

DIESEL POWER MODULE

MTU 16V4000 DS1955

Voltages:

2160 kWe / 2700 kVA / 60 Hz / Standby - 480V
 1955 kWe / 2443 kVA / 60 Hz / Prime - 480V
 1760 kWe / 2200 kVA / 60 Hz / Continuous - 480V

1900 kWe / 2375 kVA / 50 Hz / Standby - 400V
 1721 kWe / 2151 kVA / 50 Hz / Prime - 400V
 1500 kWe / 1875 kVA / 50 Hz / Continuous - 400V



SYSTEM RATINGS

60 Hz

Voltage (L-L)	480V	480V	480V
Phase	3	3	3
PF	0.8	0.8	0.8
Hz	60	60	60
kW	2,160	1,955	1,760
kVA	2,700	2,443	2,200
Amps	3,251	2,942	2,649
skVA@30%			
Voltage Dip	5,750	5,750	5,750
Generator Model	744RDL4056	744RDL4056	744RDL4056
Temp Rise	150 °C/40 °C	125 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE

50 Hz

Voltage (L-L)	400V	400V	400V
Phase	3	3	3
PF	0.8	0.8	0.8
Hz	50	50	50
kW	1,900	1,721	1,500
kVA	2,375	2,151	1,875
Amps	3,432	3,108	2,709
skVA@30%			
Voltage Dip	4,530	4,530	4,530
Generator Model	744RDL4056	744RDL4056	744RDL4056
Temp Rise	150 °C/40 °C	125 °C/40 °C	105 °C/40 °C
Connection	4 BAR WYE	4 BAR WYE	4 BAR WYE

CERTIFICATIONS AND STANDARDS

// Emissions

- Fuel Optimized

// Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004

// Container

- CSC Certified

// Performance Assurance Certification (PAC)

- 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

- Permissible average power output during 24 hours of operation is approved up to 85% for standby rated unit.
- Permissible average power output during 24 hours of operation is approved up to 75% for prime rated unit.
- Permissible average power output during 24 hours of operation is approved up to 100% for continuous rated unit.

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
- // Global Product Support
- // Consult factory for specific warranty terms
- // 16V 4000 Diesel Engine
 - 76.3 Liter Displacement
 - Common Rail Fuel Injection
 - 4-Cycle
- // Engine-Generator Resilient Mounted
- // Complete Range of Accessories
- // Generator
 - Brushless, Rotating Field Generator
 - 2/3 Pitch Windings
 - PMG (Permanent Magnet Generator) Supply to Regulator
 - 300% Short Circuit Capability
- // Digital Control Panel
 - Complete System Metering
 - LCD Display
- // Cooling System
 - Remote Mounted / Vertical Split Cores
 - Electrically Driven Fans

STANDARD EQUIPMENT*

// Engine

Air Cleaners
 Oil Pump
 Oil Drain Extension & S/O Valve
 Lube Oil Multi-Stage Filter
 Closed Crankcase Ventilation
 Jacket Water Pump
 Thermostats
 Radiator - Remote Mounted
 Electric Starting Motor - 24V
 Governor - Electronic Isochronous
 Base - Formed Steel
 SAE Flywheel & Bell Housing
 Charging Alternator - 24V
 Battery Rack & Cables
 Fuel Optimized (Both 60 Hz and 50 Hz)

// 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
 2 Bearing, Sealed
 Close Coupling

Full Amortisseur Windings
 125% Rotor Balancing
 3-Phase Voltage Sensing
 ±0.25% Voltage Regulation
 100% of Rated Load - One Step
 5% Maximum Total Harmonic Distortion

Note: Air filter will cause 5% derate in power output (kWe) and may also affect fuel consumption.

// Digital Control Panel(s)

Digital Metering
 Engine/Generator Protection Functions
 CANBus ECU Communications
 Multilingual Capability
 Programmable Contact Outputs

// Container

40' High Cube ISO Container
 Rear Container Double Doors
 Three Lockable Personnel Access Doors
 1,500 Liters (400 gallons) UL 142 Certified Diesel Fuel Tank
 Externally Mounted Critical Grade Exhaust Silencer (stored during transport between the split core radiator)
 NEMA 1 Floor-Standing Generator Set Breaker Panel
 Main Line Circuit Breaker Rated at 3200 Amps and 65KAIC
 24 VDC Incandescent Lights
 Field Adjustable Timer, Factory Set to 60 Minutes

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

APPLICATION DATA

// Engine

Manufacturer	MTU	
Model 60 Hz Standby	16V 4000 G83 3D	
Model 60 Hz Prime	16V 4000 G83 3B	
Model 60 Hz Continuous	16V 4000 G83 3A	
Model 50 Hz Standby	16V 4000 G63 3D	
Model 50 Hz Prime	16V 4000 G63 3B	
Model 50 Hz Continuous	16V 4000 G63 3A	
Type	4-Cycle	
Arrangement	16-V	
Displacement: L (Cu In)	76.3 (4,656)	
Bore: cm (in)	17 (6.69)	
Stroke: cm (in)	21 (8.27)	
Compression Ratio	16.5:1	
Rated RPM: 60 Hz	1,800	
Rated RPM: 50 Hz	1,500	
Engine Governor	Electronic Isochronous (ADEC)	
Standby Rated Power:	60 Hz: kWm (hp)	2,500 (3,352)
	50 Hz: kWm (hp)	2,185 (2,930)
Prime Rated Power:	60 Hz: kWm (hp)	2,280 (3,057)
	50 Hz: kWm (hp)	1,965 (2,635)
Continuous Rated Power:	60 Hz: kWm (hp)	1,950 (2,614)
	50 Hz: kWm (hp)	1,635 (2,192)
Speed Regulation	±0.25%	
Air Cleaner	Dry	

