

# DIESEL GENERATOR SET AIR CHARGE-AIR COOLING

275 kVA/50 Hz/Prime (Fuel-Optimized)  
380 - 415V

(Reference DS300D5S – Fuel optimized for standby rating technical data)



Optional equipment shown. Standard equipment may vary.

## BENEFITS

- // Low installation cost
- // Best fuel consumption values
- // Long maintenance intervals
- // High-efficiency components
- // Best-in-class reliability and availability

## SYSTEM RATINGS<sup>①</sup>

Prime <sup>②</sup>	DP275D5S	DP275D5S	DP275D5S
Voltage (L-L)	380V	400V	415V
Phase	3	3	3
PF	0.8	0.8	0.8
Hz	50	50	50
kW	220	220	220
kVA	275	275	275
AMPS	418	397	383
Generator Model	433PSL7516	433PSL7516	433PSL7516
Temp Rise	125°C/40°C	125°C/40°C	125°C/40°C
Connection	12 LEAD HI WYE	12 LEAD HI WYE	12 LEAD HI WYE

① Power available up to 40°C/400 m

② Prime technical data is for a fuel-optimized prime unit

## 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 cleaner  
 Oil pump  
 Oil drain extension & s/o valve  
 Full flow oil filters  
 Closed crankcase ventilation  
 Jacket water pump  
 Thermostat  
 Exhaust manifold – dry  
 Blower fan & fan drive  
 Radiator – unit mounted  
 Electric starting motor - 24V  
 Governor – electronic isochronous  
 Base – formed steel  
 SAE flywheel & bell housing  
 Charging alternator – 24V  
 Flexible fuel connectors  
 Fuel system: common rail

### // Customer Interface

Smart connect

### // Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor  
 VDE 0530, IEC 34.1, BS 5000, CSA 22.2-100, AS 1359  
 Sustained short circuit current of up to 300% of the rated current for up to 10 seconds  
 Self-ventilated and drip-proof  
 Superior voltage waveform  
 Digital, solid state, 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  
 1 bearing, sealed  
 Flexible coupling  
 Full amortisseur windings  
 125% rotor balancing  
 3-phase voltage sensing  
 ±1% voltage regulation  
 100% of rated load – one step  
 3% maximum harmonic content  
 Insulation class H  
 Protection class IP20

<sup>①</sup> Represents standard product only. Consult Factory/MTU Onsite Energy distributor for additional configurations.

## STANDARD FEATURES<sup>①</sup>

- // The generator set complies to G2
- // Engine-generator set tested to ISO 8528-5 for transient response
- // Accepts rated load in one step per NFPA 110
- // All engine-generator sets are prototype and factory tested
- // MTU Onsite Energy is a single source supplier
- // Global product support
- // 2 year standard warranty
- // Cooling system 50°C (integral set-mounted; engine driven fan)
- // 6R1600 diesel engine (10,5 liter displacement; common rail fuel injection; 4-cycle)
- // Engine-generator resiliently mounted
- // Complete range of accessories
- // Brushless, rotating field generator (PMG excitation; 300% short circuit capability; 2/3 pitch stator windings)
- // Terminal box

## APPLICATION DATA

### // Engine

Manufacturer	MTU
Model	6R1600G10F
Type	4-Cycle
Arrangement	Inline 6
Displacement/cylinder: l (cu in)	10.5 (641)
Bore: mm (in)	122 (4.8)
Stroke: mm (in)	150 (5.91)
Compression ratio	17.5:1
Rated speed rpm	1500
Engine governor	ECU 8
Max power: kWm (bhp) <sup>②</sup>	249 (334)
Speed regulation	±0.25%
Air filter	Dry

### // Lube Oil Capacity

Total oil system: l (gal)	46 (12.2)
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### // Electrical

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

### // Fuel System

Fuel supply connection size <sup>③</sup>	24° Cone M22 x 1,5 - 60°/Male
Fuel return connection size <sup>③</sup>	24° Cone M16 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)	171 (52.1)

