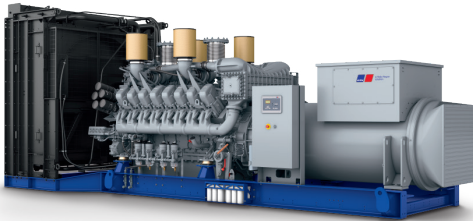




## Diesel Generator Set

# mtu 16V4000 DS2750

380V – 11 kV/50 Hz/standby power/fuel consumption optimized  
16V4000G94F/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

### 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: 2720 kVA - 2870 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



A Rolls-Royce  
solution

Application data <sup>1)</sup>

Engine			Liquid capacity (lubrication)	
Manufacturer	mtu		Total oil system capacity: l	300
Model	16V4000G94F		Engine jacket water capacity: l	175
Type	4-cycle		Intercooler coolant capacity: l	50
Arrangement	16V		Combustion air requirements	
Displacement: l	76.3			
Bore: mm	170			
Stroke: mm	210		Combustion air volume: m³/s	2.9
Compression ratio	16.4		Max. air intake restriction: mbar	30
Rated speed: rpm	1500		Cooling/radiator system	
Engine governor	ADEC (ECU 9)			
Max power: kWm	2387			
Air cleaner	dry		Coolant flow rate (HT circuit): m³/hr	53
			Coolant flow rate (LT circuit): m³/hr	25
			Heat rejection to coolant: kW	1025
			Heat radiated to charge air cooling: kW	585
			Heat radiated to ambient: kW	90
Fuel system			Exhaust system	
Maximum fuel lift: m	5		Exhaust gas temp. (after engine, max.): °C	450
Total fuel flow: l/min	27		Exhaust gas temp., max (after engine): °C	550
Fuel consumption <sup>2)</sup>			Exhaust gas temp. (before turbocharger): °C	680
At 100% of power rating:	l/hr	g/kwh	Exhaust gas volume: m3/s	7.4
At 75% of power rating:	567	197	Maximum allowable back pressure: mbar	50
At 50% of power rating:	406	188		
	277	192		

Standard and optional features

System ratings (kW/kVA)

Generator model	Voltage	fuel consumption optimized					
		without radiator			with radiator		
		kWel	kVA*	AMPS	kWel	kVA*	AMPS
Leroy Somer LSA53.2 M7 (Low voltage Leroy Somer standard)	380 V	2240	2800	4254	2216	2770	4209
	400 V	2240	2800	4041	2216	2770	3998
	415 V	2240	2800	3895	2216	2770	3854
Leroy Somer LSA53.2 M9 (Low voltage Leroy Somer oversized)	380 V	2240	2800	4254	2216	2770	4209
	400 V	2240	2800	4041	2216	2770	3998
	415 V	2240	2800	3895	2216	2770	3854
Leroy Somer LSA53.2 M9 (Low voltage engine output oversized)	380 V	2296	2870	4361	2216	2770	4209
	400 V	2296	2870	4142	2216	2770	3998
	480 V	2296	2870	3993	2216	2770	3854
Marathon 1020FDL7108 (Low voltage Marathon)	380 V	2240	2800	4254	2216	2720	4133
	400 V	2240	2800	4041	2216	2720	3926
	415 V	2176	2720	3784	2216	2720	3784
Leroy Somer LSA 53.2 XL11 (Med. volt. Leroy Somer)	11 kV	2280	2850	150	2208	2760	145
Leroy Somer LSA53.2 XL9 (Medium volt. Marathon)	11 kV	2280	2850	150	2208	2760	145

\* cos phi = 0.8

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

### 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
- ☐ Tier 2 optimized engine
- ☐ NEA (ORDE) 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 + PMI
- Mounting of CT's: 3x 2 core CT's
- Winding pitch: 5/6 winding
- Voltage setpoint adjustment  $\pm 5\%$
- Meets NEMA MG-1, BS 5000, IEC 60034-1, VDE 0530, DIN EN 12601 and ISO 8528 requirements
- Leroy Somer low voltage generator
- ☐ Oversized generator
- ☐ Engine output optimized generator
- ☐ Medium voltage generator