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	300 (79.3)
Total Oil Change: L (gal)	240 (63.4)
Engine Jacket Water Capacity: L (gal)	175 (46.2)
After Cooler Water Capacity: L (gal)	50 (13.2)
System Coolant Capacity: L (gal)	852 (225)

// Electrical

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

// Fuel System

Maximum Fuel Lift: m (ft)	3 (10)
Recommended Fuel	Diesel #2
Total Fuel Flow: L/hr (gal/hr)	1,200 (317)

// Fuel Consumption

60 Hz	STANDBY	PRIME	CONTINUOUS
At 100% of Power Rating:			
L/hr (gal/hr)	613 (162)	538 (142)	458 (121)
At 75% of Power Rating:			
L/hr (gal/hr)	435 (115)	397 (105)	352 (93)
At 50% of Power Rating:			
L/hr (gal/hr)	303 (80)	276 (73)	254 (67)
50 Hz	STANDBY	PRIME	CONTINUOUS
At 100% of Power Rating:			
L/hr (gal/hr)	500 (132)	435 (115)	367 (97)
At 75% of Power Rating:			
L/hr (gal/hr)	371 (98)	329 (87)	284 (75)
At 50% of Power Rating:			
L/hr (gal/hr)	254 (67)	231 (61)	201 (53)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	55 (131)
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)	1,350 (357)
Heat Rejection to Coolant: kW (BTUM)	**960 (54,593)
Heat Rejection to After Cooler: kW (BTUM)	**560 (31,846)
Fan Power: kW (hp)	99.5 (133.4)

// Air Requirements

Aspirating: *(m ³ /min) SCFM	**192 (6,780)
Air Flow Required for Rad.	
Cooled Unit: *(m ³ /min) SCFM	3,862 (136,409)

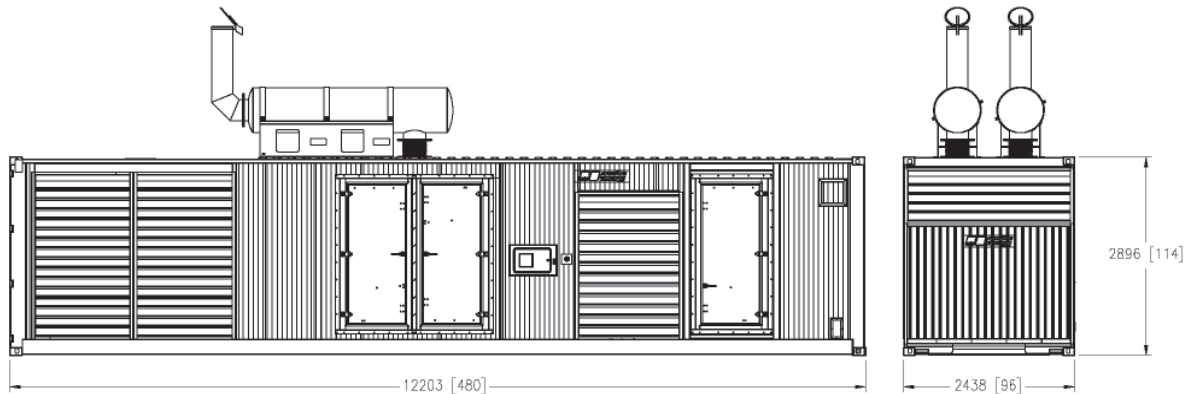
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

// Exhaust System

Gas Temp. (Stack): °C (°F)	**505 (941)
Gas Volume at Stack	
Temp: m ³ /min (CFM)	**504 (17,799)
Maximum Allowable	
Back Pressure: kPa (in. H ₂ O)	8.5 (34.1)

** For 60 Hz Standby Rated Power

WEIGHTS AND DIMENSIONS



Drawing above for illustration purposes only. Do not use for installation design.

System	Dimensions (L x W x H)	Weight (wet/no fuel)
Power Module	12,203 x 2,438 x 2,896 mm (480 x 96 x 114 in)	30,546 kg (67,201 lb)

Weights and dimensions are based on containerized units and are estimates only. Consult the factory for accurate weights and dimensions for your specific generator set.

SOUND DATA

Unit Type	Full Load - Standby	Full Load - Prime	Full Load - Continuous
Power Module dB(A)	C/F	C/F	C/F

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

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, and AS 2789. Average load factor: $\leq 85\%$. Standby 50 Hz operating hours per year: Max. 500.
- // Prime power and continuous ratings apply to installations where utility power is unavailable or unreliable. At varying load for prime power ratings or non-varying load for continuous ratings, the number of generator set operating hours is unlimited. A 10% overload capacity is available for one hour in twelve for both ratings. Ratings are in accordance with ISO 8528-1, ISO 3046-1, BS 5514, and AS 2789. Average load factor: $\leq 75\%$ (Prime) $\leq 100\%$ (Continuous).
- // 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.

Product intended for use outside of the United States.

C/F = Consult Factory/MTU Onsite Energy Distributor

N/A = Not Available

MTU Onsite Energy

A Rolls-Royce Power Systems Brand

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