Cat® XQ35 Rental Generator Set

Standby 30 kW, 38 kVA
Prime 27 kW, 35 kVA
60 Hz

Image shown may not reflect actual configuration

Specifications

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Voltage</th>
<th>Standby kW (kVA)</th>
<th>Prime kW (kVA)</th>
<th>Speed rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>60 Hz</td>
<td>480/277V</td>
<td>30 (38)</td>
<td>27 (35)</td>
<td>1800</td>
</tr>
<tr>
<td>60 Hz</td>
<td>208/120V</td>
<td>30 (38)</td>
<td>27 (35)</td>
<td>1800</td>
</tr>
<tr>
<td>60 Hz</td>
<td>240/120V</td>
<td>30 (30)</td>
<td>27 (27)</td>
<td>1800</td>
</tr>
</tbody>
</table>

Cat® C2.2 Diesel Engine

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Metric</th>
<th>Imperial (English)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Configuration</td>
<td>I-4, 4-Stroke Diesel</td>
<td></td>
</tr>
<tr>
<td>Bore</td>
<td>84 mm</td>
<td>3.3 in</td>
</tr>
<tr>
<td>Stroke</td>
<td>100 mm</td>
<td>3.9 in</td>
</tr>
<tr>
<td>Displacement</td>
<td>2.2 L</td>
<td>135 in³</td>
</tr>
<tr>
<td>Aspiration</td>
<td>ATAAC</td>
<td></td>
</tr>
<tr>
<td>Compression Ratio</td>
<td>18:1</td>
<td></td>
</tr>
<tr>
<td>Engine Speed</td>
<td>1800 rpm</td>
<td></td>
</tr>
<tr>
<td>Governor Type</td>
<td>Electronic</td>
<td></td>
</tr>
<tr>
<td>Governor Class</td>
<td>ISO8528 G1 and G2</td>
<td></td>
</tr>
<tr>
<td>Maximum power at rated speed – bkW (hp)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standby</td>
<td>36.4</td>
<td>(49)</td>
</tr>
<tr>
<td>Prime</td>
<td>32.8</td>
<td>(44)</td>
</tr>
</tbody>
</table>
Benefits & Features

Fuel/Emissions Strategy
- Meets U.S. EPA Tier 4 Final emission standards and CARB certified for non-road mobile applications at all 60 Hz ratings

Cat C2.2T Diesel Engine
- Four-stroke diesel engine combines performance and excellent fuel economy with minimum weight
- On-engine aftertreatment consists of NOx Reduction System (NRS) and Diesel Oxidation Catalyst (DOC) for service-free operation
- 500-hour oil change interval
- Common rail direct injection
- Electronic engine controls
- Engine block heater 110-120 VAC

Cat LC Series Generator
- Matched to the performance and output characteristics of Cat diesel engines
- Class H Insulation

Cat EMCP 4.2B Control Panel
- Electronic control panel provides power metering, protective relaying, engine and generator parameter viewing, and expanded AC metering.
- Graphical display (3.8 in.) denotes text alarm/event descriptions, set points, engine and generator monitoring, and is visible in all lighting conditions.
- Simple, user-friendly interface and navigation
- Integrates with the Cat Integrated Voltage Regulator (IVR) to provide precise control, excellent block loading, and constant voltage

Environmentally Friendly Design
- 110% spill containment of all engine fluids
- Nonmetallic fuel tank provides >24-hour run time at 75% prime load
- Two-way valve and external fuel ports to easily switch between on-board and external fuel source
- Two-speed, electric cooling fans for reduced fuel consumption and reduced sound (63 dBA at 7 m)
- Solar battery maintainer

