

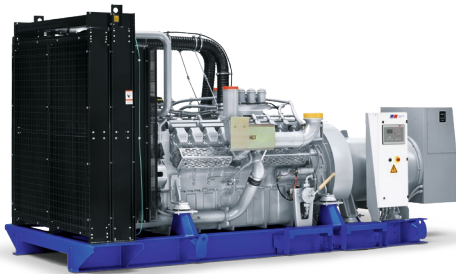


www.TST-CO.com

## Diesel Generator Set

# 16V2000 DS1140

Water charge-air cooling/1030kVA/50 Hz/  
prime power (fuel consumption optimized)/380 - 415V



Optional equipment shown. Standard equipment and colors (base frame, generator: grey, engine: blue) may vary.

## Product highlights

### Benefits

- Low installation costs
- Best fuel consumption values
- Long maintenance intervals
- Best-in-class reliability and availability
- Lifting vertically or with diagonal pull
- Compact design

## System ratings<sup>1)</sup>

| Prime power     | 16V2000 DS1140 | 16V2000 DS1140 | 16V2000 DS1140 |
|-----------------|----------------|----------------|----------------|
| Voltage (L-L)   | 380V           | 400V           | 415V           |
| Phase           | 3              | 3              | 3              |
| PF              | 0.8            | 0.8            | 0.8            |
| Hz              | 50             | 50             | 50             |
| kW              | 824            | 824            | 816            |
| kVA             | 1030           | 1030           | 1020           |
| Amps            | 1565           | 1487           | 1419           |
| Generator model | 575RSL7074     | 575RSL7074     | 575RSL7074     |
| Temp rise       | 125°C/40°C     | 125°C/40°C     | 125°C/40°C     |
| Connection      | 6 LEAD HI WYE  | 6 LEAD HI WYE  | 6 LEAD HI WYE  |

1 Power available up to 40°C/400 m



A Rolls-Royce solution

## Certifications and standards

- Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Performance Assurance Certification (PAC)
  - Engine-generator set tested according to ISO 8528-5 for transient response
  - Verified product design, quality and performance integrity
  - All engine systems are prototype and factory tested
- Power rating
  - Permissible average power output during 24 hours of operation up to 75%

## Standard equipment <sup>1)</sup>

### Engine

- Air filters
- Oil pump for draining
- Full flow oil filters
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Exhaust manifold – dry
- Belt driven radiator fan
- Electric starting motor – 24V
- Governor – electronic isochronous
- Base – formed steel
- SAE flywheel & bell housing
- Charging alternator
- Flexible fuel connectors
- Flexible exhaust connection

### Generator

- NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor
- VDE 0530, IEC 60034-1, BS4999, BS5000, CSA22.2-100, AS 1365
- Sustained short circuit current of up to 250% of the rated current for up to 10 seconds
- Self-ventilated and drip-proof according to IP23
- Superior voltage waveform
- Digital, volts-per-hertz regulator
- No load to full load regulation
- Brushless alternator with brushless pilot exciter
- 4 Pole, rotating field
- 125 °C maximum prime temperature rise
- Heavy duty shielded ball bearings with a minimum B-10 life of 40,000 hrs
- Flexible coupling
- Full amortisseur windings
- 3-phase voltage sensing
- ±0.25% voltage regulation
- 100% of rated load – one step according to NFPA 110
- 3% maximum harmonic content

## Standard features <sup>1)</sup>

- The engine-generator set complies to G3
- Engine generator set tested according to ISO 8528-5 for transient response
- Accepts rated load in one step as per NFPA 110
- All engine-generator sets are type and factory tested
- Global product support
- 16V2000 diesel engine (31,84 liter (1943 cu inch) displacement; 4-stroke)
- Engine-generator resiliently mounted
- Complete range of accessories
- Brushless, rotating field generator (PMG excitation; 250% short circuit capability; 2/3 pitch stator windings)
- Complete system metering
- LCD display

## Application data

### Engine

|                                    |                        |
|------------------------------------|------------------------|
| Manufacturer                       | MTU                    |
| Model                              | 16V2000G65TB           |
| Type                               | 4-stroke               |
| Arrangement                        | 16V                    |
| Displacement/cylinder: l (cu inch) | 1.99 (121)             |
| Bore: mm (inch)                    | 130 (5.1)              |
| Stroke: mm (inch)                  | 150 (5.9)              |
| Compression ratio                  | 16:1                   |
| Rated speed: rpm                   | 1500                   |
| Engine governor                    | electronic isochronous |
| Max power: kWm (bhp)               | 890 (1194)             |
| Speed regulation                   | ±0.25%                 |
| Air filter                         | dry                    |

