



# XQ 350 RENTAL



\*Shown with optional trailer

## STANDBY 350KW PRIME 320 kW POWER MODULE 50/60Hz Switchable Rating

Frequency	Voltage	Stand-by kW (kVA)	Prime kW (kVA)
60 Hz	480/277V	350 (437.5)	320 (400)
60 Hz	240/139V	350 (437.5)	320 (400)
60 Hz	208/120V	350 (437.5)	320 (400)
50 Hz	400/230V	308 (385)	280 (350)

### FEATURES

#### FUEL/EMISSIONS STRATEGY

- EPA and CARB Tier 4 Interim technology for Non-Road Mobile applications at all 50 and 60 Hz ratings

#### SINGLE-SOURCE SUPPLIER

- Factory designed and fully prototype tested with certified torsion vibration analysis available
- ISO 9001:2000 compliant facility

#### CAT® C13 TIER 4 INTERIM DIESEL ENGINE

- Utilizes ACERT™ Technology and Cat NO<sub>x</sub> Reduction System (NRS)
- Cat CEM exhaust after treatment
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- ECM electronic engine control

#### CAT EMCP 4.2 CONTROL PANEL

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

#### CAT SR4B SERIES GENERATOR

- Designed to match performance and output characteristics of Cat diesel engines
- Permanent magnet excitation
- Segregated AC/DC, low voltage accessory box provides single point access to accessory connections

#### CAT DIGITAL VOLTAGE REGULATOR (Cat DVR)

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

### ENCLOSURE

- Highly corrosion resistant 12 gauge sheet steel construction
- Two coat polyester powder-coated finish
- Six access doors for ease of maintenance
- Secure and safe design with safety glass control panel viewing window with lockable access door
- Fuel fill and battery can only be reached through lockable access doors
- Certified single point lifting eye and lifting points on the base frame

### DISTRIBUTION PANEL

- Switchable via link board from 480/277V 3 phase to 240/139V 3 phase (can be adjusted down to 208/120V 3 Phase)

### REAR CUSTOMER ACCESS

- Separate control panel and distribution panel access doors
- Hinged door over main bus connectors
- Emergency stop on panel
- Remote start/stop contacts

### REDUCED ENVIRONMENTAL IMPACT

- EPA Tier 4 Interim technology
- 110% spill containment of onboard engine fluids
- Meets 76 dB(A) at 7 m per SAE J1074

### RENTAL READY FEATURES

- Anti-condensation heater 110-120 VAC
- Coolant heater 110-120 VAC
- UL Listed battery charger
- Solar powered battery maintainer



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## FACTORY INSTALLED STANDARD EQUIPMENT

SYSTEM	STANDARD EQUIPMENT
<b>Air Inlet</b>	Air cleaner, two stage cyclonic/paper with dust cup and service indicator Turbocharger and air-to-air aftercooler
<b>Charging System</b>	UL/CSA listed 120 V, 20 Amp battery charger, shock mounted and enclosed in dust proof housing Charging alternator; 24V-45A, heavy duty with integral regulator and belt guards
<b>Control Panel</b>	EMCP 4.2 genset mounted controller NEMA 2, IP23 dust proof enclosure, UL508 listed Idle/rated and 50/60Hz frequency switches Generator Protection features: 32, 32RV, 46, 50/51, 27/59, 81 O/U Metering display: voltage, current, frequency, power factor, kW, WHM, and kVAR Panel illumination lights and Emergency stop switch
<b>Cooling System</b>	Package mounted radiator with vertical air discharge provides 43° C ambient capability at prime +10% rating Blower fan, fan drive, fan guard and belt guards 120VAC coolant heater, fuse protected, thermostatically controlled, automatically disconnected on start-up Coolant drain line with internal brass ball control valve piped to base-frame Coolant sight gauge, level switch and shutdown 50% coolant antifreeze with corrosion inhibitor
<b>Distribution System</b>	NEMA 1 steel enclosure, separate hinged, lockable door with rust resistant pinned hinges Main bus connections with hinged load cover with Plexiglas window closed for operation Main circuit breaker 3-pole, 240/480V-1600A with 24V DC shunt trip wired to load door safety switch Current transformers, hard mounted Multiple duplex and twist-lock receptacles with individual circuit breakers Two wire remote start/stop terminals and 120 VAC shore power connection for rapid starting
<b>Enclosure</b>	Sound attenuating, 12 gauge sheet metal enclosure limits overall noise to 77 dB(A) @ 7m (23') Modular panel construction and one piece welded roof design with 2 degree pitch Interior walls and ceilings insulated with flame retardant, precision cut foam materials meeting NFPA220 Black stainless steel pad-lockable latches, doorkeepers on all doors and zinc die-cast hinges/grab handles Single point lifting Painted Cat power module white with Cat rental decals
<b>Engine</b>	EPA certified Tier 4 Interim Cat C13 ATAAC heavy duty diesel engine with ACERT technology and Electronic ADEM™ A4 controls
<b>Exhaust System</b>	Cat Clean Emissions Module and integrated silencer with flexible connectors, in separate compartment Axial flow cylindrical muffler included with CEM
<b>Fuel System</b>	520 gal (1970 L) double wall fuel tank, UL142, ULC, and Transport Canada certified, 27 hr runtime @ 75% prime +10% rating, internal fuel fill Fuel cooler, pressure gauge, primary fuel filter with integral water separator, and engine mounted secondary Switch operated, electric priming pump Auxiliary connections for customer supplied fuel transfer system with 6 way fuel transfer valve
<b>Generator</b>	SR4B 450 frame, three-phase, random wound, 12-lead design, permanent magnet excited, 0.750 pitch 240-480 volt link board built into distribution system provides either 480/277 volt or 240/139 volt Coastal insulation protection. Windings impregnated in a triple dip, thermo-setting moisture, oil and acid resisting polyester varnish. Heavy coat of anti-tracking varnish for additional protection. Cat digital voltage regulator (Cat DVR) with VAR/PF control, RFI suppression, exciter diode monitor 120VAC anti-condensation heater
<b>Lube System</b>	Pump, integral oil cooler, lube oil, filter, filler and dipstick, and oil sampling valve Open crankcase breather with 75% filter Oil drain line with internal brass ball valve routed to connection point accessible from exterior 500 hour oil change intervals
<b>Mounting System</b>	Generator set soft mounted to the heavy duty, fabricated steel base frame Skiddable steel base frame with tie down eyes contains integral fuel tank Provides 110% spill containment of all engine fluids
<b>Starting System</b>	Single electric starting motor, 24V Dual 12V (1400 CCA) maintenance free batteries with disconnect switch, battery rack, and cables UL listed, 120 volt single phase jacket water heater with thermostat and shut off valves
<b>General</b>	Canadian Standards Authority (CSA) certified Factory testing of standard generator set Full manufacturer's warranty, O&M manuals
	<b>OPTIONAL EQUIPMENT</b>
<b>Available Options</b>	Tandem axle trailer with electric brakes



