

# DIESEL ENGINE-GENERATOR SET

## 1250-XC6DT2

1250 kWe / 60 Hz / Standby  
 1125 kWe / 60 Hz / Prime  
 480 - 4160V



### SYSTEM RATINGS

#### Standby

| Voltage (L-L)    | 480V**     | 600V**     | 4160V      |
|------------------|------------|------------|------------|
| Phase            | 3          | 3          | 3          |
| PF               | 0.8        | 0.8        | 0.8        |
| Hz               | 60         | 60         | 60         |
| kW               | 1250       | 1250       | 1250       |
| kVA              | 1562.5     | 1562.5     | 1562.5     |
| AMPS             | 1879       | 1504       | 217        |
| skVA@30%         |            |            |            |
| Voltage Dip      | 3100       | 4650       | 3100       |
| Generator Model* | 742RSL4048 | 743RSS4288 | 742FSM4366 |
| Temp Rise        | 130°C/27°C | 125°C/40°C | 130°C/27°C |
| Connection       | 4 BAR WYE  | 4 BAR WYE  | 6 LEAD WYE |


#### Prime

| Voltage (L-L)    | 480V       | 600V       | 4160V      |
|------------------|------------|------------|------------|
| Phase            | 3          | 3          | 3          |
| PF               | 0.8        | 0.8        | 0.8        |
| Hz               | 60         | 60         | 60         |
| kW               | 1125       | 1125       | 1125       |
| kVA              | 1406.25    | 1406.25    | 1406.25    |
| AMPS             | 1692       | 1353       | 195        |
| skVA@30%         |            |            |            |
| Voltage Dip      | 3100       | 4650       | 3100       |
| Generator Model* | 742RSL4048 | 743RSS4288 | 742FSM4366 |
| Temp Rise        | 105°C/40°C | 105°C/40°C | 105°C/40°C |
| Connection       | 4 BAR WYE  | 4 BAR WYE  | 6 LEAD WYE |

\* The Generator Model Number identified in the table is for standard C Series Configuration. Consult the factory for alternate configuration.

\*\* UL2200 Offered

## STANDARD FEATURES

- // EPA Tier 2 Certified
- // Engine-Generator Set Tested to ISO 8528-5 for Transient Response
- // UL2200, CSA Listing Offered
- // 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
- // 12V 4000 Diesel Engine
  - 57.2 Liter Displacement
  - Common Rail Fuel Injection
  - 4-Cycle
- // Complete Range of Accessories
- // Permanent Magnet Generator (PMG)
  - Brushless, Rotating Field
  - 300% Short Circuit Capability
  - 2/3 Pitch Windings
  - Standard for 570 frame and larger
  - Optional for 430 frame and smaller
- // Digital Control Panel(s)
  - UL Recognized,  us, NFPA 110
  - Complete System Metering
  - LCD Display
- // Cooling System
  - Integral Set-Mounted
  - Engine Driven Fan

## STANDARD EQUIPMENT

### // Engine


Air Cleaners  
 Oil Pump  
 Full Flow Oil Filter  
 Closed Crankcase Ventilation  
 Jacket Water Pump  
 Inter Cooler Water Pump  
 Thermostat  
 Exhaust Manifold - Dry  
 Blower Fan & Fan Drive  
 Radiator - Unit Mounted  
 Electric Starting Motor - 24V  
 Governor - Electronic Isochronous  
 Base - Structural Steel  
 SAE Flywheel & Bell Housing  
 Charging Alternator - 24V  
 Battery Box & Cables  
 Flexible Fuel Connectors  
 Flexible Exhaust Connection  
 EPA Certified Engine

### // 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  
 130°C Standby 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  
 SAE J1939 Engine ECU Communications  
 Windows-Based Software  
 Multilingual Capability  
 Remote Communications to our RDP-110 Remote Annunciator  
 16 Programmable Contact Inputs  
 7 Contact Outputs  
 UL Recognized,  us, CE Approved  
 Event Recording  
 IP 54 Front Panel Rating with Integrated Gasket  
 NFPA110 Level Compatible

## APPLICATION DATA

### // Engine

|                                    |                               |
|------------------------------------|-------------------------------|
| Manufacturer                       | MTU                           |
| Model                              | 12V 4000 G43 (T1238A34)       |
| Type                               | 4-Cycle                       |
| Arrangement                        | 12-V                          |
| Displacement: L (in <sup>3</sup> ) | 57.2 (3,491)                  |
| Bore: cm (in)                      | 17 (6.69)                     |
| Stroke: cm (in)                    | 21 (8.27)                     |
| Compression Ratio                  | 16.5:1                        |
| Rated RPM                          | 1,800                         |
| Engine Governor                    | Electronic Isochronous (ADEC) |
| Maximum Power: Standby: kWm (bhp)  | 1,736 (2,328)                 |
| Maximum Power: Prime: kWm (bhp)    | 1,520 (2,038)                 |
| Speed Regulation                   | ±0.25%                        |
| Air Cleaner                        | Dry                           |

### // Liquid Capacity (Lubrication)

|                                       |            |
|---------------------------------------|------------|
| Total Oil System: L (gal)             | 260 (68.7) |
| Engine Jacket Water Capacity: L (gal) | 160 (42.3) |
| After Cooler Water Capacity: L (gal)  | 40 (10.6)  |
| System Coolant Capacity: L (gal)      | 583 (154)  |

### // Electrical

|  |       |
|--|-------|
| Electric Volts DC                      | 24    |
| Cold Cranking Amps Under -17.8°C (0°F) | 2,600 |

