



**Continuous 1475 kW
50/60 Hz Switchable**

Image shown may not reflect actual configuration

Specifications

Frequency	Voltage	Continuous kW (kVA)	Speed rpm
50 Hz	400/230V	1475 (1844)	1800
60 Hz	480/240V	1475 (1844)	1800

Cat® G3516C Gas Engine	Metric	Imperial (English)
Number of Cylinders	V16	
Bore	170 mm	6.7 in
Stroke	190 mm	7.5 in
Displacement	69 L	4,210 in ³
Aspiration	Turbocharged Separate Circuit Aftercooled	
Compression Ratio	11.3:1	
Aftercooler Inlet	54°C	129°F
Jacket Water Outlet	98°C	208.4°F
Exhaust Manifold	Dry	
Engine rpm	1500/1800	
Fuel system	Cat Low Pressure with Air Fuel Ratio Control	
Fuel Pressure Range	0.206 - 0.483 Bar	3-7 PSI
Methane Number	55-100	
Governor Type	ADEM™ A3 Control System	

Features & Benefits

Fuel/Emissions Strategy

- Meets most worldwide emissions requirements down to 500 mg/Nm³ 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

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

Cat SR4 Generator

- Designed to match the performance and output characteristics of the Cat gas engine
- Class H insulation operating at Class F temperature for extended life
- Double bearing, wye-connected, static regulated, brushless, permanent magnet excited
- Stator winding and bearing temperature monitoring
- Coastal insulation protection and anti-condensation space heaters

Cat EMCP 4.2 Control Panel

- Provides engine and generator monitoring and protection
- 3.8-inch, graphical display denotes text alarm/event descriptions, set points, engine and generator monitoring, and is visible in all lighting conditions
- Integration with the Cat Digital Voltage Regulator (CDVR) provides enhanced system performance
- Intertie protection provided via utility grade Basler BE1-11i utility multi-function relay (UMR)
- Three-phase sensing with adjustable volts-per-hertz regulation
- Provides precise control and constant voltage in the normal operating range

Power Distribution and Paralleling Controls

- 3200A IEC rated, fixed type, 3 poles, package mounted, electrically operated Circuit Breaker Manual and automatic paralleling capability
- AGC-4 provides paralleling, load sharing, VFD control, and primary generator protection
- Multi-mode operation (island, multi-island and utility parallel), load sharing (multi-unit only)

Sound-attenuated Container

- Provides 9-high stack CSC rated container for ease of transportation and protection
- Meets 72 dB(A) at 15 meters or below per SAE J1074 measurement procedure at continuous rating
- Personnel doors (2 total) on both sides of the engine for service access, plus 1 additional personnel door for general access
- Sound attenuated air intake louvers

Asset Monitoring and Management

- Cat Connect PLE601

Quality

- Factory designed and production tested to assure customer satisfaction.
- Manufactured in ISO 9001:2000 certified facility

Reduced Environmental Impact

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



Standard Equipment

Cat G3516C Island Mode Gas Engine

- Operates on 31.5 to 47.2 MJ/Nm³ (800 to 1200 btu/ft³) dry pipeline natural gas)
- Cat Gas Engine Control Module (Cat GECM) includes electronic speed governor with hydrax actuator and provides transient richening and turbo bypass control
- Electronic Ignition System (controlled by ECM)
- Individual cylinder Detonation Sensitive Timing (DST)
- Engine installed electronic fuel metering valve
- Hydraulic actuated throttle plate electronically controlled by ECM
- Jacket Water Heater, 9kW, 400/480V, 50/60 Hz, 3-phase with isolation valves

Generator

- 826 Frame double bearing SR-4B generator, 6-lead design
- Three-phase brushless, form wound, permanent magnet excited
- Winding temperature detectors

Air Filter

- Heavy duty, single element canister type air cleaner with service indicator

Cat Cooling System

- Standard cooling provides 40C (104F) ambient capability with 500mg/Nm³ NO_x at 100% Continuous rating before derate
- Horizontally mounted radiator with vertical air discharge
- Energy efficient electric drive fan
- Variable frequency drive (VFD) for optimal partial load fuel consumption

Starting/Charging System

- Dual 24V electric starting motors
- 24 VDC/20A battery charger with float/equalize modes and charging ammeter
- Charging Alternator, 60-Amp
- Four (4) oversized maintenance-free batteries

Exhaust System

- 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)

