Gas Generator Set

MTU 6R0185 GS200

175 kWe/60 Hz/Prime/208 - 600V
Reference MTU 6R0185 GS200 (200 kWe) for Standby Rating Technical Data

System ratings

<table>
<thead>
<tr>
<th>Voltage (L-L)</th>
<th>240V †</th>
<th>240V †</th>
<th>208V †</th>
<th>240V †</th>
<th>480V †</th>
<th>600V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>PF</td>
<td>1</td>
<td>1</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>Hz</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Natural gas ratings: Amps</td>
<td>C/F</td>
<td>C/F</td>
<td>600</td>
<td>520</td>
<td>261</td>
<td>210</td>
</tr>
<tr>
<td>Natural gas ratings: kW/kVA</td>
<td>C/F</td>
<td>C/F</td>
<td>173/216</td>
<td>173/216</td>
<td>174/217</td>
<td>175/218</td>
</tr>
<tr>
<td>skVA@30% voltage dip</td>
<td>425</td>
<td>370</td>
<td>608</td>
<td>608</td>
<td>809</td>
<td>720</td>
</tr>
<tr>
<td>Generator model</td>
<td>433CSL6216</td>
<td>432PSL6228</td>
<td>432CSL6210</td>
<td>432CSL6210</td>
<td>432CSL6210</td>
<td>432PSL6246</td>
</tr>
<tr>
<td>Temp rise</td>
<td>105 °C/40 °C</td>
<td>105 °C/40 °C</td>
<td>105 °C/40 °C</td>
<td>105 °C/40 °C</td>
<td>105 °C/40 °C</td>
<td>105 °C/40 °C</td>
</tr>
<tr>
<td>Connection</td>
<td>12 LEAD DOUBLE DELTA</td>
<td>4 LEAD</td>
<td>12 LEAD LOW WYE</td>
<td>12 LEAD HI DELTA</td>
<td>12 LEAD HI WYE</td>
<td>4 LEAD WYE</td>
</tr>
</tbody>
</table>

† 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 - 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
Standard features*

- MTU is a single source supplier
- Global product support
- 2 year standard warranty
- 11.1L turbo engine charge air cooling
  - 11.1 liter displacement
  - 4-cycle
- 3-way catalyst
- Engine-generator resilient mounted
- Complete range of accessories
- Cooling system
  - Integral set-mounted
  - Engine-driven fan

Generator
- 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 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

Digital control panel(s)
- Generator
  - Brushless, rotating field generator
  - 2/3 pitch windings
  - 300% short circuit capability with optional Permanent Magnet Generator (PMG)
- Digital control panel(s)
  - UL recognized, CSA certified, NFPA 110
  - Complete system metering
  - LCD display

Standard equipment*

Engine
- Air cleaner
- Oil pump
- Oil drain extension and S/O valve
- Full flow oil filter
- 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
- Flexible fuel connectors
- Flexible exhaust connection
- EPA certified engine

Generator
- NEMA MGI, IEEE, and ANSI standards compliance for temperature rise and motor starting
- Self-ventilated and drip-proof
- Superior voltage waveform
- Solid state, volts-per-hertz regulator
- ±1% voltage regulation no load to full load
- Brushless alternator with brushless pilot exciter
- 4 pole, rotating field
- 105 ⁰C 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

* Represents standard product only. Consult the factory/MTU Distributor for additional configurations.
Application data

Engine
Manufacturer  PSI
Model  11.1L CAC
Type  4-cycle
Arrangement  6-inline
Displacement: L (in³)  11.1 (673)
Bore: cm (in)  12.3 (4.84)
Stroke: cm (in)  15.5 (6.1)
Compression ratio  10.5:1
Rated rpm  1,800
Engine governor  Bosch
Maximum power: kWm (bhp)  203 (272)
Speed regulation  ± 0.5%
Air cleaner

Fuel consumption (NG-1000 BTU/ft³)
At 100% of power rating: m³/hr (ft³/hr)  56.1 (1,980)
At 75% of power rating: m³/hr (ft³/hr)  42.5 (1,500)
At 50% of power rating: m³/hr (ft³/hr)  30.4 (1,075)

Liquid capacity (Lubrication)
Total oil system: L (gal)  28.5 (8)
Engine jacket water capacity: L (gal)  25 (5.5)
System coolant capacity: L (gal)  149 (32.8)

Electrical
Electric volts DC  24
Cold cranking amps under -17.8 °C (0 °F)  1,050

Fuel inlet
Fuel supply connection size  2" NPT
Fuel supply pressure: mm H₂O (in. H₂O)  178-279 (7-11)

Cooling - radiator system
Ambient capacity of radiator: °C (°F)  50 (122)*
Maximum restriction of cooling air: intake and discharge side of radiator: kPa (in. H₂O)  0.12 (0.5)
Water pump capacity: L/min (gpm)  310 (82)
Heat rejection to coolant: kW (BTUM)  194.6 (11,071)
Heat radiated to ambient: kW (BTUM)  40.4 (2,295)
Fan power: kW (hp)  10.4 (13.9)

* 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: *m³/min (SCFM)  11.7 (400)
Air flow required for radiator cooled unit: **m³/min (SCFM)  631 (22,300)
Remote cooled applications; air flow required for dissipation of radiated generator set heat for a maximum of 25 °F rise: *m³/min (SCFM)  237 (8,365)

* 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)  694 (1,281)
Gas volume at stack temp: m³/min (CFM)  38.8 (1,371)
Maximum allowable back pressure at outlet of engine, before piping: kPa (in. H₂O)  2.5 (10.25)
Weights and dimensions

<table>
<thead>
<tr>
<th>System</th>
<th>Dimensions (L x W x H)</th>
<th>Weight (dry)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open power unit (OPU)</td>
<td>3,607 x 1,591 x 2,026 mm (142 x 62.6 x 79.8 in)</td>
<td>3,096 kg (6,258 lb)</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Unit type</th>
<th>Prime full load (NG)</th>
<th>Prime full load (LP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 0: Open power unit: dB(A)</td>
<td></td>
<td>C/F</td>
</tr>
<tr>
<td>86.3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Emissions data

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>THC + NOx</th>
<th>CO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural gas</td>
<td>2.25</td>
<td>0.26</td>
</tr>
</tbody>
</table>

Rating definitions and conditions

- Ambient capability factor at 984 ft (300 m). Consult your local MTU 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.
- Consult your local MTU Distributor for derating information.

C/F = Consult Factory/MTU Distributor