### // Fuel System

|                                |           |
|--------------------------------|-----------|
| Fuel Supply Connection Size    | 1" NPT    |
| Fuel Return Connection Size    | 3/4" NPT  |
| Maximum Fuel Lift: m (ft)      | 1 (3)     |
| Recommended Fuel               | Diesel #2 |
| Total Fuel Flow: L/hr (gal/hr) | 720 (190) |

### // Fuel Consumption

|  | STANDBY    | PRIME      |
|--|------------|------------|
| At 100% of Power Rating: L/hr (gal/hr) | 341 (90)   | 309 (81.5) |
| At 75% of Power Rating: L/hr (gal/hr)  | 268 (70.8) | 238 (62.9) |
| At 50% of Power Rating: L/hr (gal/hr)  | 192 (50.7) | 176 (46.4) |

### // Cooling - Radiator System

|  | STANDBY      | PRIME        |
|--|--------------|--------------|
| Ambient Capacity of Radiator: °C (°F)  | 50 (122)     | 50 (122)     |
| Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H <sub>2</sub> O) | 0.12 (0.5)   | 0.12 (0.5)   |
| Water Pump Capacity: L/min (gpm)   | 1,117 (295)  | 1,117 (295)  |
| After Cooler Pump Capacity:<br>L/min (gpm)   | 583 (154)    | 583 (154)    |
| Heat Rejection to Coolant:<br>kW (BTUM)  | 599 (34,088) | 524 (29,788) |
| Heat Rejection to After Cooler:<br>kW (BTUM)   | 436 (24,773) | 366 (20,831) |
| Heat Radiated to Ambient: kW (BTUM)  | 144 (8,165)  | 133 (7,562)  |

### // Air Requirements

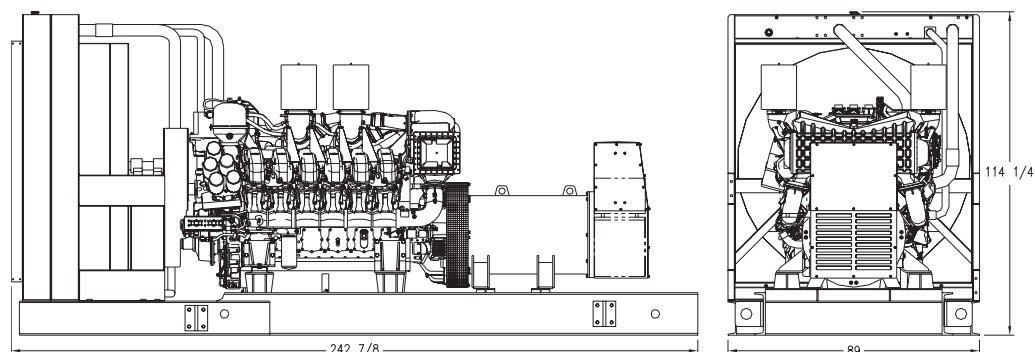
|  | STANDBY        | PRIME          |
|--|----------------|----------------|
| Aspirating: *m <sup>3</sup> /min (SCFM)  | 138 (4,873)    | 126 (4,450)    |
| Air Flow Required for Rad.<br>Cooled Unit: *m <sup>3</sup> /min (SCFM)                                 | 1,518 (53,611) | 1,518 (53,611) |
| Air Flow Required for Heat<br>Exchanger/Remote Rad. based<br>on 25°F Rise: *m <sup>3</sup> /min (SCFM) | 525 (18,414)   | 486 (17,054)   |

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

### // Exhaust System

|  | STANDBY      | PRIME        |
|--|--------------|--------------|
| Gas Temp. (Stack): °C (°F)                                     | 425 (797)    | 400 (752)    |
| Gas Volume at Stack<br>Temp: m <sup>3</sup> /min (CFM)         | 336 (11,866) | 306 (10,806) |
| Maximum Allowable<br>Back Pressure: kPa (in. H <sub>2</sub> O) | 8.5 (34.1)   | 8.5 (34.1)   |

## WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only, based on standard open power 480 volt engine-generator set. Lengths may vary with other voltages. Do not use for installation design. See website for unit specific template drawings.

### System

OPU

### Dimensions (L x W x H)

6,170 x 2,260 x 2,900 mm (242.88 x 89 x 114.25 in)

### Weight (less tank)

13,786 kg (30,392 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

OPU w/Critical Grade Muffler (dBA)

### Standby Full Load

102

### Standby No Load

94

### Prime Full Load

100.5

### Prime No Load

94

Sound data is provided at 7 m (23 ft).

## EMISSIONS DATA

### NO<sub>x</sub> + NMHC

C/F

### CO

C/F

### PM

C/F

### All units are in g/hp-hr and are EPA D2 cycle values.

Emission levels of the engine may vary as a function of ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data provided are laboratory results from one engine representing this rating. The data was obtained under controlled environmental conditions with calibrated instrumentation traceable to the United States National Bureau of Standards and in compliance with US EPA regulations found within 40 CFR Part 89. The weighted cycle value from each engine is guaranteed to be below the US EPA Standards at the US EPA defined conditions.

## 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-3046/1, BS 5514, AS 2789, and DIN 6271.
  - // 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, overload power in accordance with ISO-3046/1, BS 5514, AS 2789, and DIN 6271. For limited running time and base load ratings, consult the factory.
  - // Deration Factor:
    - Altitude:** 2% per 500 m (1,640 ft) above 1,000 m (3,281 ft)\* at 25°C (77°F). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
    - Temperature:** 1% per 5°C (9°F) over 45°C (113°F) at 100 m (328 ft).
- \*Contact factory for deration above 2,000 m (6,562 ft).

Materials and specifications subject to change without notice.

C/F = Consult Factory/MTU Onsite Energy Distributor