Lube Oil System

- Integral lube oil cooler, lube oil pump, oil filter, filler, and dipstick and oil drain lines routed to engine rail
- Prelube Pump, 24VDC continuous type
- Includes engine-mounted oil level regulator and 114-L (30gal) oil tank for maintaining oil pan levels in extended run applications

Control Panel

- Package mounted EMCP 4.2 provides power metering, protective relaying and engine and generator control and monitoring.
- Convenient service access for Cat service tools
- Integration with the Cat Digital Voltage Regulator (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
- Graphical display with positive image, transfective LCD, adjustable white backlight/contrast
- Digital indication for:
 - Operating hours
 - DC Volts
 - Oil Temperature
 - Coolant Temperature
 - Oil pressure
 - RPM
- 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
 - Emergency stop
 - Overcrank
 - High Oil Temperature
 - Overspeed
 - AGC-4
- Emergency stop pushbutton
- Display navigation keys including two shortcut keys for Engine Parameters or Generator Parameters
- Generator Protection features: 25, 32, 40, 46, 47, 50/51, 27/59, 81 O/U
- Reverse compatibility for interface to legacy power modules Quality and Product Support



Standard Equipment

Container

- 40' ISO high cube container, 9-high stack CSC certified
- Sound attenuated 72 dB(A) @ 15 m (50 ft)
- Four (4) sound attenuated air intake louvers and 3 lockable personnel doors with panic release
- Interior walls and ceilings insulated with 100 mm of acoustic paneling
- Floor of container is undercoated for corrosion protection
- Side bus bar access door, external access load connection bus bars
- Shore power connection via distribution block connections for jacket water heater, battery charger, generator
- Six (6) compact LED type internal DC lights with timers located at each personnel door
- 3" ANSI flange customer fuel connection with cover to prevent vandalism
- Energized-to-run (ETR) shutoff valve (double solenoid, low/high pressure switch, CSA/FM approved)
- Cat Brand fuel filter, wall mounted and gas pressure regulator
- Vibration isolators, stainless steel fastening hardware and hinges
- External drain access to standard fluids
- One 4.5 kg (10 lb) carbon dioxide fire extinguisher
- LH and RH engine service panels integrated into container side walls
- 110% spill containment system for on-board engine fluids
- One (1) duplex service receptacle

Distribution System

- 3500:5 rated Current Transformers with secondary wired to shorting terminal strip protection
- 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.
- 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

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



Standard Equipment

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 setpoint)
 - Power Factor control (programmable setpoint)

Power Factor Control Circuitry

- 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

Optional Equipment

Utility Multi-Functional Relay*

- Intertie protection provided via utility grade Basler
- BE1-11i
- Provides the following utility/intertie enabled protections:
 - 25 (sync-check, utility mode)
 - 27 (under voltage, 2 stage)
 - 32 (rev. power)
 - 40Z (loss of excitation, impedance based)*
 - 47 (neg. sequence over voltage)
 - 51 (phase, time over current)
 - 51N (neutral, over current)
 - 59 (over voltage, 2 stage)
 - 81U (under frequency, 2 stage)
 - 81O (over frequency)
 - 60FL (fuse loss, 'major alarm' LED - no trip)
 - Modbus interface via 485 serial connection
 - Real or Reactive Load High Demand, 'minor alarm' LED - no trip, requires site-specific setpoint values programmed

Trailer

- Three axle with Anti-lock brake system
- Ladders, handrails, internal storage provisions
- Goodyear G314 295/75R225 Load Range G

* Standard for N. American rental market



Technical Data*

Cat Generator	
Frame size	826
Pitch	2/3
No. of poles	4
Insulation	Class H
Excitation	Static regulated brushless PM excited
Constructions	Double bearing, close coupled
Enclosure	Drip proof IP22
Temperature rise	105°C (221°F)
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%

	Units	50 Hz	60 Hz
Power Rating	kW (kVA)	1475 (1844)	
Performance Specification		EM0765	EM0754
Lubricating System Lube Oil Refill Volume with filter change for standard sump	L (gal)	416 (110)	
Fuel System Fuel consumption (ISO 3046/1)			
100% Load			
Max VFD (50kW)	MJ/ekW-hr	9.62	10.34
Min VFD (3kW)	MJ/ekW-hr	9.35	10.05
75% Load			
Max VFD (50kW)	MJ/ekW-hr	9.92	10.74
Min VFD (3kW)	MJ/ekW-hr	9.57	10.39
50% Load			
Max VFD (50kW)	MJ/ekW-hr	10.59	11.86
Min VFD (3kW)	MJ/ekW-hr	9.97	11.14
Altitude Capability At 25° C (77° F) ambient, above sea level	m (ft)	1500 (4921)	



