# XQ1475G RENTAL

## CONTINUOUS 1475 kW

### 50/60 Hz Switchable

| Frequency (Hz) | Voltage (V) | Continuous kW (kVA) |
|---|---|---|
| 50 Hz | 400/230V | 1475 (1844) |
| 60 Hz | 480/240V | 1475 (1844) |

## FEATURES

### FUEL/EMISSIONS STRATEGY

- Meets most worldwide emissions requirements down to 500 mg/Nm$^3$ $NO_x$ level without after treatment (contact factory for applications requiring 0.5g/hp-hr performance)

### SINGLE-SOURCE SUPPLIER

- Generator set manufactured in ISO 9001:2000 compliant facility
- Package factory designed and production tested
- Generator set and components meet or exceed the following specifications:AS1359, AS2789, BS4999, DIN6271,DIN6280, EGSA101P, JEM1359,IEC 34/1, ISO3046/1, ISO8528, NEMA MG1-22

### WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sale support including maintenance and repair agreements
- Supported 100% by the Cat dealer with warranty on parts and labor

### . CAT G3516C ISLAND MODE GAS ENGINE

- Compact, four-stroke-cycle gas engine provides exceptional dependability, fuel economy and power density
- Robust kilowatt based air to fuel ratio control system yields enhanced system performance
- Designed for maximum performance on low pressure pipeline natural gas of 3-7 psi (0.21 kg/cm² - 0.49 kg/cm²) to the container with a methane number range of 55-100 (contact factory for methane numbers <55)
- Island mode feature improves engine's capability to handle electrical loading and unloading

### REDUCED ENVIRONMENTAL IMPACT

- 110% spill containment of onboard engine fluids
- Positive crankcase fumes ventilation

### COOLING SYSTEM

- Horizontally mounted radiator with vertical discharge
- Sized compatible to rating with energy efficient electric drive fan and core.
- Provides 40C (104F) ambient capability with 500 mg/Nm$^3$ NOx (1g/hp-hr) at 100% continuous rating before derate
- Variable frequency drive fan controls improve partial load fuel consumption

### CAT GENERATOR

- Cat SR4B 826 frame generator designed to match the performance and output characteristics of the Cat gas engine
- Double bearing, wye-connected, static regulated, brushless, permanent magnet excited

### ON PACKAGE CONTROL PANEL SYSTEM

- Provides auto paralleling using package mounted controls
- EMCP 4.2 offers engine and generator monitoring and protection
- PL1000E Controller
- Engine Advisor Panel
- AGC-4 provides paralleling, load sharing, VFD control, and primary generator protection
- Intertie protection provided via utility grade Basler BE1-11i utility multi-function relay (UMR)

### DIGITAL VOLTAGE REGULATOR (CAT DVR)

- Three-phase sensing with adjustable volts-per-hertz regulation
- Provides precise control and constant voltage in the normal operating range.

### SOUND ATTENUATED CONTAINER

- Provides 9-high stack CSC rated enclosure for ease of transportation and protection.
- Meets 72 dB(A) at 15 meters or below per SAE J1074 measurement procedure at continuous rating

