

DIESEL GENERATOR SET

DS02500D5S

380V – 11 kV/50 Hz/Standby/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
System 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 De-rating 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
Marathon 1020FDH7099 (Medium volt. marathon)	11 kV	2040	2550	134	2000	2500	131	2000	2500	131

* cos phi = 1,0

** 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

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

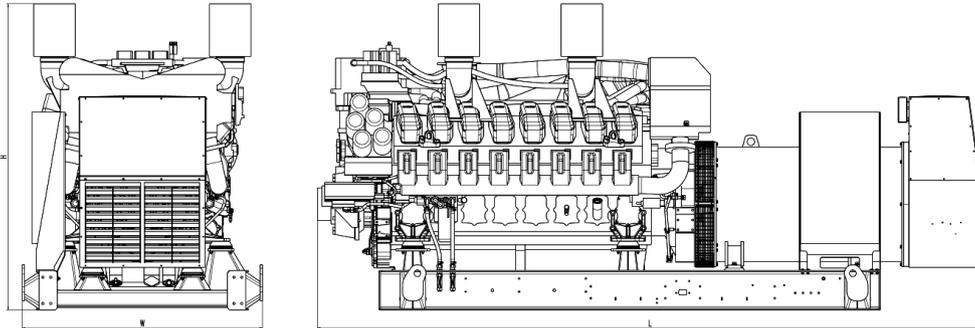
// Mounting System

- 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	Dimensions (L x W x H)	Weight (dry/less tank)
Open Power Unit (OPU)	5090 x 1836 x 2330 mm	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, 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.