Sound-attenuated Enclosure
- Rugged, corrosion-resistant construction:
  - Galvanealed, sheet steel body panels with zinc phosphate pretreatment prior to polyester powder coating
  - Die-cast aluminum hinges with SST pins
- Excellent access for service and maintenance:
  - Two doors on each side, and one rear door for power distribution and control panel access
  - Lift-off door hinges for easy door removal
  - Lube oil and coolant drains piped to exterior of the enclosure
- Security and safety features:
  - Control panel located behind rear access door with safety-glass viewing window
  - Padlockable latches on all access doors
  - Exterior emergency stop (E-stop) button

Controls and Power Distribution
- Three-position switch for easy selection of desired output (480/277V 3-phase, 208/120V 3-phase, or 240/120V single phase)
- Controls, sockets, and power distribution all accessible via rear access door
- Hinged door over main bus bars with safety switch to trip breaker

Asset Monitoring and Management (Available 3Q2016)
- Product Link™ Generation (PLG) hardware provides two-way communication for remote control and equipment monitoring via cellular network
- Customer-defined, equipment-based real-time status updates and alerts
- Flexible and customer-configurable user interface
- GPS provides asset location and geo-fencing

Options
- Generator anti-condensation heater
- Battery charger
- Trailer (electric, hydraulic, or no brakes)
- Trailer hitch (2-in. ball, 2-5/16-in. ball, or pintle)
- 600V generator (available 3Q2016)
Standard Equipment

Engine
- Cat C2.2T, heavy-duty, EPA Tier 4 Final certified diesel engine
- NOx and engine-mounted DOC
- Block heater, 110-120 VAC
- Requires Ultra Low Sulfur Diesel (ULSD) fuel
- Engine Electrical System:
  - 12-volt, DC electrical system
  - 85-amp, DC charging alternator
  - Electronic governor and engine controls
  - Oil pressure, coolant temperature, and coolant level shutdown switches
- Engine Filtration System:
  - Cartridge-type air filter with service indicator
  - Cartridge-type fuel filter with upstream pre-filter and water separator,
  - Spin-on, full-flow lube oil filter, requires API CJ-4 lube oil.

Generator and Voltage Regulation
- Screen protected and drip-proof (IP23), self-regulating, 12-lead, 4-pole, brushless generator
- Sealed-for-life bearing
- Electrical design in accordance with IEC60034-1, EN61000-6, NEMA MG-1.22, and CSA
- Self-excited for self protection against short circuits
- Voltage selection switch (3 position) mounted to generator terminal box
- Optional
  - Anti-condensation, space heater, 60-Watt, 110-120 VAC
- Insulation System:
  - Class H insulation system
  - Windings are impregnated in a thermo-setting moisture, oil, and acid resisting varnish
  - Heavy coat of anti-tracking varnish for additional protection against moisture or condensation
- IVR:
  - Simplified operation and troubleshooting
  - Removes duplication of set points
  - Configure IVR parameters and view IVR status screens via the EMCP
  - Fully supported by Cat ET service tool
- Waveform distortion, THF, and TIF Factors:
  - Total distortion of voltage waveform with open circuit between phases, or phase and neutral, on the order of 1.8 Total distortion <4%, on a 3-phase, balanced, harmonic-free load
  - Total distortion <2%, under no load
  - Waveform: NEMA (TIF <50)
  - 2/3 pitch standard on all stator windings

Generator Set Packaging
- Base frame and containment tray
  - Heavy-duty, fabricated steel base frame with specially-designed lifting points
  - Spill containment tray mounted to base frame, with leak-detection switch
- Canopy
  - Sound attenuated to 63 dBA at 7 m (23 ft)
  - Two doors on each side, and one rear door for power distribution and control panel access
  - Die-cast aluminum lift-off hinges with SST pins
- Cooling System:
  - Radiator and two-speed, electric cooling fans (2) complete with protective guards
  - Cooling system provides 43°C (109°F) ambient capability at 500 m (2,460 ft) above sea level
- Electrical System:
  - 12-volt, DC electrical system
  - 880CCA, maintenance-free, wet battery
  - Battery disconnect switch, lockable
  - Solar battery maintainer with solar array
  - Resettable, switch-style circuit breakers (DC circuit)
  - Optional 10A battery charger, 110-120 VAC constant voltage, UL listed
- Engine and generator mounting
  - Engine and generator are directly coupled by an SAE flange
  - Engine flywheel is flexibly coupled to the generator rotor, with full torsional analysis completed to ensure no harmful vibration will occur in the assembly
  - Anti-vibration pads between engine/generator feet and base frame
Standard Equipment (continued)