### // Fuel Consumption

	Prime <sup>②</sup>
At 100% of power rating: l/hr (gal/hr)	60 (15.8)
At 75% of power rating: l/hr (gal/hr)	45 (11.9)
At 50% of power rating: l/hr (gal/hr)	31 (8.2)

### // Cooling/Radiator System

	Prime <sup>②</sup>
Ambient capacity of radiator: °C (°F)	50 (122)
Max. restriction of cooling air, intake, and discharge side of rad.: kPa (in. H <sub>2</sub> O)	0,2 (0,803)
Water pump capacity: l/min (gpm)	277 (73.1)
Heat rejection to coolant: kW (BTUM)	115 (6.540)
Heat rejection to after cooler: kW (BTUM)	50 (2,843)
Heat radiated to ambient: kW (BTUM)	14 (796)
Engine coolant capacity: l (gal)	45 (11,9)
Radiator coolant capacity: l (gal)	44 (11,6)
Coolant to cooler temperature: °C (°F)	95 (203)

### // Air Requirements<sup>③</sup>

	Prime <sup>②</sup>
Aspirating: m <sup>3</sup> /min (SCFM)	18 (635.7)
Air flow required for rad. cooled unit: m <sup>3</sup> /min (SCFM)	372 (13,137)
Remote cooled applications; air flow required for dissipation of radiated gen-set heat for a max of 25°F rise: m <sup>3</sup> /min (SCFM)	97 (3,411.1)

### // Exhaust System

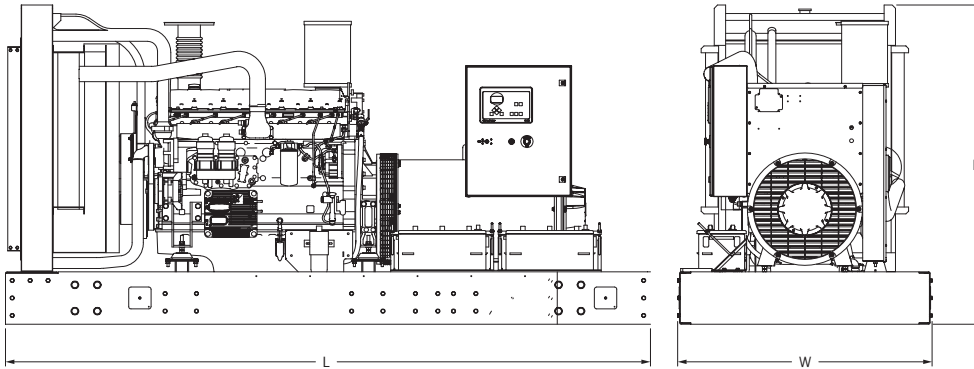
	Prime <sup>②</sup>
Gas temp. (stack): °C (°F)	495 (923)
Gas volume at stack temp: m <sup>3</sup> /min (CFM)	54 (1,907)
Maximum allowable back pressure: kPA (in. H <sub>2</sub> O)	15 (60.2)

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② Prime technical data is for a fuel-optimized prime unit

③ 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 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)
Open Power Unit (OPU)	3658 x 1445 x 1855 mm (144 x 56.875 x 73 in)	3078 kg (6,785 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

Unit Type	Prime Full Load
Level 0: Open Power Unit (dBA)	83.8

Sound data is provided at 7 m (23 ft). Engine-generator set tested in accordance with ISO 8528-10 and with infinite exhaust.

## EMISSIONS DATA

// Consult your local MTU Onsite Energy 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, AS 2789 and DIN 6271.

// Deration factor:

Altitude: Consult your local MTU Onsite Energy distributor for altitude derations.

Temperature: Consult your local MTU Onsite Energy distributor for temperature derations.

Materials and specifications subject to change without notice.