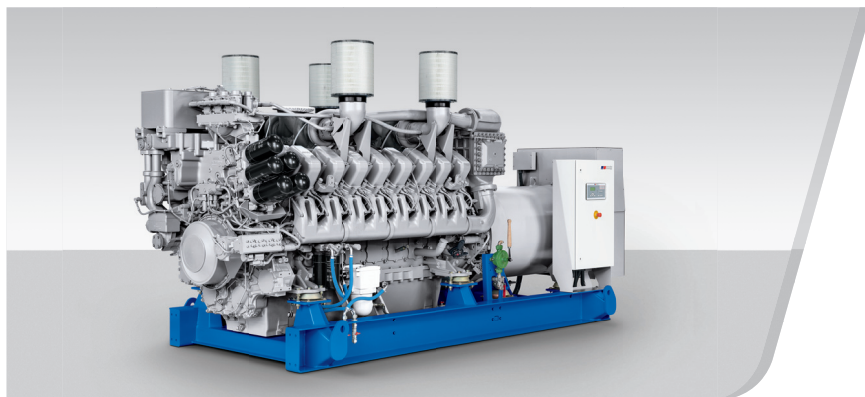


DIESEL GENERATOR SET

MTU 16V4000 DS2500

380V – 11 kV/50 Hz/Standby Power/Fuel Consumption Optimized
MTU 16V4000G63/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: 2200 kVA - 2600 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^①

// Engine

Manufacturer	MTU
Model	16V4000G63
Type	4-cycle
Arrangement	16V
Displacement: l	76.3
Bore: mm	170
Stroke: mm	210
Compression ratio	16.4
Rated speed: rpm	1500
Engine governor	ADEC (ECU 7)
Max power: kWm	2185
Air cleaner	Dry

// Fuel System

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

// Fuel Consumption^②

	l/hr	g/kwh
At 100% of power rating:	513.3	195
At 75% of power rating:	381.1	193
At 50% of power rating:	260.6	198

// Liquid Capacity (Lubrication)

Total oil system capacity: l	300
Engine jacket water capacity: l	175
Intercooler coolant capacity: l	50

// Combustion Air Requirements

Combustion air volume: m ³ /s	2.6
Max. air intake restriction: mbar	50

// Cooling/Radiator System

Coolant flow rate (HT circuit): m ³ /h	68.5
Coolant flow rate (LT circuit): m ³ /h	30
Heat rejection to coolant: kW	800
Heat radiated to charge air cooling: kW	410
Heat radiated to ambient: kW	90
Fan power for mech. radiator (40°C): kWm	44

// Exhaust System

Exhaust gas temp. (after turbocharger): °C	490
Exhaust gas volume: m ³ /s	6.6
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 744RSL7092 (Low voltage marathon standard)	380 V	1880	2350	3570	1880	2350	3570	1840	2300	3494
	400 V	1920	2400	3464	1920	2400	3464	1880	2350	3392
	415 V	1800	2250	3130	1800	2250	3130	1760	2200	3061
Marathon 1020FDL7093 (Low voltage marathon oversized)	380 V	1880	2350	3570	1880	2350	3570	1840	2300	3494
	400 V	1920	2400	3464	1920	2400	3464	1880	2350	3392
	415 V	1800	2250	3130	1800	2250	3130	1760	2200	3061
Marathon 1020FDL7093 (Low voltage marathon engine output optimized)	380 V	2080	2600	3950	2040	2550	3874	2040	2550	3974
	400 V	2072	2590	3738	2000	2500	3608	2000	2500	3608
	415 V	2040	2550	3548	2000	2500	3478	2000	2500	3478
Leroy Somer LSA 51.2 VL95 (Low voltage Leroy Somer)	380 V	2080	2600	3950	2040	2550	3874	2040	2550	3874
	400 V	2080	2600	3753	2040	2550	3681	2040	2550	3681
	415 V	2080	2600	3617	2040	2550	3548	2040	2550	3548
Marathon 1020FDH7099 (Medium volt. marathon)	11 kV	2040	2550	134	2000	2500	131	2000	2500	131
Leroy Somer LSA 53.1 UL85 (Medium volt. Leroy Somer)	11 kV	2080	2600	136	2040	2550	134	2040	2550	134

* $\cos \phi = 0,8$

// 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
- $\pm 0,25\%$ 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
- Oversized generator
- Medium voltage generator

■ Represents standard features

□ Represents optional features

STANDARD AND OPTIONAL FEATURES, CONTINUATION

// 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

// Starting/Charging System

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

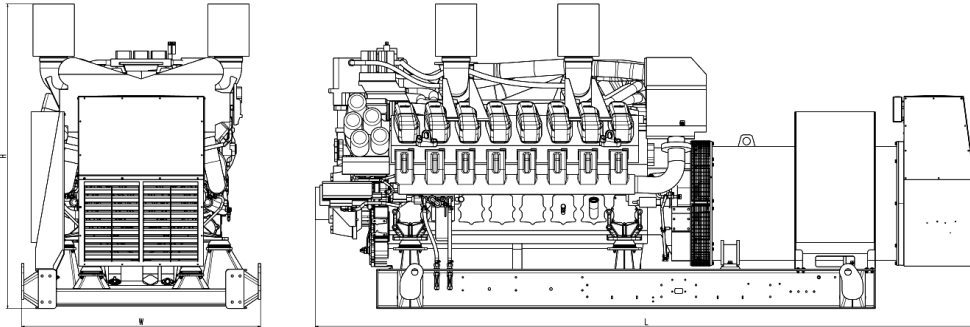
// Mounting System

- 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

Open Power Unit (OPU)

Dimensions (L x W x H)

5090 x 1836 x 2330 mm

Weight (dry/less tank)

12893 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.

MTU Onsite Energy

A Rolls-Royce Power Systems Brand

www.mtuonsiteenergy.com