### Lube oil capacity

|                           |          |
|---------------------------|----------|
| Total oil system: l (gal) | 102 (27) |
|---------------------------|----------|

### Electrical

|  |      |
|--|------|
| Electric Volts DC                      | 24   |
| Cold cranking amps under -17.8°C (0°F) | 1000 |

### Fuel system

|                                |                                    |
|--------------------------------|------------------------------------|
| Fuel supply connection size    | M22 x 1,5 - 60°/male               |
| Fuel return connection size    | M12 x 1,5 - 60°/male               |
| Maximum fuel lift: m (ft)      | 5 (16)                             |
| Recommended fuel               | see MTU fluids & lubrication spec. |
| Total fuel flow: l/hr (gal/hr) | 600 (159)                          |

### Fuel consumption<sup>1)</sup>

|                          | gal/hr | l/hr | g/kwh |
|--------------------------|--------|------|-------|
| At 100% of power rating: | 57     | 214  | 200   |
| At 75% of power rating:  | 42     | 158  | 196   |
| At 50% of power rating:  | 28     | 108  | 201   |

### Cooling/radiator system

|   |              |
|---|--------------|
| Water pump capacity: l/min (gpm)          | 667 (176)    |
| Heat rejection to coolant: kW (BTUM)      | 375 (21,326) |
| Heat rejection to after cooler: kW (BTUM) | 195 (11,089) |
| Heat radiated to ambient: kW (BTUM)       | 45 (2559)    |
| Engine coolant capacity: l (gal)          | 130 (34)     |

### Air requirements<sup>2)</sup>

|  |           |
|--|-----------|
| Aspirating: m <sup>3</sup> /min (SCFM) | 66 (2328) |
|--|-----------|

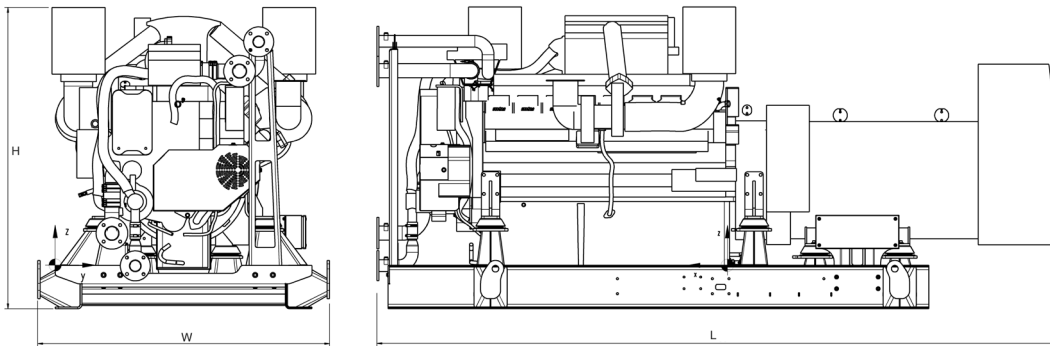
### Exhaust system

|  |            |
|--|------------|
| Gas temp. (stack): °C (°F)                       | 530 (986)  |
| Gas volume flow temp: m <sup>3</sup> /min (SCFM) | 177 (6250) |
| Maximum allowable back pressure: kPA             | 8.5        |

1 Values in accordance with ISO 3046-1. Conversion calculated with fuel density of 0.83 g/ml.

2 Air density = 1.184 kg/m<sup>3</sup> (0.0739 lbm/ft<sup>3</sup>)

## 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 (L x W x H)                         | Weight (dry/less tank) |
|-----------------------|--|------------------------|
| Open power unit (OPU) | 4100 x 1750 x 1809 mm (161.4 x 69 x 71.2 inch) | 5945 kg (13,106 lbs)   |

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

- Prime power ratings apply to installations where utility power is unavailable or unreliable. At varying load, the number of generator set operating hours is unlimited. 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:  $\leq 75\%$ .
- Consult your local MTU distributor for derating information.