

Cat® XQ1140 Rental Generator Set



Standby 1000 kW
Prime 910 kW
60 Hz 1800 rpm 480V
60 Hz 1800 rpm 240V
60 Hz 1800 rpm 208V
60 Hz 1800 rpm 600V

Image shown may not reflect actual configuration.

Specifications

Frequency Hz	Speed (rpm)	Voltage	Standby		Prime	
			kW	kVA	kW	kVA
60	1800	480 / 277V	1000	1250	910	1136
		240 / 139V	1000	1250	910	1136
		208 / 120V	1000	1250	910	1136
		600 / 374V	1000	1250	910	1136

Cat® C18 Diesel Engine	Metric	Imperial (English)
Number of Cylinders	I-6, 4-Stroke-Cycle Water Cooled Diesel	
Bore	145 mm	5.7 in
Stroke	183 mm	7.2 in
Displacement	18.1L	1106.4 in ³
Aspiration	Turbocharged-Aftercooled	
Compression Ratio	14.1:1	
Engine Speed	1800 rpm	
Aftercooler Type	MEUI	
Fuel System	Direct Injection	
Governor Type	ADEM™ A4 Control System	
Fuel	Requires Ultra Low Sulfur Diesel (ULSD)	

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 Design Criteria
- Meets ISO 8528 transient response

Single-source Supplier

- Package is factory designed and production tested
- Manufactured in ISO 9001:2000 facility

Cat® C18 Diesel Engines

- Uses ACERT™ Technology
- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic ADEM™ A4 engine control

Cat Clean Emissions Modules (CEM)

- Each aftertreatment module consists of Caterpillar Regeneration System (CRS), Diesel Oxidation Catalyst (DOC), Diesel Particulate Filter (DPF), and Selective Catalytic Reduction (SCR)

Diesel Exhaust Fluid (DEF) Tanks

- 25-gallon DEF tank (each) with on-tank fill and integrated pump, level sensor and heating elements
- Tanks are connected to allow engine access to all DEF
- Electrically heated DEF lines from tank to CEM

Cat Generator

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class H insulation

Cat EMCP 4.4 Control Panel

- Fully featured power metering, protective relaying engine/generator control and monitoring
- Simple user-friendly interface and navigation Automatic set-point adjustment integrated with voltage and frequency selection

Cat Integrated Voltage Regulator (Cat IVR)

- Three-phase sensing
- Adjustable volts-per-hertz regulation
- Provides precise control, excellent block loading, and constant voltage in the normal operating range

Sound Attenuated Container

- Provides ease of transportation and protection
- Sound level is 76 dB(A) at 7 meters per SAE J1074 measured at 75% prime load

Reduced Environmental Impact

- 110% spill containment of onboard engine fluids
- Variable speed cooling fan for reduced fuel consumption and reduced sound at partial loads

Asset Monitoring and Management

- Each genset equipped with Product Link™ **Generation** (PLG) hardware to provide 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

Factory-installed Standard Equipment

Engine

- **Two (2)** Cat® C18 heavy-duty diesel engines meeting Tier 4 Final emission standards **Generator** (per engine)
- Three-phase, random wound, coastal insulation protection, 0.6667 pitch, permanent magnet excited, Class H insulation
- Sized for 105°C temperature rise at 40°C ambient
- Anti-condensation heaters (240V, 1.2 kW)
- 12-lead design, with voltage changeover link board (480V)
- Cat IVR with VAR/PF control

Air Inlet (per engine)

- Heavy-duty air cleaner with precleaner, two-stage cyclonic paper with dust cup and service indicator
- Turbocharger and air-to-air aftercooler

Cat CEM (per engine)

- CEM comes with integrated CRS, DOC, DPF, and SCR and is located in separate compartment

DEF System (per engine)

