 |
| Marathon 1020FDH7095<br>(Medium volt. marathon)                          | 11 kV   | 1480                                 | 1850 | 97   | 1440                     | 1750 | 92   | 1440                         | 1800 | 94   |
| Leroy Somer LSA 53.1 UL70<br>(Medium volt. Leroy Somer)                  | 11 kV   | 1480                                 | 1850 | 97   | 1440                     | 1800 | 94   | 1440                         | 1800 | 94   |

\* 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

- NEMA MG1, BS5000, ISO, DIN EN and IEC standards
- Self-ventilated
- Superior voltage waveform
- Solid state, volts-per-Hertz regulator
- No load to full load regulation
- ±0,25% voltage regulation no load to full load
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- Sustained short circuit current of up to 250% of the rated current for up to 10 seconds (marathon generator)
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (Leroy Somer generator)
- Marathon low voltage generator
- Leroy Somer generator (please contact your local MTU Onsite Energy distribution partner for system ratings)
- Oversized generator
- Medium voltage generator

■ Represents standard features

□ Represents optional features

## STANDARD AND OPTIONAL FEATURES, CONTINUATION

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### // 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
- 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
- Differential protection with multi-function protection relay
- Modbus RTU-TCP gateway

### // 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 switch box

### // Fuel System

- Flexible fuel connectors mounted to base frame
- Fuel filter with water separator
- Switchable fuel filter with water separator
- Seperate fuel cooler
- Fuel cooler integrated into cooling equipment

## STANDARD AND OPTIONAL FEATURES, CONTINUATION

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### // Starting/Charging System

- 24V starter
- Starter batteries
- Battery rack & cables
- Battery charger

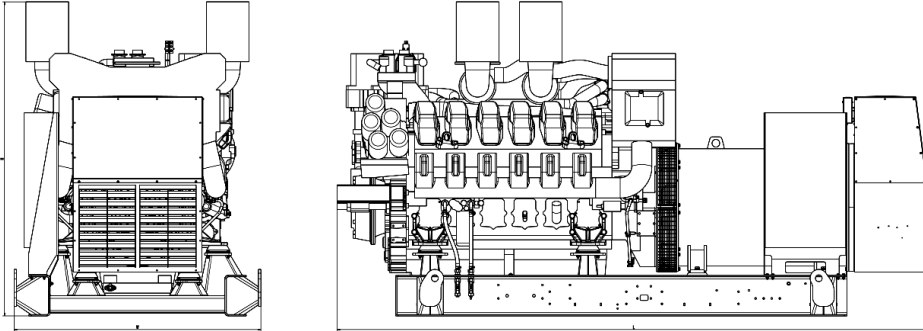
### // Mounting System

- 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

## 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 (LxWxH)    | Weight (dry/less tank) |
|-----------------------|-----------------------|------------------------|
| Open Power Unit (OPU) | 4419 x 1836 x 2330 mm | 10477 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, AS 2789, and DIN 6271. Average Load Factor: < 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.