



Gas Generator Set

mtu 12V1600 GS450

450 kW/60 Hz/Standby/208 - 600V

System ratings

Voltage (L-L)	208V [†]	240V [†]	380V	480V [†]	600V
Phase	3	3	3	3	3
PF	0.8	0.8	0.8	0.8	0.8
Hz	60	60	60	60	60
Natural Gas (NG)					
Amps	1,561	1,353	855	677	541
kW/kVA	450/563	450/563	450/563	450/563	450/563
Liquid Propane (LP)					
Amps	1,214	1,052	665	526	421
kW/kVA	350/438	350/438	350/438	350/438	350/438
NG and LP					
skVA@30% voltage dip	1,419	1,419	1,372	1,490	1,662
Generator model	572RSL6427	572RSL6427	572RSL6429	572RSL6425	572RSS4270
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 WYE	12 LEAD DELTA	12 LEAD WYE	12 LEAD WYE	4 LEAD WYE

[†] UL 2200 offered

Certifications and standards

- Emissions
 - EPA Part 60 Subpart JJJJ Stationary Non-Emergency
 - EPA Part 1048 Mobile
 - EPA Blue Sky Series certified
- Generator set is designed and manufactured in facilities certified to standards ISO 9001:2008 and ISO 14001:2004
- Seismic certification – optional
 - 2021 IBC certification
 - HCAI pre-approval
- UL 2200 - optional (refer to *System ratings* for availability)
- CSA - optional
 - CSA C22.2 No. 100
 - CSA C22.2 No. 14
- 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
 - Permissible average power output during 24 hours of operation is approved up to 85%.

Standard features *

- Single source supplier
- Global product support
- Two (2) Year/3,000 Hour Basic Limited Warranty
- 12V1600 gas engine
 - 21.0 liter displacement
 - Gaseous Fumigation System
 - 4-cycle
- 3-way catalyst
- Optional fuel systems: NG and LP vapor dual fuel, LP Liquid Withdrawal single fuel, and NG and LP Liquid Withdrawal dual fuel
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
 - Integral set-mounted
 - Engine-driven fan
- Generator
 - Brushless, rotating field generator
 - 2/3 pitch windings
 - Permanent Magnet Generator (PMG) supply to regulator
 - 300% short circuit capability
- Digital control panel(s)
 - UL recognized, CSA certified, NFPA 110
 - Complete system metering
 - LCD display

Standard equipment *

Engine

- Air cleaners
- Oil pump
- Oil drain extension and shut-off valve with base connection
- Full flow oil filter
- Closed crankcase ventilation
- Jacket water pump
- Thermostats
- Blower fan and fan drive
- Radiator - unit mounted
- Electric starting motor - 24V
- Governor - electronic isochronous
- Base - formed steel
- SAE flywheel and bell housing
- Charging alternator - 24V
- Battery box and cables
- Base mounted fuel connection
- Flexible exhaust connection
- EPA certified engine
- Base connect oil drain

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
- Superior voltage waveform
- Digital, solid state, volts-per-hertz regulator
- 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
- $\pm 0.5\%$ voltage regulation no load to full load
- 100% of rated load - one step
- 5% maximum total harmonic distortion

Digital control panel(s)

- Digital metering
- Engine parameters
- Generator protection functions
- Engine protection
- SAE J1939 engine ECU communications
- Windows®-based software
- Multilingual capability
- Communications to remote annunciator
- Programmable input and output contacts
- UL recognized, CSA certified, CE approved
- Event recording
- IP 54 front panel rating with integrated gasket
- NFPA 110 compatible

Application data

Engine

Manufacturer	mtu
Model	12V1600L80S
Type	4-cycle
Aspiration	turbocharged, intercooled
Arrangement	12-V
Displacement: L (cu in)	21.0 (1,281)
Bore: cm (in)	12 (4.72)
Stroke: cm (in)	15 (5.91)
Compression ratio	11:1
Rated rpm	1,800
Engine governor	electronic isochronous PG Plus
Maximum power (NG): kWm (bhp)	565 (758)
Maximum power (LPG): kWm (bhp)	397 (532)
Steady state frequency band	± 0.5%
Air cleaner	dry

Liquid capacity

Total oil system: L (gal)	73 (19.3)
Engine jacket water capacity: L (gal)	65 (17.2)
System coolant capacity: L (gal)	156 (41.3)

Electrical

Electric volts DC	24
Cold cranking amps under -17.8 °C (0 °F)	1,050
Batteries: group size	4D
Batteries: quantity	2

