



## Diesel Generator Set

# mtu 16V2000 DS1100

380V - 415V/50 Hz/grid stability power/fuel consumption optimized  
16V2000G26F/air charge air cooling



Optional equipment and finishing shown. Standard may vary.

## Product highlights

### Benefits

- Low fuel consumption
- Optimized system integration ability
- High reliability and availability of power
- Long maintenance intervals
- Optimized ratio between size and power
- Wide operating range without derating

### 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 G3 according to ISO 8528
- Generator meets NEMA MG1, BS5000, ISO, DIN EN and IEC standards
- NFPA 110

### Power rating

- System rating: 1000 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
- 100% load factor for continuous power applications
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

### Complete range of accessories available

- Control panel
- Power panel
- Fuel system
- Fuel connections with shut-off valve mounted to base frame
- Starting/charging system
- Exhaust system
- Mechanical radiator
- Oversized voltage alternators

### Emissions

- Fuel consumption optimized
- NOx emission optimized, Tier 2 and NEA (ORDE) optimization optionally available

### Certifications

- CE certification option
- VDE4110 certification



A Rolls-Royce  
solution

## Application data <sup>1)</sup>

Engine	Fuel consump. opt.	Emission opt. <sup>2)</sup>	Cooling/radiator system	Fuel consump. opt.	Emission opt. <sup>2)</sup>
Manufacturer	<b>mtu</b>	<b>mtu</b>	Coolant flow rate (HT circuit): m <sup>3</sup> /hr	41.6	41.6
Model	16V2000G26F	16V2000G26F	Heat rejection to coolant: kW	370	350
Type	4-cycle	4-cycle	Heat rejection to charge air: kW	145	205
Arrangement	16V	16V	Heat radiated to ambient: kW	40	40
Displacement: l	35.7	35.7	Fan power for mech. radiator (40°C): kWm	43.4	43.4
Bore: mm	135	135	Fan power for mech. radiator (50°C): kWm	43.4	43.4
Stroke: mm	156	156	Air flow required for mech. radiator (40°C)		
Compression ratio	17.5	17.5	cooled unit: m <sup>3</sup> /min	1462	1462
Rated speed: rpm	1500	1500	Air flow required for mech. radiator (50°C)		
Engine governor	ADEC	ADEC	cooled unit: m <sup>3</sup> /min	1462	1462
Speed regulation	± 0.25%	± 0.25%	Engine coolant capacity		
Max power: kWm	890	890	(without cooling equipment): l	70	70
Mean effective pressure: bar	19.9	19.9	Radiator coolant capacity (40°C): l	74	74
Air cleaner	dry	dry	Radiator coolant capacity (50°C): l	106	106
			Max. coolant temperature (warning): °C	102	102
			Max. coolant temperature (shutdown): °C	105	105
<b>Fuel system</b>			<b>Exhaust system</b>		
Maximum fuel lift: m	5	5	Exhaust gas temp. (after turbocharger): °C	530	515
Total fuel flow: l/min	30	30	Exhaust gas volume: m <sup>3</sup> /s	2.78	3.07
<b>Fuel consumption <sup>3)</sup></b>			Maximum allowable back pressure: mbar	50	50
At 100% of power rating: l/hr	205/191	216/201	Minimum allowable back pressure: mbar	30	30
At 75% of power rating: l/hr	156/194	165/205			
At 50% of power rating: l/hr	108/202	115/214	<b>Generator</b>		
<b>Lube oil system</b>			Protection class	IP23	IP23
Total oil system capacity: l	102	102	Insulation class	H	H
Max. lube oil temp. (alarm): °C	103	103	Voltage regulation (steady state)	± 0.25%	± 0.25%
Max. lube oil temp. (shutdown): °C	105	105	Rado interference class	N	N
Min. lube oil pressure (alarm): bar	4.5	4.5			
Min. lube oil pressure (shutdown): bar	4	4			
<b>Combustion air requirements</b>					
Combustion air volume: m <sup>3</sup> /s	1.03	1.19			
Max. air intake restriction: mbar	40	40			

1 All data refers only to the engine and is based on ISO standard conditions (25°C and 100m above sea level).

2 Emission optimized data refer to NOx emission optimized and NEA (ORDE) optimized/Tier 2 compliant engines.

3 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	with mechanical radiator**		
		kW <sub>el</sub>	kVA*	AMPS
Leroy Somer LSA 50.2 M6 (Low voltage Leroy Somer standard)	380 V	800	1000	1519
	400 V	800	1000	1443
	415 V	800	1000	1391
Leroy Somer LSA 50.2 L7 (Low voltage Leroy Somer oversized)	380 V	800	1000	1519
	400 V	800	1000	1443
	415 V	800	1000	1391
Marathon 740RSL7183 (Low voltage Marathon standard)	380 V	800	1000	1519
	400 V	800	1000	1443
	415 V	800	1000	1391
Marathon 742RSL7185 (Low voltage Marathon oversized)	380 V	800	1000	1519
	400 V	800	1000	1443
	415 V	800	1000	1391

\* cos phi = 0.8

\*\* BE, fuel optimized: max. power available up to: open power unit 40°C/400m; NOx emission optimized, EPA Tier 2 compl., NEA: standard operating conditions/open power unit 25°C/100m

Electrical outputs may vary depending on generator voltage and ambient conditions. For power outputs consult your **mtu** dealer.