- 25-gal plastic DEF tank provides capacity to meet or exceed fuel tank runtime @ 75% prime
- DEF tank is equipped with integrated pump, level sensor to display the DEF level in EMCP panel, and electrically heated lines from DEF tank to CEM
- Equipped with low and critically low-level alarms with a critically low shutdown

Charging System (per engine)

- UL Listed 240V, 20 amp battery charger, shockmounted and enclosed in dust-proof housing
- Charging alternator; 24V-80A, heavy duty with integral regulator and belt guards
- Solar maintainer for batteries

Fuel System (per engine)

- 630-gal (2385 L) double-wall fuel tank, UL 142 and ULC 601 Listed and complies with Transport Canada requirements, 24-hour runtime @ 75% prime, internal and external fuel fill
- Fuel tanks connected by fuel transfer system with filter to allow both engines access to all fuel onboard
- Fuel cooler
- Switch operated, electric priming pump
- Auxiliary connections for customer-supplied fuel transfer system with 2-way fuel transfer valve
- Primary fuel filters (2) with integral water separator and differential pressure gauge
- Engine-mounted secondary fuel filters

Lube System (per engine)

- Pump, integral oil cooler, lube oil, filter, filler and dipstick, and oil sampling valve
- Open crankcase breather with cartridge filter
- Oil drain line with internal brass ball valve routed to connection point accessible from exterior
- 500-hour oil change intervals

Mounting System (per engine)

- Each generator set soft mounted to the heavy duty, fabricated steel base frame
- Steel base frame with tie-down eyes contains integral fuel tank Starting System
- Single electric starting motor, 24V per engine
- Each engine has dual 12V (1400 CCA) maintenance-free batteries with disconnect switch, battery rack, and cables
- UL Listed, 240V single-phase jacket water heater with thermostat and shut-off valves

Cooling

- Provides 47°C ambient capability at Prime rating and 500m
- Vertically mounted radiator with vertical air discharge from the container
- Coolant drain line with internal valve and lowlevel shutdown switch
- Coolant sight gauge and low-level shutdown switch
- 50/50 Extended Life Coolant

Factory-installed Standard Equipment (continued)

Containerized Module

- 40' ISO high cube container
- Sound attenuated air intake louvers and five lockable personnel doors with panic release
- Interior walls and ceilings insulated with 100 mm of acoustic paneling
- Side bus bar access door, external access load connection bus bars
- Shore power connection via distribution block connections for jacket water heater, battery charger, space heaters, generator condensate heaters, and internal duplex service receptacle
- Customer convenience panel with multiple receptacles
- External Emergency Stop pushbuttons (2)
- Duplex service receptacle (1), 120V, from generator power
- Six internal LED DC lights with one timer
- Corrosion resistant hardware and hinges
- Cat® Rental Power decals
- Painted standard Cat power module white
- External drain access to coolant, oil, and DEF fluids
- Auxiliary connections for customer-supplied fuel transfer system

Shore Power

- 240V shore power connection for jacket water heater, generator space heater, and battery charger
- Includes controls to de-energize jacket water heaters and generator space heater when the engine is running

Generator Set Controls and Protection

- EMCP 4.4 generator set mounted controller per genset
- Automatic start/stop with cooldown timer
- Generator features: 32, 32RV, 46, 50/51, 27/59, 81 O/U
- Utility Multi-function Relay (UMR) protective features: 24, 25, 27, 32, 40, 43, 46, 47, 50, 51, 51N, 59, 67, 79, 81O/U
- Multiple Genset Control Data Link (MGDL) for convenient paralleling connection
- 2000A electrically operated generator circuit breaker per genset
- 3600A feeder (tie) breaker
- Multi-mode operation (island, multi-island and utility parallel)
- Manual and automatic paralleling capability
- Metering display: voltage, current, frequency, power factor, kW, WHM, kVAR, and synchroscope

Trailer

- Two-axle, air-ride chassis with anti-lock brake system

Quality

- Factory testing of standard generator set and complete power module
- UL, NEMA, ISO, and IEEE standards
- O&M manuals
- Full manufacturer's warranty