# XQ1475G RENTAL

## FACTORY INSTALLED STANDARD EQUIPMENT

| SYSTEM | STANDARD EQUIPMENT |
|---|---|
| **Engine** | Cat G3516C Island Mode Gas Engine (Operates on 31.5 to 47.2 MJ/Nm$^3$ (800 to 1200 btu/ft$^3$) dry pipeline natural gas)<br>Cat Engine Advisor Panel provides engine diagnostics and full text descriptions<br>Cat Gas Engine Control Module (Cat GECM) includes electronic speed governor with hydrax actuator and provides transient richening and turbo bypass control<br>Electronic Ignition System (controlled by ECM)<br>Individual cylinder Detonation Sensitive Timing (DST)<br>Engine installed electronic fuel metering valve<br>Hydraulic actuated throttle plate electronically controlled by ECM<br>Heavy duty, single element canister type air cleaner with service indicator<br>Charging Alternator, 60-Amp<br>Dual 24V electric starting motors<br>Integral lube oil cooler, lube oil pump, oil filter, filler, and dipstick and oil drain lines routed to engine rail<br>Prelube Pump, 24VDC continuous type<br>Jacket Water Heater, 9kW, 400/480V, 50/60 Hz, 3-phase with isolation valves |
| **Generator** | Double bearing SR-4B brushless, form wound, permanent magnet excited, three-phase with Cat digital voltage regulator (Cat DVR), space heater, 6-lead design, Class H insulation operating at Class F temperature for extended life, winding temperature detectors and anti-condensation space heaters (120/240V 1.2 kW).<br>Generator equipped with System 4 insulation protection. |
| **Containerized Module** | 40' ISO high cube container, 9-high stack CSC certified<br>Four (4) sound attenuated air intake louvers and 3 lockable personnel doors with panic release<br>Interior walls and ceilings insulated with 100 mm of acoustic paneling<br>Floor of container is undercoated for corrosion protection<br>Side bus bar access door, external access load connection bus bars<br>Shore power connection via distribution block connections for jacket water heater, battery charger, generator space heaters, and generator condensate heaters<br>Six (6) DC lights<br>3” ANSI flange customer fuel connection with cover to prevent vandalism<br>Energized-to-run (ETR) shutoff valve (double solenoid, low/high pressure switch, CSA/FM approved)<br>Cat Brand fuel filter, wall mounted and gas pressure regulator<br>Lube oil level regulator with makeup tank<br>Sound attenuated 72 dB(A) @ 15 m (50 ft)<br>Four (4) oversized maintenance-free batteries, battery rack and 20-Amp battery charger<br>Critical grade exhaust silencer with vertical discharge and single 2 m (6.5 ft.) stack<br>Vibration isolators, stainless steel fastening hardware and hinges<br>External drain access to standard fluids<br>One 4.5 kg (10 lb) carbon dioxide fire extinguisher<br>Standard Cat rental decals and painted standard Cat power module white<br>LH and RH engine service panels integrated into container side walls<br>110% spill containment system for on-board engine fluids |
| **Cooling** | Standard cooling provides 40C (104F) ambient capability with 500mg/Nm$^3$ NOx at 100% Continuous<br>Horizontally mounted radiator with vertical air discharge<br>Variable frequency drive (VFD) for optimal partial load fuel consumption |
| **Generator Controls and Protection** | Controls provide auto paralleling AGC-4 controller, CAN-bus, ethernet comm, PWM and analog outputs, legacy analog load sharing; includes PL1000E gas engine Advisor panel for operational/diagnostic information; cabinet houses shore power transformer, distribution, protection, and internal/external power selector switch<br>EMCP 4.2 genset mounted controller<br>Automatic start/stop with cool down timer<br>Generator Protection features: 25, 32, 40, 46, 47, 50/51, 27/59, 81 O/U<br>Reverse compatibility for interface to legacy power modules<br>3200A IEC rated generator circuit breaker with LSIG trip unit w/ammeter<br>Multi-mode operation (island, multi-island and utility parallel), load sharing (multi-unit only)<br>Manual and automatic paralleling capability<br>Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope<br>Basler BE1-11i is IEEE1547-2003 compliant in most applications |
| **Quality** | Factory testing of standard generator set and complete power module<br>UL, NEMA, ISO and IEEE standards<br>Full package CE certification available<br>O&M manuals |

# XQ1475G RENTAL

## SPECIFICATIONS

### GENERATOR

Frame Size . . . . . 826
Pitch . . . . . 0.6667
No. of poles . . . . . 4
Excitation . . . . . Static regulated brushless PM excited
Constructions . . . . . Double bearing, close coupled
Insulation. . . . . Class H
Enclosure . . . . . Drip proof IP22
Temperature rise . . . . . 105 deg C
Alignment. . . . . Pilot shaft
Overspeed capability – % of rated . . . . . 125% of rated
Voltage regulator . . . . . 3 phase sensing with Volts-per-Hertz
Voltage regulation. . . . . Less than ± 0.5% voltage gain
Adjustable to compensate for engine speed droop and line loss
Wave form deviation . . . . . Less than 3% deviation
Telephone Influence Factor (TIF). . . . . Less than 50
Harmonic Distortion (THD). . . . . Less than 5%

