Cat® XQ60 Rental Generator Set

Image shown may not reflect actual configuration.

Prime 46 kW, 57.5 kVA
U.S. EPA Tier 4 Final
60 Hz
1800 RPM

Specifications

Generator	Frequency	Voltage	Prime ekW (kVA)	Phase	Amp (A)
Standard	60 Hz	480/277 V	46 (57.5)	3-phase	69.2
		208/120 V	46 (57.5)	3-phase	159.6
		240/120 V	39 (39)	1-phase	162.5

Cat® C3.6 Diesel Engine	Metric	Imperial (English)
Configuration	I-4, 4-stroke diesel	
Bore	98 mm	3.85 in
Stroke	120 mm	4.72 in
Displacement	3.6 L	219 in^3
Aspiration	Turbocharged-Aftercooled (TA)	
Compression Ratio	17:1	
Engine Speed	1800 rpm	
Governor Type	Electronic	
Governor Class	ISO 8528 G2	
Maximum Power at rated speed – bkW (hp) Prime	50.4	67.5

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® C3.6 Diesel Engine

- Four-stroke diesel engine combines performance and excellent fuel economy with minimum weight
- On-engine aftertreatment consists of Diesel Oxidation Catalyst (DOC), and Diesel Particle Filter (DPF) for service-free operation
- Load management system
- 500-hour oil change interval
- Electronic engine controls
- Engine block heater 120 VAC

Cat LC Series Generator

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

XQCP Control Panel

- Electronic control panel provides power metering, protective relaying, engine, and generator parameter viewing, and expanded AC metering
- Four lines back-lit LCD text display
- Simple, user-friendly interface and navigation
- Integrates with the Automatic Voltage Regulator (AVR) to provide precise control, excellent block loading, and constant voltage

Design Features

- 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 onboard and external fuel source
- Solar battery maintainer

Sound-attenuated Enclosure

- Rugged, corrosion-resistant construction:
  - Galvannealed, sheet steel body panels with zinc phosphate pre-treatment prior to polyester powder coating
  - Stainless steel hinges
- Excellent access for service and maintenance:
  - Two doors on each side, and one rear door for power distribution and control panel access
  - 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
- Single point lifting

Standard 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

- Cat Connect hardware provides two-way communication for remote control and equipment monitoring via cellular or hardwired 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
- PMG (Permanent Magnet Generator)
- Battery charger
- Trailer brake (electric or hydraulic)
- Trailer hitch (2-in. ball, 2-5/16-in. ball, or pintle)
- 208V 3-phase sockets with breakers

Standard Equipment

Engine

- Cat C3.6 , heavy-duty, U.S. EPA Tier 4 Final certified diesel engine with load management system.
- Engine-mounted DOC plus DPF canister
- Block heater, 110-120 VAC
- Requires Ultra Low Sulfur Diesel (ULSD) fuel
- Engine electrical system:
  - 12V, DC electrical system
  - 85A, 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; requires ULSD fuel
- 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 IEC 60034-1, EN 61000-6, 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 impregnated in a thermo-setting moisture-, oil-, and acid-resisting varnish
  - Heavy coat of anti-tracking varnish for additional protection against moisture or condensation
- AVR D350:
  - Simplified operation and troubleshooting
  - Equipped with NFC technology for communication and configuration purposes
  - 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 factor 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
  - Electronic fuel gauge
- Canopy:
  - Sound attenuated to 67 dBA at 7m (23 ft)
  - Two doors on each side, one rear door for power distribution and control panel access
- Cooling system:
  - Cooling system provides 43°C (109°F) ambient capability at 500 m (2,460 ft) above sea level
- Electrical system:
  - 12V, DC electrical system
  - 850 CCA, maintenance-free, wet battery
  - Battery disconnect switch, lockable
  - Solar battery charger with solar array
  - Resettable, switch-style circuit breakers (DC circuit)
  - Optional 12V, 10 A battery charger, constant voltage, UL Listed
- Engine and generator mounting:
  - Engine and generator directly coupled by SAE flange
  - Engine flywheel 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
- Fuel system:
  - Cross-linked polyethylene (XLPE) fuel tank
  - 24-hour runtime @ 75% prime load
  - 2-position valves and external ports (1/4-in.NPT) allow connection of an auxiliary fuel source
- CSA 22.2 Certified

Standard Equipment *(continued)*

Generator Controls and Power Distribution

- XQCP, digital generator set controller, mounted behind a hinged, lockable door with viewing window
- Circuit breaker: 3-pole molded case breaker, 175A, UL Listed and CSA Certified 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, twist locking input receptacles
  - Two – 120V, 20A duplex receptacles with GFCI*
  - Each receptacle 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
- Optional:
  - Two NEMA output receptacles

Quality and Product Support

- Factory load-testing of complete generator set
- Factory test certificate available upon request
- Equipment meets the following standards: BS 4999, BS 5000, BS 5514, IEC 60034, EN 61000-6, 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.

