

# DIESEL ENGINE-GENERATOR SET

## 650-XC6DT2

650 kWe / 60 Hz / Standby  
208 - 4160V

(Reference 615-XC6DT2 for Prime Rating Technical Data)



### SYSTEM RATINGS

#### Standby

Voltage (L-L)	208V**	240V**	480V**	600V**	4160V
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
kW	650	650	650	650	650
kVA	812.5	812.5	812.5	812.5	812.5
AMPS	2255	1955	977	782	113
skVA@30%					
Voltage Dip	1750	1750	1750	1350	1850
Generator Model*	573RSL4033	573RSL4033	573RSL4033	573RSS4274	574FSM4358
Temp Rise	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C	130 °C/40 °C
Connection	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE	6 LEAD WYE

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

\*\* UL 2200 Offered

### CERTIFICATIONS AND STANDARDS

// **Emissions** – EPA Tier 2 Certified

// **Engine-generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004**

// **UL 2200 / CSA – Optional**

- UL 2200 Listed
- CSA Certified

// **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 85%.

## STANDARD FEATURES\*

- // MTU Onsite Energy is a single source supplier
  - // Global Product Support
  - // 2 Year Standard Warranty
  - // 12V 2000 Diesel Engine
    - 23.9 Liter Displacement
    - Electronic Unit Pump Injection
    - 4-Cycle
  - // Complete Range of Accessories
- // Generator
    - Brushless, Rotating Field Generator
    - PMG (Permanent Magnet Generator) supply to regulator
    - 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, 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 Filter  
 Closed Crankcase Ventilation  
 Jacket Water Pump  
 Inter Cooler Water Pump  
 Thermostats  
 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 Maximum 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  
 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	12V 2000 G45TB
Type	4-Cycle
Arrangement	12-V
Displacement: L (in <sup>3</sup> )	23.9 (1,457)
Bore: cm (in)	13 (5.1)
Stroke: cm (in)	15 (5.9)
Compression Ratio	16:1
Rated RPM	1,800
Engine Governor	Electronic Isochronous (ADEC)
Maximum Power: kWm (bhp)	780 (1,046)
Speed Regulation	±0.25%
Air Cleaner	Dry

### // Liquid Capacity (Lubrication)

Total Oil System: L (gal)	77 (20.3)
Engine Jacket Water Capacity: L (gal)	110 (29.1)
After Cooler Water Capacity: L (gal)	20 (5.3)
System Coolant Capacity: L (gal)	274 (72.4)

### // Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,750

### // Fuel System

Fuel Supply Connection Size	3/4" NPT
Fuel Return Connection Size	1/4" NPT
Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	480 (127)

### // Fuel Consumption

	STANDBY
At 100% of Power Rating: L/hr (gal/hr)	192.7 (50.9)
At 75% of Power Rating: L/hr (gal/hr)	145 (38.3)
At 50% of Power Rating: L/hr (gal/hr)	98.4 (26)

### // Cooling - Radiator System

	STANDBY
Ambient Capacity of Radiator: °C (°F)	50 (122)
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H <sub>2</sub> O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	833 (220)
After Cooler Pump Capacity: L/min (gpm)	257 (68)
Heat Rejection to Coolant: kW (BTUM)	270 (15,354)
Heat Rejection to After Cooler: kW (BTUM)	235 (13,364)
Heat Radiated to Ambient: kW (BTUM)	76.4 (4,345)

### // Air Requirements

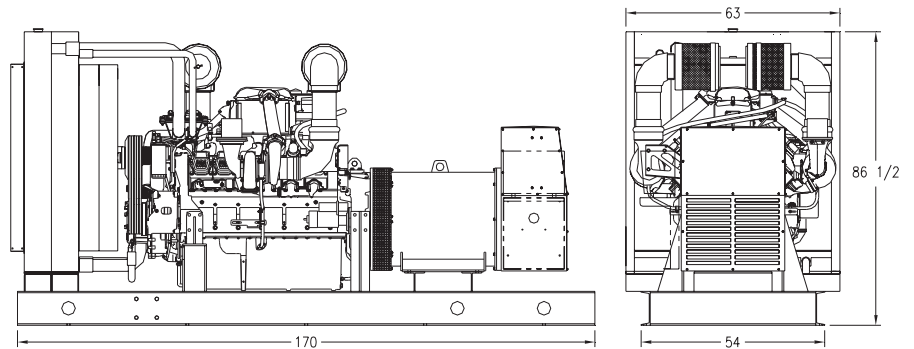
	STANDBY
Aspirating: *m <sup>3</sup> /min (SCFM)	63 (2,225)
Air Flow Required for Rad.	
Cooled Unit: *m <sup>3</sup> /min (SCFM)	1,132 (39,977)
Remote Cooled Applications;	
Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m <sup>3</sup> /min (SCFM)	277 (9,798)

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

### // Exhaust System

	STANDBY
Gas Temp. (Stack): °C (°F)	550 (1,022)
Gas Volume at Stack	
Temp: m <sup>3</sup> /min (CFM)	159 (5,615)
Maximum Allowable	
Back Pressure: kPa (in. H <sub>2</sub> O)	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.

<b>System</b>	<b>Dimensions (L x W x H)</b>	<b>Weight (less tank)</b>
OPU	4,320 x 1,600 x 2,200 mm (170 x 63 x 86.5 in)	5,492 kg (12,108 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

<b>Unit Type</b>	<b>Standby Full Load</b>
Level 0: Open Power Unit (dBA)	99.5

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

<b>NO<sub>x</sub> + NMHC</b>	<b>CO</b>	<b>PM</b>
4.46	0.35	0.02

### All units are in g/hp-hr and at 100% load.

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 (not shown) 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 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