### CAT G3516C LOW EMISSIONS GAS ENGINE

Number of Cylinders. . . . . V16
Bore – mm (in). . . . . 170 (6.7)
Stroke – mm (in) . . . . . 190 (7.5)
Displacement – L (cu in) . . . . . 69 (4,210)
Compression ratio. . . . . 11.3:1
Engine Speed (rpm). . . . . 1500/1800
Aspiration. . . . . Turbocharged Separate Circuit Aftercooled
Aftercooler Inlet (deg C) . . . . . 92
Jacket Water Outlet (deg C). . . . . 98
Exhaust Manifold . . . . . Dry
Fuel system . . . . . Cat Low Pressure w/ Air Fuel Ratio Control
Governor type . . . . . ADEM™ A3 Control System
Combustion . . . . . Low Emission
Fuel . . . . . Natural Gas
Fuel Pressure Range (PSI) . . . . . 3-7
Methane Number . . . . . 55-100

## TECHNICAL DATA*

| Generator Set Technical Data | Units | 50 Hz Continuous* | | 60 Hz Continuous* | |
|---|---|---|---|---|---|
| **Power Rating** | ekW | 1475 | | | |
| **Lubrication System** Lube Oil Refill Volume with filter change for standard sump | L (gal) | 416 (110) | | | |
| **Fuel System** | | | | | |
| Fuel Consumption (ISO 3046/1) | | Max VFD (50kW) | Min VFD (3kW) | Max VFD (50kW) | Min VFD (3kW) |
| 100% load | MJ/ekW-hr | 9.62 | 9.35 | 10.34 | 10.05 |
| 75% load | MJ/ekW-hr | 9.92 | 9.57 | 10.74 | 10.39 |
| 50% load | MJ/ekW-hr | 10.59 | 9.97 | 11.86 | 11.14 |
| **Altitude Capability** | | | | | |
| At 25° C (77°) ambient, above sea level | m (ft) | 1500 (4921) | | | |
| **Cooling System** | | | | | |
| Package ambient capability | ° C (° F) | 40 (104) | | 40 (104) | |
| Jacket water temperature (maximum outlet) | ° C (° F) | 99 (210) | | 99 (210) | |
| System coolant capacity | L (gal) | 770 (203) | | 770 (203) | |
| System required airflow | $m^3$/min ($ft^3$/min) | 2,604 (91,959) | | | |
| **Exhaust System** | | | | | |
| Combustion air inlet flow rate | $m^3$/min ($ft^3$/min) | 116 (4,097) | | 111 (3,920) | |
| Exhaust stack gas temperature | ° C (° F) | 467 (877) | | 492 (918) | |
| Exhaust gas flow rate | $Nm^3$/min | 113 | | 118 | |
| **Sound Performance** | | | | | |
| Noise rating @ 15 m (per SAE J1074) | dB(a) | 72 | | | |
| **Emissions at 100% Load** | | | | | |
| $No_x$ (as $NO_2$)(corr. 5% $O_2$) | mg/$Nm^3$ (dry) | 500 | | 453 | |
| CO (corr. 5% $O_2$) | mg/$Nm^3$ (dry) | 906 | | 937 | |
| THC (corr. 5% $O_2$) | mg/$Nm^3$ (dry) | 2584 | | 1521 | |
| NMHC (corr. To 5% $O_2$) | mg/$Nm^3$ (dry) | 388 | | 228 | |
| Exhaust $O_2$ | % (dry) | 9.9 | | 9.3 | |

** Materials and specifications are subject to change without notice. Reference SRR GR-3500-158-02 For Max VFD Power and SRR GR-3500-157-02 for Min VFD Power Data at 50 Hz. Reference SRR GR-3500-136-00 For Max VFD Power and SRR GR-3500-137-00 for Min VFD Power Data at 60 Hz. 60 Hz emissions data pending factory testing results.*