Intake air depression/mbar: 15mbar

Exhaust back pressure/mbar: 30mbar

### Engine

- 4-cycle
- Standard single stage air filter
- Oil drain extension & shut-off valve
- Full flow oil filters
- Closed crankcase ventilation
- Governor-electronic isochronous ADEC/ECU9
- Common rail fuel injection
- Dry exhaust manifold
- Electric starting motor (24V)
- Fuel consumption optimized engine
- NOx emission optimized engine
- Tier 2 optimized engine
- NEA (ORDE) optimized engine

### Generator

- Leroy Somer low voltage generator
- Meets NEMA MG1, BS5000, IEC 60034-1, VDE 0530, DIN EN 12601, AS1359 and ISO 8528 requirements
- Superior voltage waveform
- Solid state, volts-per-Hertz regulator
- 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 IP 23
- less than 5% harmonic distortion
- 2/3 pitch stator windings
- No load to full load regulation
- ± 0.25% voltage regulation no load to full load
- Insulation class H, utilization acc. to H
- Radio suppression EN55011, group 1, cl. B
- Short circuit capability 3xI<sub>n</sub> for 10sec
- Sustained short circuit current of up to 300% of the rated current for up to 10 seconds (Leroy Somer generator)
- Winding and bearing RTDs (without monitoring)
- Excitation by AREP + PMI
- Mounting of CT's: 3x 2 core CT's
- Voltage setpoint adjustment ±10V
- Sustained short circuit current of up to 250% of the rated current for up to 10 seconds (Marathon generator)
- Marathon low voltage generator
- Oversized generator

■ Represents standard features

□ Represents optional features

## Standard and optional features

### Cooling system

- Jacket water pump
- Thermostat(s)
- Air charge air cooling
- Mechanical radiator
- ☐ 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- and bearing temperature monitoring
- ☐ Differential protection with multi-function protection relay
- ☐ Modbus TCP-IP

### Power panel

- ☐ Available in 600x600
- ☐ Phase monitoring relay 230V/400V
- ☐ Supply for battery charger
- ☐ Supply for jacket water heater
- ☐ Plug socket cabinet for 230V compatible Euro

### Fuel system

- Flexible fuel connectors mounted to base frame
- ☐ Fuel filter with water separator
- ☐ Switchable fuel filter with water separator
- ☐ Fuel cooler

### Starting/charging system

- 24V starter
- ☐ Starter batteries, cables, rack, disconnect switch
- ☐ Battery charger
- ☐ Redundant starter 2x 7.5kW

### Mounting system

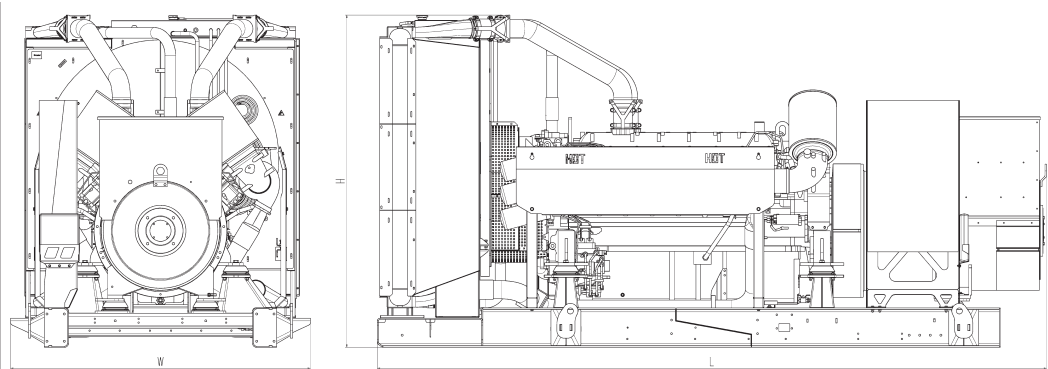
- Welded base frame
- Resilient engine and generator mounting
- Modular base frame design

### 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



Drawing above for illustration purposes only, based an 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)	4440 x 1990 x 2200 mm	6550 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** distributor for sound data.

## Emissions data

— Consult your local **mtu** distributor for emissions data.

## Rating definitions and conditions

- Grid stability power ratings apply to installations serving electric utility programs. At constant or varying load, the number of generator set operating hours is limited to 1000 hours per year with no more than 500 hours per year at 100% load without interruption. 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: ≤ 100%.
- Consult your local **mtu** distributor for derating information.