### Cooling system

- Jacket water pump
- Thermostat(s)
- Water charge air cooling
- ☐ Mechanical radiator
- ☐ Electrical driven front-end cooler
- ☐ Jacket water heater
- ☐ Pulley for fan drive

### 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
- ☐ Modbus TCP-IP

### Power panel

- ☐ Available in 600x600 and 600x1000
- ☐ Phase monitoring relay 230V/400V
- ☐ Supply for battery charger
- ☐ Supply for jacket water heater
- ☐ Supply for anti condensation heating
- ☐ Plug socket cabinet for 230V compatible Euro/USA
- ☐ Supply for electrical driven radiator from 75kW (PP 600x1000)

- Represents standard features
- ☐ Represents optional features

## Standard and optional features

### Circuit breaker

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

### Fuel system

- |  |   |  |
|--|---|--|
| <input checked="" type="checkbox"/> Flexible fuel connectors mounted to base frame | <input type="checkbox"/> Switchable fuel filter with water separator            | <input type="checkbox"/> Fuel cooler integrated into cooling equipment |
| <input type="checkbox"/> Fuel filter with water separator                          | <input type="checkbox"/> Switchable fuel filter with water separator heavy-duty |  |
| <input type="checkbox"/> Fuel filter with water separator heavy-duty               | <input type="checkbox"/> Seperate fuel cooler                                   |  |

### Starting/charging system

- |   |   |  |
|---|---|--|
| <input checked="" type="checkbox"/> 24V starter | <input type="checkbox"/> Starter batteries, cables, rack, disconnect switch | <input type="checkbox"/> Battery charger           |
|   |   | <input type="checkbox"/> Redundant starter 2x 15kW |

### Mounting system

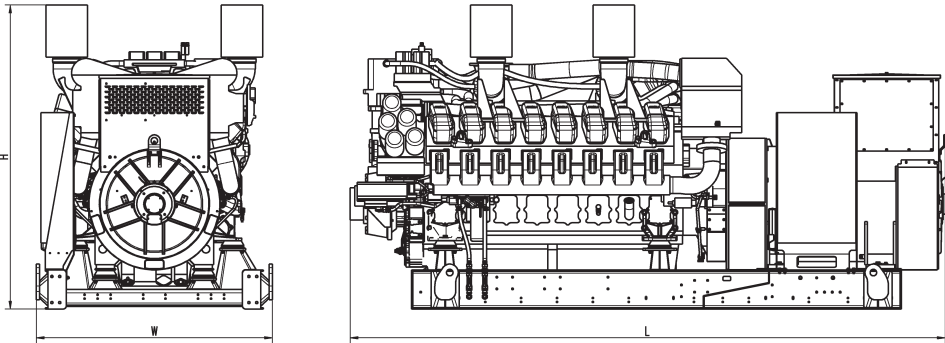
- |   |   |   |
|---|---|---|
| <input checked="" type="checkbox"/> Welded base frame | <input checked="" type="checkbox"/> Resilient engine and generator mounting | <input checked="" type="checkbox"/> Modular base frame design |
|---|---|---|

### Exhaust system

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> Exhaust bellows with connection flange           | <input type="checkbox"/> Exhaust silencer with 30 dB(A) sound attenuation | <input type="checkbox"/> Exhaust silencer with 40 dB(A) sound attenuation |
| <input type="checkbox"/> Exhaust silencer with 10 dB(A) sound attenuation |   | <input type="checkbox"/> Y-connection-pipe                                |

- ☒ Represents standard features
- ☐ Represents optional features

## 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)	5290 x 1810 x 2350 mm	approx. 14.520 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

- 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: ≤ 85%. Operating hours/year: max. 500.
- Consult your local **mtu** distributor for derating information.