## METHANE NUMBER OPERATION GUIDELINES**

***This table shows the derate factor required for a given fuel. Note that deration occurs as the methane number decreases. Methane number is a scale to measure detonation characteristics of various fuels. The methane number of a fuel is determined by using the Cat Methane Number Calculation program. Contact factory for operation with methane numbers below 55.*

| Fuel Usage Guidelines | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cat Methane Number | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 | 80 | 85 to 100 |
| Ignition Timing | Contact Factory | Contact Factory | Contact Factory | Contact Factory | Contact Factory | 24 | 24 | 25 | 27 | 27 | 28 | 28 |
| Deration Factor | Contact Factory | Contact Factory | Contact Factory | Contact Factory | Contact Factory | 0.90 | 0.91 | 0.93 | 1.00 | 1.00 | 1.00 | 1.00 |

| Altitude | | XQ1475G 1500rpm (50 Hz) Altitude / Ambient Derate Chart<br>Switchable Cams & High Ambient Air Intake System | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meters | Feet | | | | | | | | | | | | | | | | | | |
| 2,400 | 7,874 | 84.9% | 66.3% | 62.0% | 61.2% | 59.5% | 57.9% | 56.3% | 54.7% | 53.0% | 42.4% | 31.8% | 21.2% | 10.6% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 2,250 | 7,382 | 88.0% | 71.6% | 66.7% | 65.8% | 64.1% | 62.5% | 60.9% | 59.2% | 57.6% | 46.1% | 34.6% | 23.0% | 11.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 2,000 | 6,562 | 92.0% | 79.3% | 75.3% | 74.4% | 72.6% | 70.8% | 68.9% | 67.1% | 65.3% | 52.2% | 39.2% | 26.1% | 13.1% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| 1,750 | 5,741 | 97.1% | 85.9% | 82.7% | 82.1% | 80.0% | 78.0% | 76.0% | 73.9% | 71.9% | 68.8% | 65.8% | 62.7% | 59.7% | 56.6% | 45.3% | 34.0% | 22.6% | 11.3% | 0.0% |
| 1,500 | 4,921 | 100.0% | 92.7% | 89.8% | 89.2% | 87.3% | 85.3% | 83.4% | 81.5% | 79.5% | 76.5% | 73.4% | 70.4% | 67.3% | 64.2% | 56.6% | 48.9% | 41.3% | 33.6% | 26.0% |
| 1,250 | 4,101 | 100.0% | 99.1% | 96.8% | 96.4% | 94.5% | 92.7% | 90.9% | 89.0% | 87.2% | 84.3% | 81.4% | 78.5% | 75.6% | 72.7% | 69.3% | 65.9% | 62.6% | 59.2% | 55.8% |
| 1,000 | 3,281 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.2% | 97.8% | 96.5% | 95.1% | 92.0% | 89.0% | 85.9% | 82.8% | 79.8% | 76.3% | 72.8% | 69.4% | 65.9% | 62.4% |
| 900 | 2,953 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.5% | 98.7% | 97.9% | 94.8% | 91.8% | 88.7% | 85.7% | 82.6% | 79.1% | 75.7% | 72.2% | 68.7% | 65.3% |
| 800 | 2,625 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 97.9% | 94.8% | 91.8% | 88.7% | 85.7% | 82.2% | 78.7% | 75.3% | 71.8% | 68.3% |
| 700 | 2,297 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 98.9% | 96.4% | 93.8% | 91.3% | 88.7% | 85.1% | 81.6% | 78.0% | 74.4% | 70.9% |
| 600 | 1,969 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.9% | 97.9% | 95.8% | 93.8% | 91.8% | 88.1% | 84.4% | 80.8% | 77.1% | 73.4% |
| 500 | 1,640 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 98.9% | 97.4% | 95.8% | 94.3% | 90.9% | 87.4% | 83.9% | 80.5% | 77.0% |
| 400 | 1,312 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.9% | 98.9% | 97.9% | 96.9% | 93.6% | 90.3% | 87.1% | 83.8% | 80.6% |
| 300 | 984 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.9% | 99.4% | 96.8% | 94.1% | 91.5% | 88.8% | 86.2% |
| 200 | 656 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 97.9% | 95.8% | 93.8% | 91.8% |
| 100 | 328 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 98.3% | 97.6% | 97.0% | 96.3% |
| 0 | 0 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 98.3% | 97.6% | 97.0% | 96.3% |
| Ambient (C) | | 20 | 25 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |

*Chart applicable to 1g/bhp-hr operation only.*
*For derates less than 50%, refer to partial load operation section in OMM.*

| Altitude | | XQ1475G 1800rpm (60 Hz) Altitude / Ambient Derate Chart<br>Switchable Cams & High Ambient Air Intake System | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Meters | Feet | | | | | | | | | | | | | | | | | | |
| 2,400 | 7,874 | 84.9% | 80.7% | 76.8% | 76.0% | 74.0% | 72.1% | 70.1% | 68.1% | 66.1% | 56.8% | 47.4% | 38.0% | 28.7% | 19.3% | 14.8% | 10.2% | 5.7% | 1.1% | 0.0% |
| 2,250 | 7,382 | 88.0% | 83.8% | 80.5% | 79.8% | 77.7% | 75.6% | 73.5% | 71.4% | 69.3% | 66.1% | 63.0% | 59.8% | 56.6% | 53.5% | 42.1% | 30.7% | 19.3% | 7.9% | 0.0% |
| 2,000 | 6,562 | 92.0% | 89.7% | 86.8% | 86.2% | 84.0% | 81.9% | 79.8% | 77.7% | 75.6% | 72.4% | 69.3% | 66.1% | 63.0% | 59.8% | 47.1% | 34.5% | 21.8% | 9.2% | 0.0% |
| 1,750 | 5,741 | 97.1% | 95.0% | 92.1% | 91.4% | 89.5% | 87.6% | 85.7% | 83.8% | 81.9% | 78.8% | 75.6% | 72.4% | 69.3% | 66.1% | 63.0% | 59.8% | 56.6% | 53.5% | 50.3% |
| 1,500 | 4,921 | 100.0% | 100.0% | 98.2% | 97.7% | 95.9% | 94.0% | 92.1% | 90.2% | 88.3% | 85.3% | 82.4% | 79.4% | 76.5% | 73.5% | 69.9% | 66.3% | 62.7% | 59.2% | 55.6% |
| 1,250 | 4,101 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.0% | 97.5% | 96.1% | 94.6% | 91.4% | 88.3% | 85.1% | 81.9% | 78.8% | 75.2% | 71.6% | 68.0% | 64.4% | 60.9% |
| 1,000 | 3,281 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 97.7% | 94.6% | 91.4% | 88.3% | 85.1% | 81.5% | 77.9% | 74.3% | 70.8% | 67.2% |
| 900 | 2,953 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 98.6% | 95.9% | 93.1% | 90.4% | 87.6% | 84.0% | 80.3% | 76.6% | 73.0% | 69.3% |
| 800 | 2,625 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.4% | 97.1% | 94.8% | 92.5% | 90.2% | 86.4% | 82.7% | 78.9% | 75.1% | 71.4% |
| 700 | 2,297 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 98.2% | 96.3% | 94.4% | 92.5% | 88.8% | 85.1% | 81.3% | 77.6% | 73.9% |
| 600 | 1,969 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.0% | 97.5% | 96.1% | 94.6% | 91.0% | 87.5% | 84.0% | 80.4% | 76.9% |
| 500 | 1,640 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.9% | 98.8% | 97.7% | 96.7% | 93.3% | 89.9% | 86.6% | 83.2% | 79.8% |
| 400 | 1,312 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.4% | 98.8% | 95.9% | 93.1% | 90.2% | 87.3% | 84.5% |
| 300 | 984 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 98.6% | 96.2% | 93.8% | 91.5% | 89.1% |
| 200 | 656 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 98.3% | 96.9% | 95.2% | 93.5% |
| 100 | 328 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 98.3% | 97.6% | 97.0% | 96.3% |
| 0 | 0 | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 99.6% | 99.0% | 98.3% | 97.6% | 97.0% | 96.3% |
| Ambient (C) | | 20 | 25 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 |

*Chart applicable to 1g/bhp-hr operation only.*
*For derates less than 50%, refer to partial load operation section in OMM.*

## OVERALL PACKAGE DERATE GUIDANCE:

To determine the actual package rating at site conditions, one must consider, separately, limitations due to fuel characteristics and air system limitations. The Fuel Usage Guide deration establishes fuel limitations while the Altitude/Temperature deration factors and RPC (reference the Cat Methane Program) establish air system limitations. RPC is considered when the Altitude/Temperature deration is less than 1.0 (100%). Under this condition, add the two factors together. When the site conditions do not require an Altitude/Temperature derate (factor is 1.0), it is assumed the turbocharger has sufficient capability to overcome the low fuel relative power and RPC is ignored.