Technical Data

Cat® Generator	
Frame Size	LC6134G
Pitch	0.6667
No. of poles	4
Insulation	Class H
Excitation	Static regulated brushless PM excited
Constructions	Single bearing, close coupled
Enclosure	Drip proof IP23
Temperature rise	105° C
Alignment	Pilot Shaft
Over speed capability – % of rated	125% of rated
Voltage regulator	3 phase sensing with Volts-per-Hertz
Voltage regulation	Less than ± 0.5% voltage gain
Wave form deviation	3%
Telephone Influence Factor (TIF)	Less than 50
Harmonic Distortion (THD)	Less than 5%

Cat Generator Set			
	Units	60 Hz — Standby	60 Hz — Prime
Power Rating	kVA (kW)	1000 (1250)	910 (1138)
Performance Specification			
Lubricating System			
Oil pan capacity	L (gal)	*74 (19.5)	*74 (19.5)
Fuel System			
Fuel consumption — 100% Load	L/hr (gal/hr)	272 (71.8)	252 (66.4)
75% Load	L/hr (gal/hr)	214 (56.6)	198 (52.4)
50% Load	L/hr (gal/hr)	156 (41.0)	144 (38.0)
Fuel tank capacity	L (gal)	4770 (1260)	4770 (1260)
Running time @ 75% rating	Hr	22	24
Cooling System			
Ambient capability	°C (°F)	47 (113)	47 (117)
Engine & radiator coolant capacity	L (gal)	201.4 (53.2)	201.4 (53.2)
Engine coolant capacity	L (gal)	53.8 (14.2)	53.8 (14.2)
Air Requirements			
Combustion air flow	m³/min (cfm)	70.4 (2486)	69.2 (2446)
Max dirty air cleaner restriction	kPa (in H ₂ O)	12.4 (49.8)	12.4 (49.8)
Exhaust System			
Exhaust flow at rated	m³/min (cf m)	180.4 (6370)	173.4 (6126)
Exhaust temp at rated kW – dry exhaust	°C (°F)	490 (914)	472 (882)
Noise Rating (with enclosure)			
@ 7 meters (23 feet) @ 75% rating	dB(A)	76	76

Technical Data (continued)

Single Unit Operation*

Genset Output	Load Factor	Diesel Consumption & Runtime			DEF Consumption & Runtime		
		Gal/Hrs	L/Hrs	Hrs	Gal/Hrs	L/Hrs	Hrs
500	110	37.9	143.5	33	1.3	5.0	38
455	100	33.4	126.4	38	1.2	4.4	43
341	75	25.6	96.9	49	0.9	3.4	56
227	50	18.3	69.3	69	0.6	2.4	78
114	25	11.4	43.2	111	0.4	1.5	125

Dual Unit Operation**

Genset Output	Load Factor	Diesel Consumption & Runtime			DEF Consumption & Runtime		
		Gal/Hrs	L/Hrs	Hrs	Gal/Hrs	L/Hrs	Hrs
1000	110	75.8	286.9	17	2.7	10.0	19
910	100	66.8	252.9	19	2.3	8.9	21
682	75	51.2	193.8	25	1.8	6.8	28
454	50	36.6	138.5	34	1.3	4.8	39
228	25	22.8	86.3	55	0.8	3.0	63

* Internal Fluid Transfer System is turned on.

