



## Diesel Generator Set

# mtu 12V1600 DS660

400 – 230 V/659 kVA/50 Hz/standby power/series 1600 – 12V1600



Optional equipment shown. Standard equipment may vary.

## Product highlights

### Benefits

- Industry-leading average load factor
- Low fuel consumption
- Emissions optimizations available
- High availability and reliability
- Outstanding load acceptance
- Long maintenance intervals

### Support

- Global product support offered

### Standards

- Engine-generator set is designed and manufactured in facilities certified to standards ISO 2008:9001
- Generator set complies to ISO 8528 and fullfills performance level G3
- Generator meets BS5000; NEMA MG 1; ISO; DIN EN and IEC standards

### Available optimizations

- NEA Singapore for off road diesel engines (ORDE)
- Fuel consumption optimized

### Wide standard scope of supply

- 4P circuit breaker
- Island operation control panel
- Integrated fuel tank
- Industrial silencer (15 dB(A))
- Batteries & battery charger

### Complete range of accessories available

- Sound attenuated enclosure
- Fuel system accessories
- Control panel & ATS
- Range of additional electrical options

### Warranty

- Standard 36 months warranty after shipment



A Rolls-Royce  
solution

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

### Engine

|                   |             |
|-------------------|-------------|
| Manufacturer      | <b>mtu</b>  |
| Model             | 12V1600G70F |
| Type              | 4-cycle     |
| Arrangement       | 12V         |
| Displacement: l   | 21          |
| Bore: mm          | 122         |
| Stroke: mm        | 150         |
| Compression ratio | 17.5        |
| Rated rpm         | 1500        |
| Engine governor   | ECU 8       |
| Gross power: kWm  | 576         |
| Air cleaner       | dry         |

### Fuel system

|                                    |           |
|------------------------------------|-----------|
| Max. fuel flow: l/hr               | 342       |
| Fuel tank capacity: OPU (EPU) in l | 740 (950) |
| Autonomy: hr                       | 8         |

### Fuel consumption

|                          |       |
|--------------------------|-------|
| At 100% of power rating: | l/hr  |
|                          | 128.6 |

### Liquid capacity

|                           |      |
|---------------------------|------|
| Total oil system: l       | 72.5 |
| Total coolant capacity: l | 99   |

### Generator

|                    |                         |
|--------------------|-------------------------|
| Generator brand    | Mecc-Alte               |
| Generator type     | HM355B2                 |
| Insulation class   | H-class                 |
| Bearing            | single bearing          |
| Enclosure          | IP23 M                  |
| Voltage regulation | A.V.R. (electronic)     |
| Exciting system    | self-excited, brushless |

### Electrical

|                          |       |
|--------------------------|-------|
| Electric system volts DC | 24    |
| Number of batteries      | 2     |
| Capacity: Ah             | 2x 75 |

### Air requirements

|                                     |      |
|-------------------------------------|------|
| Aspirating: m <sup>3</sup> /min     | 48   |
| Cooling air flow: m <sup>3</sup> /s | 11.7 |

### Exhaust system

|  |     |
|--|-----|
| Gas temp. (stack): °C                          | 483 |
| Gas volume at stack temp.: m <sup>3</sup> /min | 126 |
| Maximum allowable back pressure: kPa           | 15  |

### Cooling/radiator system

|   |         |
|---|---------|
| Ambient capacity of radiator: OPU (EPU) in °C | 40 (35) |
| Pressure on rad. exhaust: kPa                 | 0.2     |
| Heat rejection to coolant: kW                 | 250     |

## Standard and optional features

### System ratings (kW/kVA)

|            | 12V1600 DS660     |
|------------|-------------------|
|            | Standby operation |
| Voltage    | 400 V             |
| Phase      | Three phase       |
| Hz         | 50                |
| kWel*      | 527.2             |
| kVA**      | 659               |
| Rated AMPS | 951.2             |

\* cos phi = 1,0

\*\* cos phi = 0,8 Also available for following voltages 380V & 415V - for details please contact your local **mtu** dealer.