To determine the actual power available, take the lowest rating between 1) and 2) below:

1) Fuel Usage Guide Deration
2) 1-((1-Altitude/Temperature Deration) + (1-RPC))

## STANDARD FEATURES

**EMCP 4.2 LOCAL CONTROL PANEL**

- Generator mounted EMCP 4.2 provides power metering, protective relaying and engine and generator control and monitoring.
- Convenient service access for Cat service tools (not included).
- Integration with the Cat DVR provides enhanced system monitoring.
- Ability to view and reset diagnostics of all controls networked on J1939 datalink eliminates need for separate service tools for troubleshooting.
- Real-time clock allows for date and time-stamping of diagnostics and events.
- True RMS AC metering, 3 phase: L-L volts, L-N volts, Phase, Amps, Hz, ekW, kVA, kVAR, kWHr, % kW, PF

**EMCP 4.2 ENGINE OPERATOR INTERFACE**

- Graphical display with positive image, transflective LCD, adjustable white backlight/contrast.
- Digital indication for
  - RPM
  - DC Volts
  - Operating hours
  - Oil pressure
  - Coolant Temperature
  - Oil Temperature
- Two LED status indicators (1 red, 1 amber)
- Engine cool-down timer
- Engine cycle crank
- Three engine control keys and status indicators (Run/Auto/Stop).
- Lamp test and Alarm acknowledgement keys
- Warnings/shutdowns with indicating text for:
  - Low oil pressure
  - Overspeed
  - High Oil Temperature
  - Overcrank
  - Emergency stop
  - AGC-4
- Emergency stop pushbutton
- Display navigation keys including two shortcut keys for Engine Parameters or Generator Parameters

**AGC-4/EMCP 4.2 PROTECTIVE RELAYING**

- Generator protective features
  - 25 sync-check ( AGC-4)
  - 32 rev. power (EMCP 4.2 and AGC-4)
  - 40 loss of excitation (Cat DVR and AGC-4 impedance based)
  - 50/51 Inst. and time overcurrent (GCB trip unit and AGC-4)
  - 47 Negative Voltage Sequence (AGC-4)
  - 46 Negative Sequence Current (AGC-4)
  - 27/59 phase under/over voltage (EMCP 4.2 and AGC-4)
  - 81O/U under/over frequency (EMCP 4.2 and AGC-4)
- Package mounted AGC-4 controls provides auto paralleling, CAN-bus, Ethernet communications, PWM and Analog outputs, and legacy analog load sharing (real and reactive)
- AGC-4 main display/ AOP secondary display

**CIRCUIT BREAKER**

- 3200A IEC rated, fixed type, 3 poles, genset mounted, electrically operated.
- Solid state trip unit for overload (time overcurrent) and fault (instantaneous) overcurrent protection. LSIG is standard.
- Includes DC shunt trip coil activated on any monitored engine or electrical fault and DC undervoltage release trip coil (UVR), 65 KA-interrupting capacity at 480 VAC.
- Ground fault sensing/trip (optional ground CT)

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**BUS BARS**
- Three phase, plus full rated neutral, bus bars are tin-plated copper with NEMA standard hole pattern for connection of customer load cables and generator cables.
- Bus bars are sized for full load capacity of the generator set at 0.8 power factor.
- Includes ground bus, tin-plated copper, for connection to the generator frame ground and field ground cable.