** Load shared equally between two engines

Dimensions and Weights				
	Length mm (in)	Width mm (in)	Height mm (in)	With Lube Oil & Coolant Kg (lb)
W/O chassis (full fluids)	12192 (480)	2438 (96)	2896 (114)	26,995 (59,513)
W/O chassis (coolant, lube oil, no fuel, no DEF)	12192 (480)	2438 (96)	2896 (114)	22,728 (50,107)
With chassis (full fluids)	12,504 (492)	2488 (98)	4100 (161)	30,349 (66,907)

HMI Exterior Controls

- Start/Stop as single unit or individual genset
- Simultaneously monitor both engines and gensets
- Displays active and logged diagnostics
- Control individual genset breakers and feeder breaker
- Allows for external operation, including start / stop, after EMCP's are placed in Auto



Modes of Operation

- Run as single unit 1140 KVA
 - 2 Generators paralleled / load sharing (2 Generators running continuously, share equal load)
 - 2 Generators paralleled / load sense load demand (1 or 2 generators running depending on size of load)
- Run as 2 separate 570 KVA units at 2 different voltages (480 or 208 VAC)

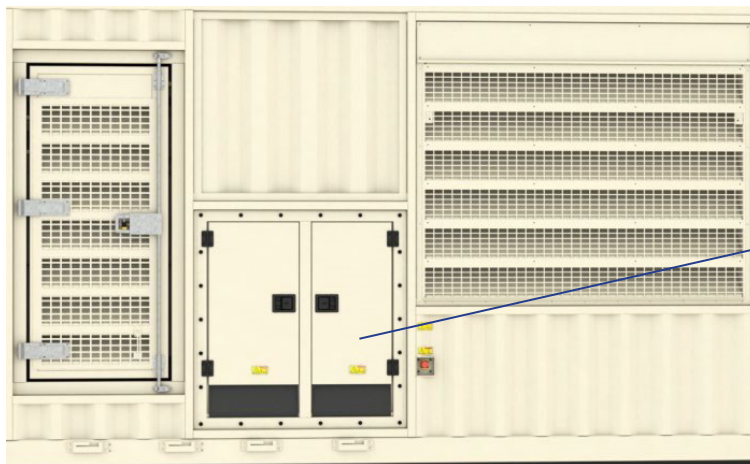
Best Battery

- Provide power to switched common equipment on power module (HMI, Ethernet Switch, Feeder breaker control, Estop circuits, Fuel Equalization system)
- Draw power equally from both genset battery systems

Circuit Breaker

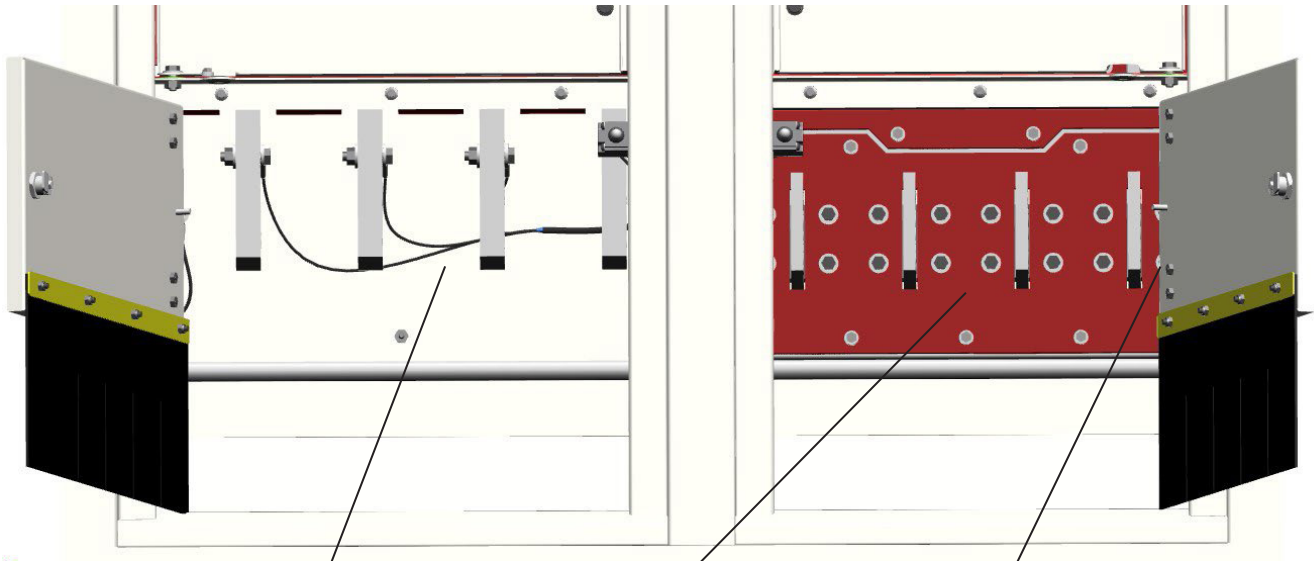
- 2000A electrically operated generator circuit breaker
- 3600A electrically operated (tie) feeder breaker

