

DIESEL ENGINE-GENERATOR SET

AIR CHARGE-AIR COOLING

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

(Reference DS500D5S-Fuel Optimized for Standby Rating Technical Data)



SYSTEM RATINGS

| Prime ** | DP450D5SVA | DP450D5SFA | DP450D5SEA |
|-----------------|--------------|--------------|--------------|
| Voltage (L-L) | 380V | 400V | 415V |
| Phase | 3 | 3 | 3 |
| PF | 0.8 | 0.8 | 0.8 |
| Hz | 50 | 50 | 50 |
| kW | 360 | 360 | 360 |
| kVA | 450 | 450 | 450 |
| AMPS | 684 | 650 | 626 |
| skVA@30% | | | |
| Voltage Dip | 720 | 960 | 1200 |
| Generator Model | 572RSL4025 | 572RSL4027 | 572RSL4027 |
| Temp Rise | 125 °C/40 °C | 125 °C/40 °C | 125 °C/40 °C |
| Connection | 4 LEAD WYE | 4 LEAD WYE | 4 LEAD WYE |

** 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 to ISO 8528-5 for Transient Response
- Verified product design, quality and performance integrity
- All engine systems are prototype and factory tested

// **Power Rating**

- Accepts Rated Load in One Step Per NFPA 110
- Permissible average power output during 24 hours of operation is approved up to 75%.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 10V1600 Diesel Engine
 - 17.5 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
 - // Engine-generator resilient mounted
 - // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - PMG (Permanent Magnet Generator) supply to regulator
 - 300% Short Circuit Capability
 - 2/3 Pitch Windings
 - // Digital Control Panel(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filters
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Blower Fan & Fan Drive
 Radiator - Unit Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Box & Cables
 Flexible Fuel Connectors
 Flexible Exhaust Connection

// Generator

NEMA MG1, IEEE and ANSI standards compliance for temperature rise and motor starting
 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
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 3% Maximum Harmonic Content

// Digital Control Panel(s)

Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 CAN Bus ECU Communications
 Windows-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 16 Programmable Contact Inputs
 Up to 11 Contact Outputs
 UL Recognized, CSA Certified, CE Approved
 Event Recording
 IP 54 Front Panel Rating with Integrated Gasket
 NFPA110 Compatible

* Represents standard product only. Consult Factory/MTU Onsite Energy Distributor for additional configurations.

APPLICATION DATA

// Engine

| | |
|-------------------------|-------------------------------|
| Manufacturer | MTU |
| Model** | 10V1600G10F |
| Type | 4-Cycle |
| Arrangement | 10-V |
| Displacement: L (Cu In) | 17.5 (1,068) |
| Bore: cm (in) | 12.2 (4.8) |
| Stroke: cm (in) | 15 (5.91) |
| Compression Ratio | 17.5:1 |
| Rated RPM | 1,500 |
| Engine Governor | Electronic Isochronous (ADEC) |
| Max Power: kWm (bhp)** | 407 (546) |
| Speed Regulation | ±0.25% |
| Air Cleaner | Dry |

// Liquid Capacity (Lubrication)

| | |
|---------------------------------------|-------------|
| Total Oil System: L (gal) | 61 (16) |
| Engine Jacket Water Capacity: L (gal) | 60 (15.9) |
| System Coolant Capacity: L (gal) | 99.3 (26.2) |

// Electrical

| | |
|--|-------|
| Electric Volts DC | 24 |
| Cold Cranking Amps Under -17.8 °C (0 °F) | 1,000 |

// Fuel System

| | |
|--------------------------------|---|
| Fuel Supply Connection Size | #10 JIC 37° Female M20 x 1.5 Male Adapter Provided |
| Fuel Return Connection Size | #6 JIC 37° Female M14 x 1.5 Male Adapter Provided |
| Maximum Fuel Lift: m (ft) | 5 (16) |
| Recommended Fuel | Diesel #2 |
| Total Fuel Flow: L/hr (gal/hr) | 340.7 (90) |

// Fuel Consumption

| | |
|--|-----------|
| | **PRIME |
| At 100% of Power Rating: L/hr (gal/hr) | 91 (24.1) |
| At 75% of Power Rating: L/hr (gal/hr) | 73 (19.4) |
| At 50% of Power Rating: L/hr (gal/hr) | 53 (13.9) |

// Cooling - Radiator System

| | |
|---|--------------|
| | **PRIME |
| Ambient Capacity of Radiator: °C (°F) | 50 (122) |
| Max. Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O) | 0.125 (0.5) |
| Water Pump Capacity: L/min (gpm) | 433 (115) |
| Heat Rejection to Coolant: kW (BTUM) | 210 (11,942) |
| Heat Rejection to After Cooler: kW (BTUM) | 47 (2,673) |
| Heat Radiated to Ambient: kW (BTUM) | 21 (1,194) |

// Air Requirements

| | |
|--|--------------|
| | **PRIME |
| Aspirating: *m ³ /min (SCFM) | 24 (848) |
| Air Flow Required for Rad. | |
| Cooled Unit: *m ³ /min (SCFM) | 554 (19,564) |
| Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM) | 159 (5,613) |

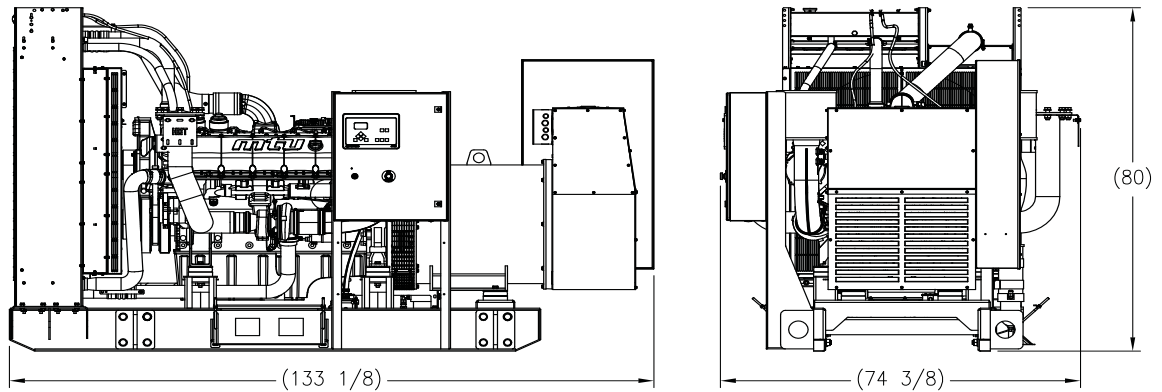
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

| | |
|---|-------------|
| | **PRIME |
| Gas Temp. (Stack): °C (°F) | 549 (1,020) |
| Gas Volume at Stack | |
| Temp: m ³ /min (CFM) | 68 (2,416) |
| Maximum Allowable | |
| Back Pressure: kPa (in. H ₂ O) | 15 (60.2) |

** Prime technical data is for a Fuel-Optimized Prime unit.

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) | 3,385 x 1,890 x 2,032 mm (133.125 x 74.375 x 80 in) | 4,552 kg (10,035 lb) |

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) | 88.2 |

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

| NO _x + NMHC | CO | PM |
|------------------------|-----|-----|
| C/F | C/F | C/F |

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 Power Generation Distributor for altitude derations.
 - Temperature:** Consult your local MTU Onsite Energy Power Generation Distributor for temperature derations.

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor