

GAS GENERATOR SET

MTU 12V0183 GS400

355 kWe / 60 Hz / Prime
208 - 600V

Reference MTU 12V0183 GS400 (400 kWe) for Standby Rating Technical Data



SYSTEM RATINGS

Prime

Voltage (L-L)	240V**	208V**	240V**	480V**	600V**
Phase	1	3	3	3	3
PF	1	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas Ratings: Amps	1458	1232	1068	534	427
Natural Gas Ratings: kW/kVA skVA@30%	350/350	355/443	355/443	355/443	355/443
Voltage Dip	760	1500	1500	1500	1450
Generator Model	574RSL4037	572RSL4029	572RSL4029	572RSL4029	572RSS4272
Temp Rise	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C	105 °C/40 °C
Connection	12 LEAD DOUBLE DELTA	12 LEAD LOW WYE	12 LEAD HI DELTA	12 LEAD HI WYE	4 LEAD WYE

** UL 2200 Offered

CERTIFICATIONS AND STANDARDS

// **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)**

- 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

STANDARD FEATURES*

- // MTU Onsite Energy is a single source supplier
 - // Global Product Support
 - // 2 Year Standard Warranty
 - // 21.9 L Turbo Engine Charge Air Cooling
 - 21.9 Liter Displacement
 - 4-Cycle
 - // 3-Way Catalyst
 - // 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(s)
 - UL Recognized, CSA Certified, NFPA 110
 - Complete System Metering
 - LCD Display
 - // Cooling System
 - Integral Set-Mounted
 - Engine Driven Fan

STANDARD EQUIPMENT*

// Engine

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 Air Cleaner
 Oil Pump
 Oil Drain Extension & S/O Valve
 Full Flow Oil Filter
 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
 EPA Certified Engine

// Generator

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 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, Volts-per-hertz Regulator
 ±1% Voltage Regulation No Load to Full Load

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 Brushless Alternator with Brushless Pilot Exciter
 4 pole, Rotating Field
 105 °C Maximum Prime Temperature Rise
 1 Bearing, Sealed
 Flexible Coupling
 Full Amortisseur Windings
 125% Rotor Balancing
 3-phase Voltage Sensing
 100% of Rated Load - One Step
 5% Maximum Total Harmonic Distortion

// Digital Control Panel(s)

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 Digital Metering
 Engine Parameters
 Generator Protection Functions
 Engine Protection
 SAE J1939 Engine ECU Communications
 Windows®-Based Software
 Multilingual Capability
 Remote Communications to RDP-110 Remote Annunciator
 Programmable Input and Output Contacts
 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	Doosan
Model	21.9L CAC
Type	4-Cycle
Arrangement	12-V
Displacement: L (in ³)	21.9 (1,338)
Bore: cm (in)	12.8 (5.04)
Stroke: cm (in)	14.2 (5.59)
Compression Ratio	10.5:1
Rated RPM	1,800
Engine Governor	Bosch
Maximum Power (NG): kWm (bhp)	410 (550)
Speed Regulation	±0.5%
Air Cleaner	Dry

// Liquid Capacity (Lubrication)

Total Oil System: L (gal)	47.1 (12.4)
Engine Jacket Water Capacity: L (gal)	52.3 (11.5)
System Coolant Capacity: L (gal)	291 (64)

// Electrical

Electric Volts DC	24
Cold Cranking Amps Under -17.8 °C (0 °F)	1,050

// Fuel Inlet

Fuel Supply Connection Size	3" NPT
Fuel Supply Pressure: mm H ₂ O (in. H ₂ O)	178–279 (7–11)

// Fuel Consumption (NG-1000 BTU/ft³)

At 100% of Power Rating: m ³ /hr (ft ³ /hr)	109.3 (3,861)
At 75% of Power Rating: m ³ /hr (ft ³ /hr)	84.1 (2,970)
At 50% of Power Rating: m ³ /hr (ft ³ /hr)	61.7 (2,178)

// Cooling - Radiator System

Ambient Capacity of Radiator: °C (°F)	50 (122)*
Maximum Restriction of Cooling Air, Intake, and Discharge Side of Rad.: kPa (in. H ₂ O)	0.12 (0.5)
Water Pump Capacity: L/min (gpm)	660 (174)
Heat Rejection to Coolant: kW (BTUM)	453 (25,760)
Heat Radiated to Ambient: kW (BTUM)	118.2 (6,720)
Fan Power: kW (hp)	31.3 (42)

* Installation of enclosures reduces the ambient capacity of the cooling system by 1 °C (1.8 °F). Gravity exhaust louvers reduce ambient capacity of the cooling system by an additional 3 °C (5.5 °F).