Technical Data (continued)

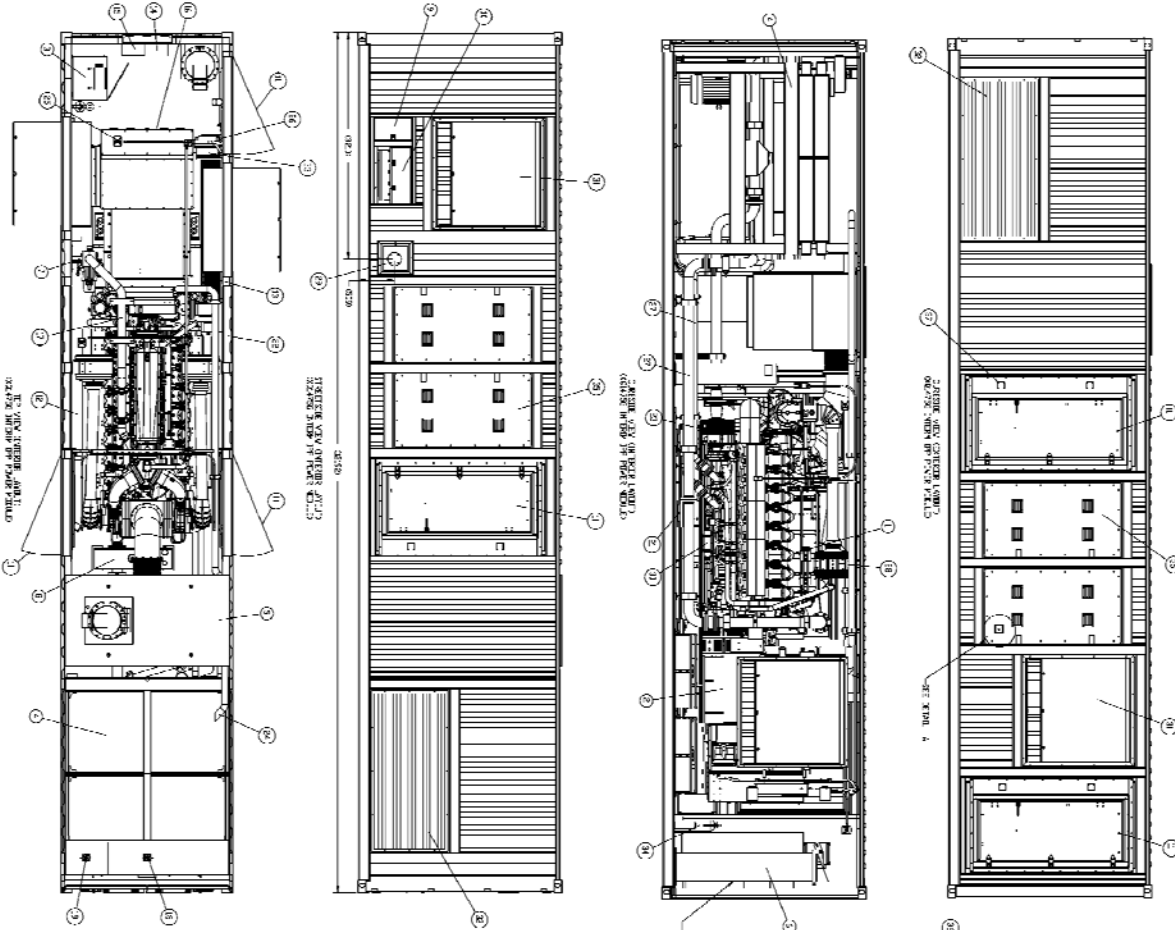
	Units	50 Hz	60 Hz
Cooling System			
Package ambient capability	° C (° F)	40 (104)	
Jacket water temperature (maximum outlet)	° C (° F)	99 (210)	
System coolant capacity	L (gal)	770 (203)	
System required airflow	m ³ /min (ft ³ /min)	2,604 (91,959)	
Exhaust System			
Combustion air inlet flow rate	m ³ /min (ft ³ /min)	116 (4,907)	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 (49 feet)	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)	2,584	1,521
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.