Fuel inlet - vaporous supply (primary)

Fuel supply connection size	2-1/2" NPT
Fuel supply pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

Fuel inlet - vaporous supply (secondary)

Fuel supply connection size	2" NPT
Fuel supply pressure: mm H ₂ O (in. H ₂ O)	178-279 (7-11)

Fuel inlet - liquid supply

Fuel supply connection size	#8 (1/2") male JIC 37° flare
Maximum fuel supply pressure: kPa (PSI)	2,150 (312)

Fuel consumption (NG-1000 BTU/ft³ / LP-2500 BTU/ft³)

	NG	LPG
At 100% of power rating: m ³ /hr (ft ³ /hr)	155.9 (5,506)	46.8 (1,654)
At 75% of power rating: m ³ /hr (ft ³ /hr)	124.9 (4,412)	38 (1,341)
At 50% of power rating: m ³ /hr (ft ³ /hr)	92.8 (3,277)	28.7 (1,015)

Cooling - radiator system

	NG and LPG
Ambient capacity of radiator: °C (°F)	50 (122)
Maximum restriction of cooling air:	
intake and discharge side of radiator: kPa (in. H ₂ O)	0.20 (0.8)
Water pump capacity: L/min (gpm)	517 (137)
Heat rejection to coolant: kW (BTUM)	310 (17,625)
Heat rejection to after cooler: kW (BTUM)	145 (8,221)
Heat radiated to ambient: kW (BTUM)	46 (2,608)
Fan power: kW (hp)	29 (39)

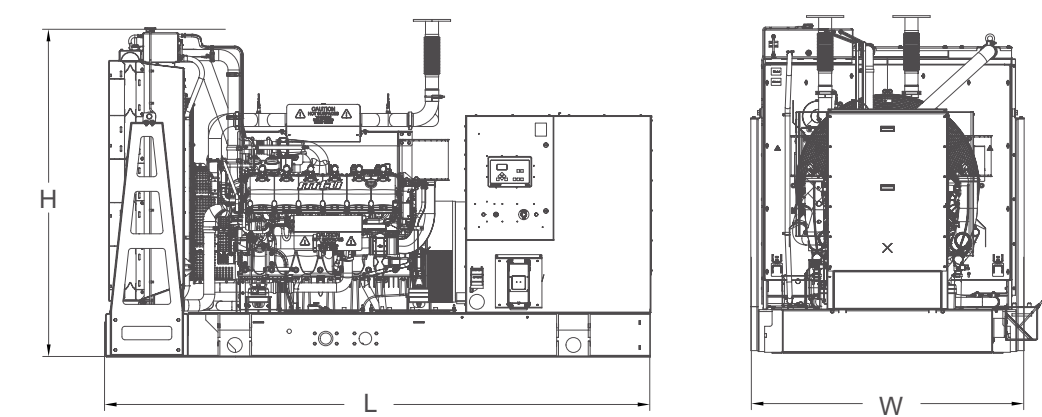
Air requirements

	NG and LPG
Aspirating: *m ³ /min (SCFM)	24.3 (860)
Air flow required for radiator cooled unit: *m ³ /min (SCFM)	960 (33,902)
Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: *m ³ /min (SCFM)	637 (22,645)

Exhaust system

	NG and LPG
Gas temperature (stack): °C (°F)	720 (1,328)
Gas volume at stack temperature: m ³ /min (CFM)	92.3 (3,260)
Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H ₂ O)	10 (40)

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	Dimensions (LxWxH)	Weight
Open Power Unit (OPU)	3,720 x 1,865 x 2,247 mm (146.5 x 73.5 x 88.5 in)	4,545-6,746kg (10,020-14,872 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	Standby full load (NG)	Standby full load (LP)
Level 0 (OPU): dB(A)	90.9	90.8

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

Emissions data

Refer to Emission Data Sheet (EDS) for emissions data. Consult your **mtu** Distributor for more information.

Rating definitions and conditions

- Ambient capability factor at 984 ft (300 m). Consult your local **mtu** Distributor for other altitudes.
- 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: ≤ 85%.
- Nominal ratings at standard conditions: 25 °C and 300 meters (77 °F and 1,000 feet).
- Deration factor:
 - Consult your local **mtu** Distributor for altitude derations.
 - Consult your local **mtu** Distributor for temperature derations.

The values provided in this specification sheet are typical and are intended for limited design reference only.