// Air Requirements

Aspirating: *m ³ /min (SCFM)	24.6 (841)
Air Flow Required for Rad.	
Cooled Unit: **m ³ /min (SCFM)	1,133 (40,000)
Remote Cooled Applications; Air Flow Required for Dissipation of Radiated Gen-set Heat for a Max of 25 °F Rise: *m ³ /min (SCFM)	429 (15,160)

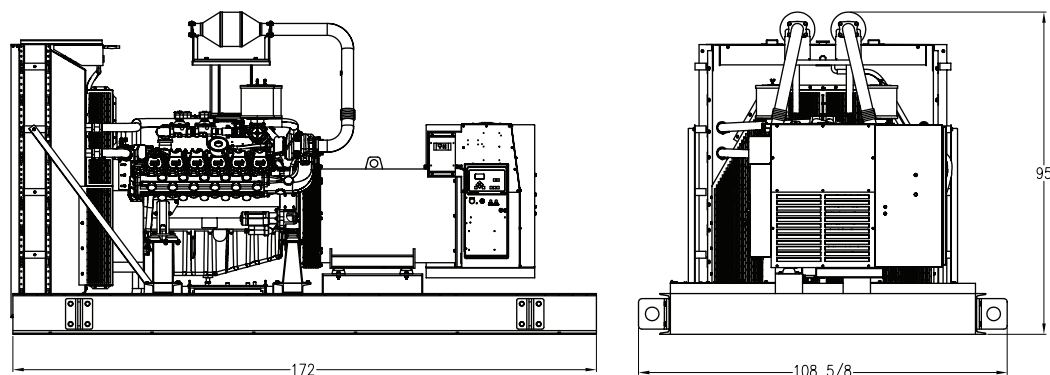
* Air density = 1.184 kg/m³ (0.0739 lbm/ft³)

** At 0.25 kPa (1 in. H₂O) static pressure and 52 °C (125 °F) at radiator

// Exhaust System

Gas Temp. (Stack): °C (°F)	582 (1,080)
Gas Volume at Stack Temp: m ³ /min (CFM)	72.2 (2,550)
Maximum Allowable Back Pressure: kPa (in. H ₂ O)	2.5 (10.25)

WEIGHTS AND DIMENSIONS



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

System

Open Power Unit (OPU)

Dimensions (L x W x H)

4,369 x 2,760 x 2,413 mm (172 x 108.63 x 95 in)

Weight (dry)

5,228 kg (11,500 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 generator set.

SOUND DATA

Unit Type

Level 0: Open Power Unit dB(A)

Prime Full Load (NG)

85.5

Prime Full Load (LP)

C/F

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

EMISSIONS DATA

Fuel Type

Natural Gas

THC + NO_x

0.39

CO

0.1

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

Emission levels of the engine may vary with ambient temperature, barometric pressure, humidity, fuel type and quality, installation parameters, measuring instrumentation, etc. The data was obtained in compliance with US EPA regulations.

RATING DEFINITIONS AND CONDITIONS

- // Ambient capability factor at 984 ft (300 m). Consult your local MTU Onsite Energy Power Generation Distributor for other altitudes.
- // 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, and AS 2789. Average load factor: ≤ 75%. For limited running time and base load ratings, consult the factory.
- // Deration Factor:
Production tolerances in engines and installed components can account for power variations. Altitude, temperature and excessive exhaust and intake restrictions should be applied to power calculations. Consult your local MTU Onsite Energy Power Generation Distributor for derations.

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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