**per SAE J1074

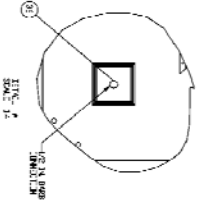
Dimensions and Weights				
Model	Length mm (in)	Width mm (in)	Height mm (in)	Weight with Lube oil and Coolant kg (lb)
XQ1475G without Trailer	12,192 (480)	2,438 (96)	2,896 (114)	31,920 (70,372)
XQ1475G with Trailer	12,192 (480)	2,438 (96)	2,896 (114)	36,003 (79,372)

General Layout



NOT TO SCALE

NOT TO SCALE



NO.	DESCRIPTION
1	GENERATOR SET
2	CONTROL PANEL
3	EXHAUST SYSTEM
4	FUEL SYSTEM
5	COOLING SYSTEM
6	STARTER MOTOR
7	AVOID WATER DAMAGE
8	AVOID OIL LEAKS
9	AVOID EXCESSIVE VIBRATION
10	AVOID EXCESSIVE NOISE
11	AVOID EXCESSIVE HEAT
12	AVOID EXCESSIVE HUMIDITY
13	AVOID EXCESSIVE AIR POLLUTION
14	AVOID EXCESSIVE RAIN
15	AVOID EXCESSIVE WIND
16	AVOID EXCESSIVE SUN
17	AVOID EXCESSIVE DUST
18	AVOID EXCESSIVE SALINITY
19	AVOID EXCESSIVE ACIDIC ENVIRONMENT
20	AVOID EXCESSIVE BATTERY DISCHARGE
21	AVOID EXCESSIVE BATTERY OVERCHARGE
22	AVOID EXCESSIVE BATTERY SHORT CIRCUIT
23	AVOID EXCESSIVE BATTERY OPEN CIRCUIT
24	AVOID EXCESSIVE BATTERY VIBRATION
25	AVOID EXCESSIVE BATTERY TEMPERATURE
26	AVOID EXCESSIVE BATTERY HUMIDITY
27	AVOID EXCESSIVE BATTERY AIR POLLUTION
28	AVOID EXCESSIVE BATTERY RAIN
29	AVOID EXCESSIVE BATTERY WIND
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38	AVOID EXCESSIVE BATTERY VIBRATION
39	AVOID EXCESSIVE BATTERY TEMPERATURE
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42	AVOID EXCESSIVE BATTERY RAIN
43	AVOID EXCESSIVE BATTERY WIND
44	AVOID EXCESSIVE BATTERY SUN
45	AVOID EXCESSIVE BATTERY DUST
46	AVOID EXCESSIVE BATTERY SALINITY
47	AVOID EXCESSIVE BATTERY ACIDIC ENVIRONMENT
48	AVOID EXCESSIVE BATTERY DISCHARGE
49	AVOID EXCESSIVE BATTERY OVERCHARGE
50	AVOID EXCESSIVE BATTERY SHORT CIRCUIT
51	AVOID EXCESSIVE BATTERY OPEN CIRCUIT
52	AVOID EXCESSIVE BATTERY VIBRATION
53	AVOID EXCESSIVE BATTERY TEMPERATURE
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56	AVOID EXCESSIVE BATTERY RAIN
57	AVOID EXCESSIVE BATTERY WIND
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80	AVOID EXCESSIVE BATTERY VIBRATION
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84	AVOID EXCESSIVE BATTERY RAIN
85	AVOID EXCESSIVE BATTERY WIND
86	AVOID EXCESSIVE BATTERY SUN
87	AVOID EXCESSIVE BATTERY DUST
88	AVOID EXCESSIVE BATTERY SALINITY
89	AVOID EXCESSIVE BATTERY ACIDIC ENVIRONMENT
90	AVOID EXCESSIVE BATTERY DISCHARGE
91	AVOID EXCESSIVE BATTERY OVERCHARGE
92	AVOID EXCESSIVE BATTERY SHORT CIRCUIT
93	AVOID EXCESSIVE BATTERY OPEN CIRCUIT
94	AVOID EXCESSIVE BATTERY VIBRATION
95	AVOID EXCESSIVE BATTERY TEMPERATURE
96	AVOID EXCESSIVE BATTERY HUMIDITY
97	AVOID EXCESSIVE BATTERY AIR POLLUTION
98	AVOID EXCESSIVE BATTERY RAIN
99	AVOID EXCESSIVE BATTERY WIND
100	AVOID EXCESSIVE BATTERY SUN

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. $1 - ((1 - \text{Altitude/Temperature Deration}) + (1 - \text{RPC}))$

Ratings 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.

www.Cat.com/rentalpower

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