• Fuel System:
  – Cross-linked polyethylene (XLPE) fuel tank; 55 gallon usable volume
  – 24 hour runtime @ 100% prime load
  – 2-position valves and external ports (1/4-in. NPT) allow connection of an auxiliary fuel source

Generator Controls and Power Distribution

• EMCP 4.2B, digital generator set controller, mounted behind a hinged, lockable door with viewing window
• Circuit Breaker: 3-pole molded case breaker with neutral (4-wire), 125A, UL- and CSA-listed with shunt trip
• Safety switch on hinged main bus cover – trips breaker if cover is opened
• Two-wire, remote start-stop terminals
• Customer auxiliary power connections:
  – Two – 250V, 50A California-style, NEMA, twist lock receptacles
  – Two – 120V, 20A duplex receptacles with GFCI*
  – Each receptacle is protected by a miniature circuit breaker, which also acts as an on/off switch
• Main customer connections:
  – Tin-plated copper bus bars with phase separators, located behind a protective door with shunt trip switch
  – Bus bars sized for full load capacity of generator set at 0.8 power factor

Quality and Product Support

• Factory load-testing of complete generator set
• Factory test certificate available upon request
• Equipment meets the following standards: BS4999, BS5000, BS5514, IEC60034, EN61000-6, NEMA MG-1.22 & CSA
• Full set of operation and maintenance manuals

*Voltage at receptacle is 120V when switch is in 240/120 and 208 positions, and 139V in 480V position
## Cat Generator Set – 1800 rpm/60 Hz

<table>
<thead>
<tr>
<th>Cat Generator</th>
<th>Units</th>
<th>Standby</th>
<th>Prime</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power Rating</strong></td>
<td>kW (kVA)</td>
<td>30 (37.5)</td>
<td>27 (35)</td>
</tr>
<tr>
<td><strong>Performance Specification</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lubricating System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total oil</td>
<td>L (gal)</td>
<td>10.6 (2.8)</td>
<td>10.6 (2.8)</td>
</tr>
<tr>
<td>Capacity oil</td>
<td>L (gal)</td>
<td>8.9 (2.4)</td>
<td>8.9 (2.4)</td>
</tr>
<tr>
<td><strong>Fuel System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Consumption** — 100% Load</td>
<td>L/hr (gal/hr)</td>
<td>9.8 (2.6)</td>
<td>8.8 (2.3)</td>
</tr>
<tr>
<td>75% Load</td>
<td>L/hr (gal/hr)</td>
<td>7.4 (2.0)</td>
<td>6.7 (1.8)</td>
</tr>
<tr>
<td>50% Load</td>
<td>L/hr (gal/hr)</td>
<td>4.9 (1.3)</td>
<td>4.4 (1.2)</td>
</tr>
<tr>
<td>Fuel Tank Capacity</td>
<td>L (gal)</td>
<td>208 (55)</td>
<td>208 (55)</td>
</tr>
<tr>
<td><strong>Running Time</strong> — at 100% Load</td>
<td>Hours</td>
<td>&gt;20</td>
<td>&gt;24</td>
</tr>
<tr>
<td><strong>Cooling System</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radiator system capacity including engine</td>
<td>L (U.S. gal)</td>
<td>9.9 (2.6)</td>
<td>9.9 (2.6)</td>
</tr>
<tr>
<td>Heat rejected to coolant at rated power</td>
<td>kW (Btu/min)</td>
<td>29.6 (1,685)</td>
<td>26.6 (1,514)</td>
</tr>
<tr>
<td><strong>Air Requirements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combustion air flow</td>
<td>m³/min (cfm)</td>
<td>2.2 (76)</td>
<td>2.2 (76)</td>
</tr>
<tr>
<td>Radiator cooling air</td>
<td>m³/min (cfm)</td>
<td>86.5 (3,023)</td>
<td>86.5 (3,023)</td>
</tr>
<tr>
<td>Generator cooling air</td>
<td>m³/min (cfm)</td>
<td>19.2 (678)</td>
<td>19.2 (678)</td>
</tr>
<tr>
<td><strong>Noise Rating</strong>**</td>
<td>dB(A)</td>
<td>63</td>
<td>63</td>
</tr>
</tbody>
</table>