Technical Data

Cat Generator		
Frame Size		LC1514P
Pitch		0.6667
No. of poles		4
Insulation		Class H
Enclosure		Drip proof IP23
Voltage regulation		± 0.25% at steady state from no load to full load
Frequency regulation		± 0.25% for constant load from no load to full load
Waveform deviation		THD <4%
Overspeed limit		2250 rpm
Available voltages	Standard	Switchable voltage output: 480/277V, 3-phase; 208/120V, 3-phase; 240/120V, single-phase
	Optional	N/A

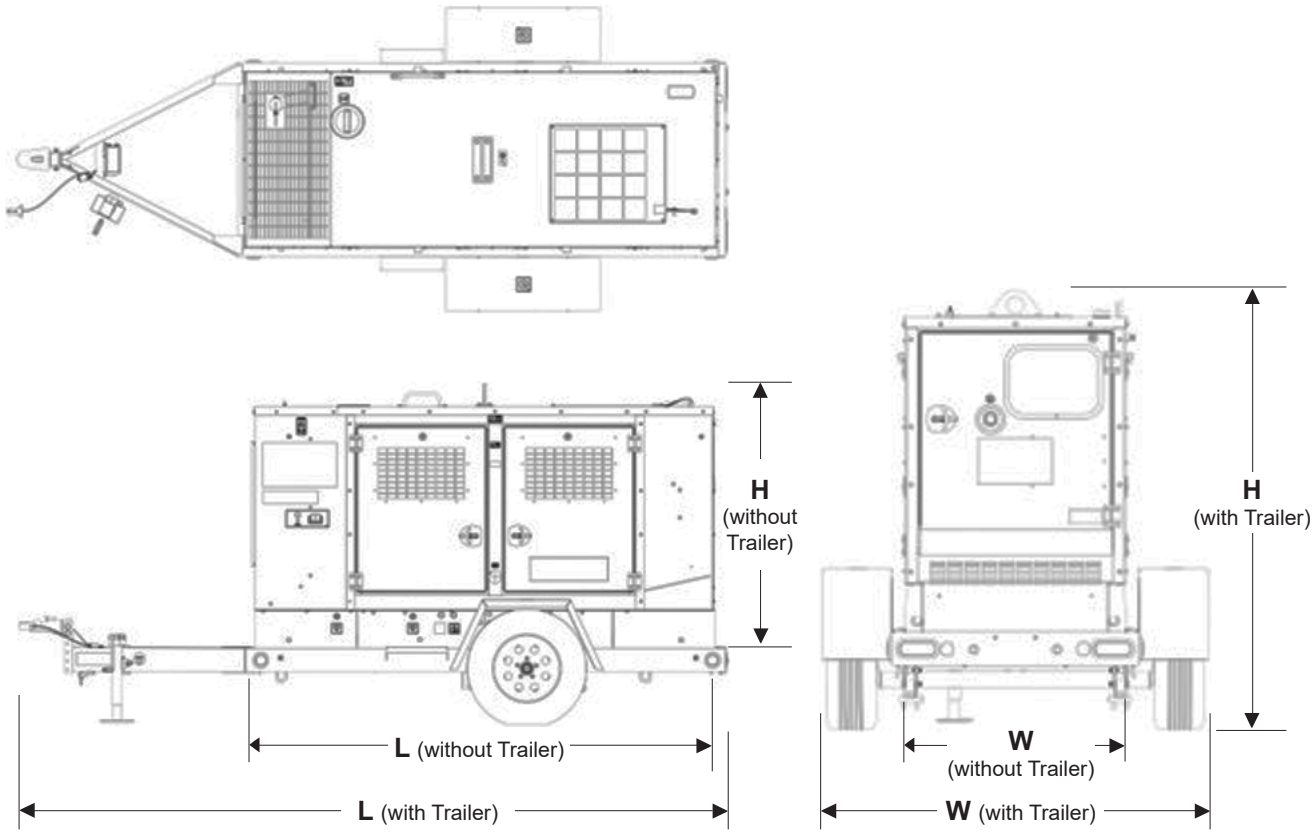
Cat Generator Set – 1800 rpm/60 Hz	Units	Prime
Power Rating	kW (kVA)	46 (57.5)
Performance Specification		
Lubricating System Capacity oil	L (gal)	9 (2.38)
Fuel System Fuel consumption — 100% Load 75% Load 50% Load Fuel tank capacity	L/hr (gal/hr) L/hr (gal/hr) L/hr (gal/hr) L (gal)	12.4 (3.3) 9.77 (2.6) 7.1 (1.9) 303 (80)
ISO Prime Running Time	Hours	>24
Cooling System Radiator system capacity including engine Heat rejected to coolant at rated power	L (U.S. gal) kW (Btu/min)	13.5 (3.57) 37.3 (2123)
Air Requirements Combustion air flow Radiator cooling air Generator cooling air	m^3/min (cfm) m^3/min (cfm) m^3/min (cfm)	3.8 (134) 79.4 (2805) 7.8 (275)
Noise Rating** with enclosure at 7 meters (23 feet)	dB(A)	67