Distribution / Connection



Distribution / Connection (continued)

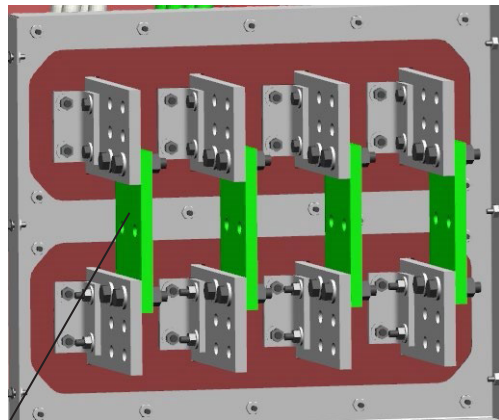
- Dual customer connections:
 - o Primary connection when run as single unit
1140 KVA
 - o Secondary connection when run as 2 separate 570 KVA units at 2 different voltages (busbar links need removed)



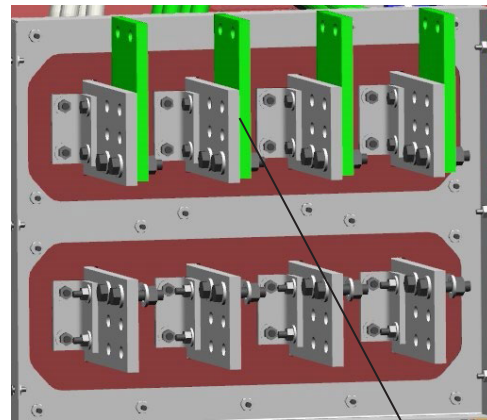
Primary Connection (1) 140 kVA mode and connection to Front Genset in (2) 570 kVA mode

Secondary Connection to Rear Genset in (2) 570 kVA mode

Shore Power Connections



Removable buss links (1)
1140 kVA configuration



Removable buss links (2)
570 kVA configuration

Ratings Definitions and Conditions

Meets or Exceeds International Specifications:
IEC60034-22, ISO 3046, ISO 8528, NEMA MG1-22,
NEMA MG1-16, UL1004B, NEC, CEC, 2006/42/EEC,
2006/95/EC, 2004/108/EC, 2000/EC/14, UL142, ULc601,
IBC CGSB43, API 546, EGSA 101P, IEEE 43, DEFRA,
UL1741, NFPA 99/110, OSHA, 97/68/EC, BS4999,
BS5000, IEC60034-5.

Fuel Rates are based on fuel oil of 35° API [16°C(60°F)] gravity having an LHV of 42 780 kJ/kg(18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/liter (7.001 lb/U.S. gal). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details.

For information regarding low sulfur fuel and biodiesel capability, consult your Cat dealer.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions.

Standby – Applicable for supplying continuous electrical power (at variable load) in the event of a utility power failure. No overload is permitted on these ratings. The generator on the generator set is peak prime rated (as defined in ISO8528 at 30°C (86°F)).

Prime – Applicable for supplying continuous electrical power (at variable load) in lieu of commercially purchased power. There is no limitation on the annual hours of operation and the generator can supply 10% overload power.

www.cat.com/electricpower

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