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## TECHNICAL DATA

CAT GENERATOR	CAT DIESEL ENGINE
Frame Size .....SR4B – 450 Pitch ..... 0.750 No. of poles ..... 4 Excitation ..... Static regulated brushless PM excited Number of bearings..... Single bearing, close coupled Insulation..... Class H Temperature rise ..... 105° C Enclosure ..... Drip proof IP23 Overspeed capability – % of rated ..... 125% of rated Voltage regulator ..... 3 phase sensing with Volts-per-Hertz Voltage regulation..... Less than ± 1/2% voltage gain Adjustable to compensate for engine speed droop and line loss Wave form deviation ..... 3% Telephone Influence Factor (TIF)..... Less than 50 Harmonic Distortion (THD)..... Less than 5%	C13 ATAAC, I-6 4-stroke water cooled diesel Bore – mm (in)..... 130 mm (5.10 in) Stroke – mm (in) ..... 157 mm (6.20 in) Displacement – L (cu in) ..... 12.5 L (763 in <sup>3</sup> ) Compression ratio..... 17.0:1 Engine RPM ..... 1500-1800 Aspiration..... TA Aftercooler type ..... ATAAC Turbocharger ..... Single Fuel system ..... MEUIC Governor type ..... ADEM A4 Fuel..... Requires ULSD

Materials and specifications are subject to change without notice.

Generator Set Technical Data		50Hz	50 Hz	60Hz	60Hz
	Units	Standby	Prime	Standby	Prime
<b>Performance Specification</b>		EM0181	EM0180	EM0179	EM0178
<b>Power Rating</b>	kW (KVA)	308 (385)	280 (350)	350 (437.5)	320 (400)
<b>Lubricating System</b>					
Oil pan capacity	L (gal)	37 (19.5)	37 (19.5)	37 (19.5)	37 (19.5)
<b>Fuel System</b>					
Fuel consumption					
100% Load	L/hr (gal/hr)	82.1 (21.6)	75.3 (19.8)	95.7 (25.1)	88.0 (23.1)
75% Load	L/hr (gal/hr)	62.4 (16.4)	57.3 (15.1)	73.4 (19.2)	67.9 (17.7)
50% Load	L/hr (gal/hr)	43.9 (11.5)	40.2 (10.6)	52.3 (13.6)	48.6 (12.7)
Fuel Tank Capacity	L (gal)	1970 (520)	1970 (520)	1970 (520)	1970 (520)
Running time @ 75% rating	Hr	31	34	26	29
<b>Cooling System</b>					
Ambient Capability	°C (°F)	43	43	43	43
Engine & Radiator coolant capacity	L (gal)	61 (16.2)	61 (16.2)	61 (16.2)	61 (16.2)
Engine coolant capacity	L (gal)	19 (5.0)	19 (5.0)	19 (5.0)	19 (5.0)
<b>Air Requirements</b>					
Combustion air flow	m <sup>3</sup> /min (cfm)	19.7 (693.2)	18.3 (646.1)	(828.3)	(803.3)
<b>Exhaust System</b>					
Exhaust flow at rated – dry exhaust	m <sup>3</sup> /min (cfm)	13.8 (485.1)	13.1 (460.3)	16.0 (565.7)	15.9 (558.9)
Exhaust temperature at rated kW	°C (°F)	496.4 (924.7)	488.9 (911.8)	473.4 (880)	454.1 (846.9)
<b>Noise Rating (with enclosure)*</b>					
@ 7 meters (23 feet) @ 75% of rating	dB(A)	73	73	74	74
@ 7 meters (23 feet) @ 100% of rating	dB(A)	74	74	76	75
<b>Emissions (Not to exceed data)</b>					
NO <sub>x</sub>	g/hp-hr	1.42	1.28	1.55	1.56
CO	g/hp-hr	0.08	0.07	0.08	0.07
HC	g/hp-hr	0.01	0.01	0.02	0.02
PM	g/hp-hr	0.02	0.02	0.01	0.02