## Standard and optional features

### Engine

- 4- strokes diesel engine
- Flywheel housing SAE 1
- Flywheel 14"
- Four-valve, overhead camshaft
- Piston cooling via oil spray nozzle
- Forged crankshaft & connecting rods
- Oil pan
- Lube oil circulation pump
- Dry exhaust manifolds
- Hot components and radiator guards
- Mobile components guards
- Lube oil filter

### Fuel system

- Fuel main filter
- Fuel pre-filter with water separator
- Common rail fuel injection
- Integrated fuel tank (level sensor and drain cap incl.)
- Automatic fuel transfer pump
- Heavy-duty fuel pre-filter with water separator
- 3-way valve for fuel filling
- Fuel cooler

### Generator

- 3-Phase, synchronos, brushless, self exciting, self regulating, self ventilating alternator
- Winding temperature sensors
- IP23 M protection degree
- IP23 protection cover
- Bearing temperature sensors
- Insulation class H
- Anti condensation heater
- Permanent magnet

### Control panel & electric options

- Control and power electric panel, with measurements devices and controller
- ATS (Automatic Transfer Switch)
- Control version for parallel operation
- Control version for synchronizing a single genset with mains
- Programmable timer for MM7 and MC7
- Remote display
- Expansion module for CAN communication
- Change over power supply for MC7
- Input output/LED expansion modules for DeepSea controllers
- ModBus connection to customer systems TCP/IP
- Control version for synchronizing with mains without blackout
- Converter kits CAN to RS485/USB/LAN

### Circuit breaker/power distribution

- 4 poles manual circuit breaker (motorized with DeepSea controllers)

### Starting/charging system

- 24V electric system
- Starting batteries installed
- Pre-heating resistance/jacket water heater
- Battery charging alternator
- Battery disconnecter
- Battery charger

- Represents standard features
- Represents optional features

## Standard and optional features

### Air intake system

- Exhaust turbochargers
- Set of dry-type air filters with containment indicator
- Intercooler, integrated in radiator
- Heavy duty air filter with automatic dust evacuation

### Exhaust system

- Industrial silencer 15 dB(A)
- Residential silencer 35 dB(A)
- Exhaust bellows

### Cooling system

- Coolant circulation pump
- Front type radiator for jacket water and charge aircooling circuit with integrated expansion tank
- Engine mounted fan drive

### Mounting system

- Mounted on steel base frame
- Resilient mounting of engine and generator

### Enclosures

- Sound proof enclosure
- Socket box
- Increased fuel tank capacity

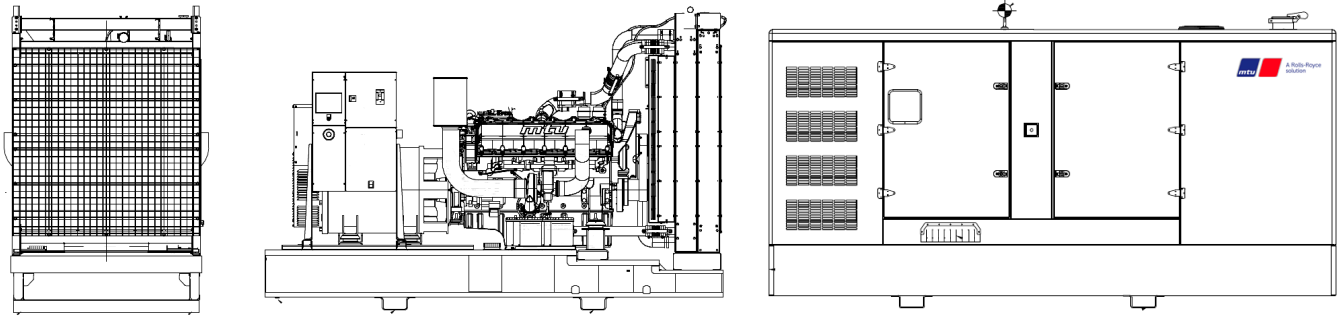
### Documentation & certifications

- Genset & component manuals
- Maintenance schedule
- CE-certification for EU
- Fluids and lubricants specification

Represents standard features

Represents optional features

## Weights and dimensions



Drawing above for illustration purposes only, based on 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 (wet/with standard accessories) |
|-----------------------|-----------------------|--|
| Open power unit (OPU) | 3600 x 1604 x 2121 mm | 4529 kg                                |
| Enclosed power unit   | 5000 x 2100 x 2369 mm | 6739 kg                                |

Consult the factory for accurate weights and dimensions for your specific engine-generator set. Lengths may vary with other voltages. Do not use for installation design.

## Sound data

| Unit type                  |     |
|----------------------------|-----|
| Open power unit: dB(A)     | 109 |
| Enclosed power unit: dB(A) | 88  |

According to 2000/14/CE.  
Sound data is provided at 1m for 75% prime power.

## 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%, max. 500h/year.
- Consult your local **mtu** distributor for derating information.

Rated power for reference conditions at 25°C and 100m above sea level.