**CONTAINER**
- 40’ ISO high cube container, CSC 9-High Stack Certified
- Painted standard Cat Power Module White per Caterpillar Specifications
- Standard air intake louvers
- Three (3) lockable personnel doors with panic release
- Fire extinguisher
- LH and RH engine service panels integrated into container side walls
- 110% spill containment system for on-board engine fluids

**INTERNAL LIGHTING**
- Six (6) compact LED type internal DC lights with timers located at each personnel door
- One (1) duplex service receptacle

**BATTERY CHARGER AND BATTERIES**
- 24 VDC/20A battery charger with float/equalize modes and charging ammeter
- Four oversized maintenance free batteries

**EMERGENCY STOP PUSHBUTTON**
- Single emergency stop pushbuttons (ESP) located on rear face of generator set controls area

**EXHAUST SILENCER**
- Critical grade, internally mounted rectangular exhaust silencers with vertical discharge
- 2 m high vertical discharging exhaust stack with rain cap located in radiator discharge area (optional to mount rain cap only)

**TRAILER (optional)**
- Three axle with Anti-lock brake system
- Goodyear G314 295/75R225 Load Range G

**VOLTAGE REGULATION AND POWER FACTOR CONTROL CIRCUITRY**
- Generator mounted automatic voltage regulator, microprocessor based
- Manual raise/lower voltage adjust capability and VAR/power factor control circuitry, all via AGC-4, for maintaining constant generator power factor while paralleled with utility
- Includes RFI suppression, exciter limiter and exciter diode monitoring

**CURRENT TRANSFORMERS**
- CT’s rated 3500:5 with secondary wired to shorting terminal strip protection

**AC DISTRIBUTION**
- 50/60 Hz Transformer distributes utility voltage or customer supplied line voltage, which is selectable via onboard switch, for the Power Module AC auxiliaries .
- Provides 240/120 VAC for all module accessories except Jacket water heater (400/480V). Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

**MODES OF OPERATION**
- Provides for single unit stand-alone operation, island mode paralleling and load sharing with other power modules, and single unit-to-utility mode paralleling for base load control (with open transition between paralleling modes)*
- Island mode paralleling features:
  - AGC-4 control allows single unit to connect to a dead bus
  - Auto synchronization (voltage & phase matching)
  - Load sharing (kW) analog signal (like units & legacy compatible)
  - Load sharing (kVAR) analog signal (like units only)
- Utility mode paralleling features:
  - Auto synchronization (voltage & phase matching)
  - Base-load control (selectable: programmable set-point or potentiometer adjust)
  - Soft load/unload (programmable, shared set-point)
  - Power Factor control (programmable set-point)

## OPTIONAL FEATURES

| UTILITY MULTI-FUNCTIONAL RELAY | TRAILER |
|---|---|
| • Intertie protection provided via utility grade Basler BE1-11i<br>• Provides the following utility/intertie enabled protections:<br>– 25 (sync-check, utility mode)<br>– 27 (under voltage, 2 stage)<br>– 32 (rev. power)<br>– 40Z (loss of excitation, impedance based)*<br>– 47 (neg. sequence over voltage)<br>– 51 (phase, time over current)<br>– 51N (neutral, over current)<br>– 59 (over voltage, 2 stage)<br>– 81U (under frequency, 2 stage)<br>– 81O (over frequency)<br>– 60FL (fuse loss, 'major alarm' LED - no trip)<br>– Modbus interface via 485 serial connection<br>– Real or Reactive Load High Demand, 'minor alarm' LED - no trip, requires site-specific setpoint values programmed.<br>• Standard for N. American rental market<br><br>**Exclusive Caterpillar Intellectual Property* | • 3-axle chassis<br>• Ladders, handrails, internal storage provisions |