Model	Length	Width	Height		Weight kg (lb)
XQ350	mm (in)	mm (in)	mm (in)		
				<b>Lube Oil &amp; Coolant – Empty Fuel Tank</b>	6,667 (14,700)
				<b>Fuel Tank 200 Gallons of Fuel</b>	7,315 (16,130)
<b>XQ350 w/o chassis</b>	5,080 (208)	1,524 (60)	2,642 (104)	<b>Full Fuel Tank</b>	8,571 (18,900)
<b>XQ350 w/ chassis</b>	7,206 (283)	2,591 (102)	3,204 (126)	<b>Chassis Weight Addition</b>	1,465 (3,230)

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## STANDARD FEATURES

### FEATURES

- NEMA 2, IP23 dust proof enclosure with hinged lockable door and viewing window
- EMCP 4.2 display
- Panel light on/off switch
- Emergency stop pushbutton
- Lamp test/reset pushbutton
- Voltage adjust potentiometer
- Alarm and shutdown indicators
- Idle /rated switch
- Regeneration alarm indications for DPF 80% soot level
- and high exhaust temperature
- 50/60 Hz frequency adjustment
- Fuel level display
- Convenient service access for Cat Dealers (service tools not included).

### EMCP 4.2 ENGINE OPERATOR INTERFACE

- Controls
  - Run/Auto/Stop
  - Speed Adjust
  - Voltage Adjust
  - Emergency Stop
  - Cycle crank
  - Remote start/stop
- Engine Monitoring:
  - RPM
  - Operating hours
  - Coolant Temperature
  - Crank attempt and successful start counter
  - DC Volts
  - Oil pressure
  - Oil Temperature
- Generator Monitoring:
  - L-L volts, L-N volts, Current (phase)
  - Average volts, Amps, Frequency
  - kW, kVA, kVAR, kW-hr
  - Power Factor (Average, Phase)
  - kW-hr, kVA-hr (total)
  - Excitation voltage and current (with CDVR)
- Shutdowns with common indicating light for:
  - Low oil pressure
  - High Coolant Temp
  - Low Coolant level
  - Failure to Start (Overcrank)
  - Overspeed
  - High Oil Temperature
  - Emergency stop

### EMCP 4.2 GENERATOR PROTECTIVE RELAYING

Generator protective features provided by EMCP 4.2

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under frequency (81 O/U)
- Reverse Power (kW) (32)
- Reverse Reactive Power (kVAR) (32RV)
- Over current (50/51)



### DISTRIBUTION PANEL

- Separate load and control sections
- Access using a hinged padlock-able door
- Main busbar with hinged cover door with a clear Plexiglas window.
- Customer convenience power receptacles protected by miniature circuit breaker:
  - 1 – 240V, 50A California style Twist Lock.
  - 1 – 240V, 20A Twist Lock.
  - 2 – 120V, 20A Ground Fault Interrupters.
  - 2 – 120V, 15A Duplex Receptacles with GFI.

### CIRCUIT BREAKER

- Includes DC shunt trip coil activated on any monitored engine or electrical fault,
- 100 KA-interrupting capacity at 1480 VAC.
- Under-voltage release
- 1600A fixed type, 4 poles, generator set mounted

### LINK BOARD ASSEMBLY

- High/low voltage output reconnection via movable link board
- Includes switch providing voltage setting input to the EMCP 4.2 for automatic set point configuration



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## RATING DEFINITIONS AND CONDITIONS

### Meets or Exceeds International Specifications:

CSA 22.0 No. 100, IEC60034-22, ISO3046, ISO8528, 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 35o API {16oC (60oF)} gravity having an LHV of 42780 kJ/kg (18390 Btu/lb) when used at 29oC (85oF) and weighing 838.9 g/liter (7.001 /b/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 and consult your Cat Dealer.

**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).

**Ratings** are based on SAE J1349 standard conditions. These ratings also apply at ISO0346 standard conditions.

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

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