**Package fuel consumption and sound levels are for reference only.

Dimensions and Weights

Model	Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	With Lube Oil & Coolant Kg (lb)	With Fuel, Lube Oil & Coolant Kg (lb)
XQ60 with trailer (electric brakes)	3980 (156.7)	1725 (67.9)	1947 (76.6)	1636 (3607)	1896 (4180)
XQ60 with trailer (hydraulic brakes)	4059 (159.8)	1725 (67.9)	1947 (76.6)	1641 (3618)	1901 (4191)
XQ60 without trailer	2705 (106.5)	1049 (41.3)	1658 (65.3)	1423 (3137)	1683 (3710)

General Layout

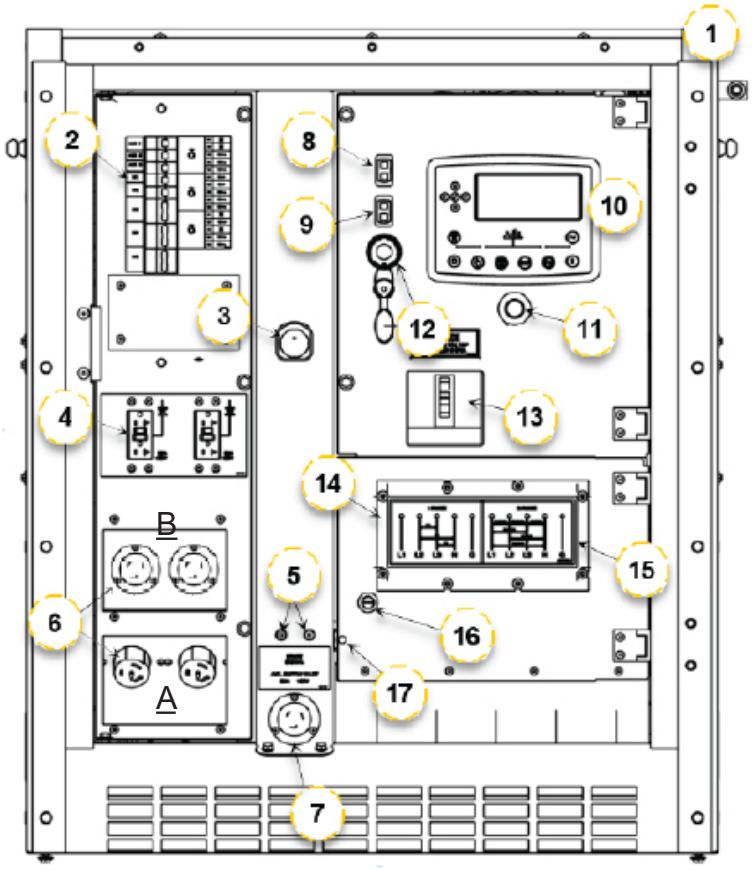


XQ60 GENERAL LAYOUT DRAWING

Cat® XQ60 Rental Generator Set

Control Panel and Power Distribution Layout

Item	Description
1	Steel enclosure with hinged, lockable door (not shown)
2	Circuit breakers for receptacles
3	Emergency stop
4	Single-phase GFCI duplex receptacles (20A @ 120V)
5	Two-wire remote start terminals
6A	2 x Single-phase, California-style twist-lock receptacles, 50A @ 208V phase-to-phase, 120V phase to neutral, or 240/120V single phase when in that voltage position
6B	2 x NEMA locking output receptacles (Optional)
7	1 x Single-phase NEMA locking input receptacle (30A @ 120V) to power optional block heater, battery charger, and generator space heater
8	HEST and DPF lamp
9	Glow plug lamp
10	XQCP digital generator set controller
11	Potentiometer for voltage adjustment
12	Cat ET service tool connector
13	Circuit breaker, 3-pole molded case, 175A
14	Main bus connection (bus bars attached to breaker) behind door and viewing window
15	Bus bar viewing window w/ phase diagram film
16	Quarter-turn door lock
17	Breaker trip door switch



Ratings Definition

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.

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