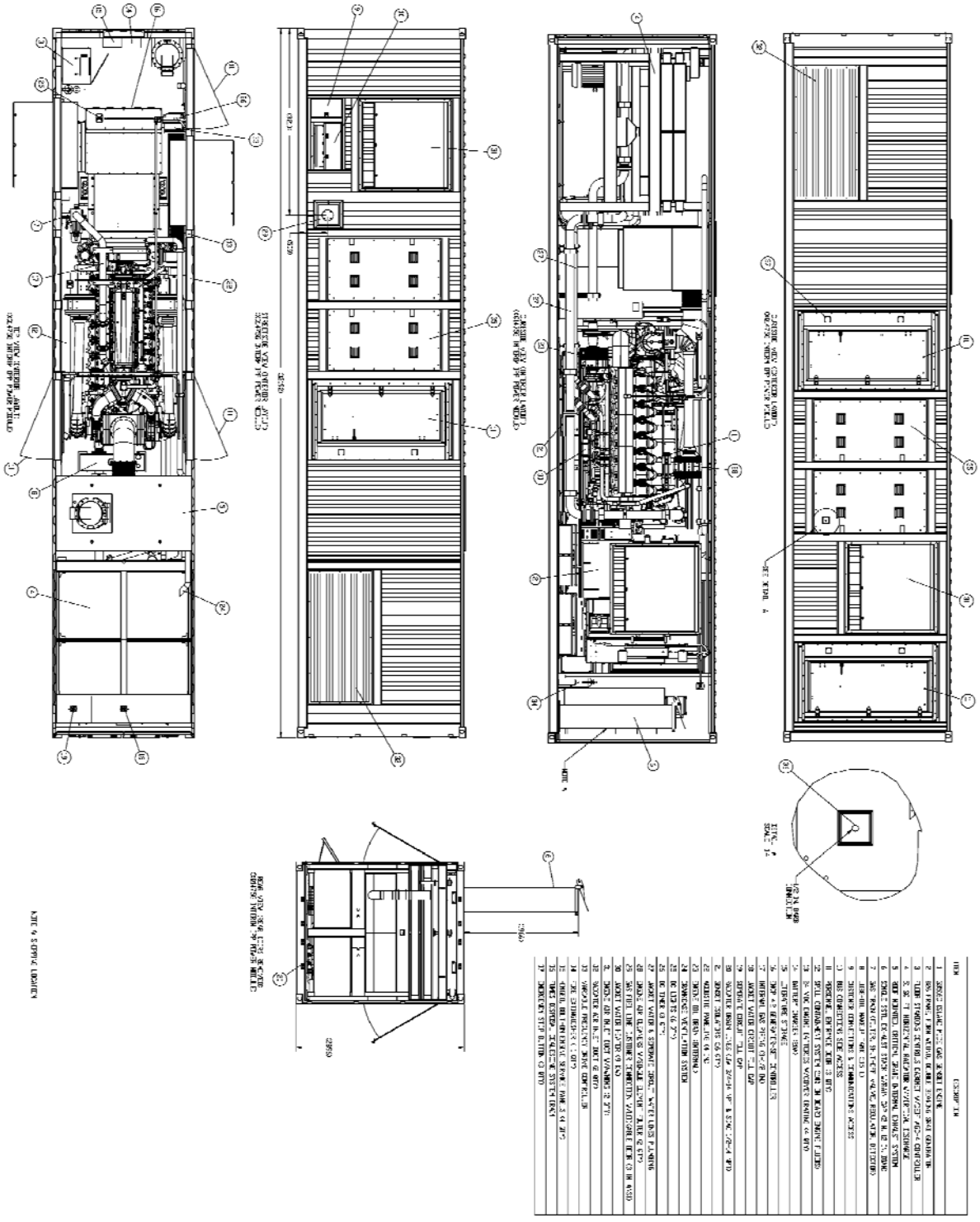
## RATING DEFINITIONS AND CONDITIONS

**Continuous** — Output available without varying load for an unlimited time. Continuous power is in accordance with ISO8528, AS2789, and BS5514. Fuel stop power is in accordance with ISO03036. Natural gas ratings have been established on natural gas with net calorific Low Heat Value (LHV) of approximately 35.6 MJ/Nm3 (905 Btu/cu ft) and 80 Methane Number (MN). For values in excess of altitude, ambient temperature, inlet/exhaust restriction, or different from the conditions listed, contact your local Cat dealer.

## WEIGHTS AND DIMENSIONS

| Model | Length mm (in) | Width mm (in) | Height mm (in) | Weight with Lube oil and Coolant kg (lb) |
|---|---|---|---|---|
| **XQ1475G w/o Chassis** | 12192 (480) | 2438 (96) | 2896 (114) | 31,920 (70,372) |
| **XQ1475G w/Chassis** | 12192 (480) | 2438 (96) | 2896 (114) | 36,003 (79,372) |

## EQUIPMENT LAYOUT



# XQ1475G RENTAL



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