**Package fuel consumption and sound levels are for reference only.**
Cat® XQ35 Rental Generator Set

Technical Data (continued)

<table>
<thead>
<tr>
<th>Model</th>
<th>Length mm (in)</th>
<th>Width mm (in)</th>
<th>Height mm (in)</th>
<th>With Lube Oil &amp; Coolant kg (lb)</th>
<th>With Fuel, Lube Oil, &amp; Coolant kg (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XQ35</td>
<td>2318 (91.3)</td>
<td>1050 (41.4)</td>
<td>1617 (63.7)</td>
<td>1003 (2215)</td>
<td>1178 (2600)</td>
</tr>
<tr>
<td>XQ35 with trailer (no brakes)</td>
<td>3454 (136.0)</td>
<td>1687 (66.4)</td>
<td>1883 (74.1)</td>
<td>1154 (2555)</td>
<td>1332 (2940)</td>
</tr>
<tr>
<td>XQ35 with trailer (electric brakes)</td>
<td>3454 (136.0)</td>
<td>1687 (66.4)</td>
<td>1883 (74.1)</td>
<td>1166 (2575)</td>
<td>1341 (2960)</td>
</tr>
<tr>
<td>XQ35 with trailer (hydraulic brakes)</td>
<td>3534 (139.1)</td>
<td>1687 (66.4)</td>
<td>1883 (74.1)</td>
<td>1171 (2585)</td>
<td>1345 (2970)</td>
</tr>
</tbody>
</table>

General Layout Dimensions

Dimensions in millimeters (inches).
Shown with optional trailer.
Control Panel and Power Distribution Layout

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Steel enclosure with hinged, lockable door (not shown)</td>
</tr>
<tr>
<td>2</td>
<td>Circuit breakers for receptacles</td>
</tr>
<tr>
<td>3</td>
<td>Emergency stop</td>
</tr>
<tr>
<td>4</td>
<td>Single-phase GFCI duplex receptacles (20A @ 120V)</td>
</tr>
<tr>
<td>5</td>
<td>Two-wire remote start terminals</td>
</tr>
<tr>
<td>6</td>
<td>Single-phase, California-style, twist-lock receptacles, 50A @ 208V phase-to-phase, 120V phase to neutral, or 240/120 single phase when in that voltage position</td>
</tr>
<tr>
<td>7</td>
<td>Single-phase NEMA locking input receptacle (30A @ 120V) to power block heater, battery charger, and generator space heater</td>
</tr>
<tr>
<td>8</td>
<td>Glow plug lamp</td>
</tr>
<tr>
<td>9</td>
<td>EMCP 4.2B digital generator set controller</td>
</tr>
<tr>
<td>10</td>
<td>Cat ET service tool connector</td>
</tr>
<tr>
<td>11</td>
<td>Circuit breaker, 3-pole molded case, 125A</td>
</tr>
<tr>
<td>12</td>
<td>Main bus connection (bus bars with 13 mm holes) behind hinged cover with safety switch</td>
</tr>
</tbody>
</table>

Rating Definitions and Conditions

**Standby** — Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

**Prime** — Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.