

Cat® XQP500 Rental Generator Set



**Prime 500 kVA (400 kW)
50/60 Hz Switchable
R96 EU Stage IIIA
Equivalent**

Image shown may not reflect actual configuration.

Specifications

Frequency Hz	Speed (rpm)	Voltage	Prime		Output Amps (A)	Breaker Rating (A)
			kVA	ekW		
50	1500	415 / 240V	500	400	696	800
		400 / 230V	500	400	722	
		380 / 220V	500	400	760	
60	1800	480 / 277V	463	370	557	800
		440 / 254V	463	370	608	
		380 / 220V	463	370	703	
		240 / 139V	463	370	1114	1600
		220 / 127V	463	370	1215	

Cat® C15 ACERT™ Diesel Engine	Metric	Imperial (English)
Configuration	Inline 6-cylinder, 4-Stroke-Cycle, Water Cooled, Diesel	
Bore	137 mm	5.39 in
Stroke	171 mm	6.73 in
Displacement	15.2 L	928 in ³
Aspiration	Turbocharged-Aftercooled (TA)	
Compression Ratio	16.8:1	
Engine rpm	1500 – 1800	
Aftercooler Type	ATAAC	
Turbocharger	Single	
Fuel System	Direct Injection, MEUI™	
Governor Type	Electronic ECM controlled (A4:E2)	
Fuel	See Fuel Specification Table	

Benefits & Features

Rental-ready Features

- Dual wall fuel tank
- Forklift pockets
- Robust skid plate base
- Externally certified single point lift
- Coolant and oil drains piped to baseframe
- Externally certified spark arrest silencer
- 50/60 Hz frequency switch via terminal link
- EMC certified
- Robust busbar connection for lugged cable connection
- Sound isolated rear mounted control panel
- AC protected by limit switch on distribution door

Fuel/Emissions Strategy

- R96 EU Stage IIIA Equivalent

Single-source Supplier

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

Cat C15 Diesel Engine

- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic ECM control

Cat EMCP 4.2B Control Panel

- Fully featured power metering, protective relaying, engine/generator control and monitoring
- Simple, user-friendly interface and navigation
- Single point interface for voltage and frequency adjustment

Optional Control Panels

- Cat EMCP 4.4, DEIF® AGC-4 and ComAp® IntelliGen NT
- Synchronising capabilities
- Motorised breaker
- Ethernet remote monitoring
- Large screen interface

Available Options

- Synchronising control panel and motorised breaker
- 220-240V 3-phase 60Hz configuration available with appropriately sized breaker and power cables
- Anti condensation heater 230V AC
- Coolant heater 230V AC
- 24V battery charger
- Permanent Magnet Generator (PMG)
- Earth leakage detection
- Lube oil sump pump

Cat LC6100 Generator

- Designed to match performance and output characteristics of Cat diesel engines
- Coastal insulation protection
- Self (Shunt) excitation

Integrated Voltage Regulator (IVR)

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

Enclosure

- Galvanized sheet steel construction
- Two coat polyester powder-coated finish
- 5 access doors for improved service access
- Secure design with safety glass control panel viewing window and padlockable or keylock access doors
- Fuel fill, battery and controls accessible only through lockable access doors

Environmental Considerations

- Dual wall base tank with 110% spill containment
- Bund Level alarm
- Low noise enclosure
- Inboard mounted 3-way valve for external fuel connection

Cat Connect

- Fleet management and asset tracking*

*Subject to local certifications.

Standard Equipment

Generator

- LC6114F frame; 3-phase random wound, 12 lead, self excited, 2/3 pitch
- Coastal insulation protection (CIP)

Cat C15 ACERT™ Diesel Engine

- Turbocharged, air-to-air aftercooler
- Electronic ECM control

Air Filter

- Air cleaner, cyclonic/paper with dust cup and service indicator

Cooling System

- Variable speed fan
- Package mounted radiator with vertical air discharge
- High ambient performance
- Fully guarded pusher fan
- Low coolant level shutdown
- Coolant piped to base via radiator-mounted ball valve
- 50% glycol mix with corrosion inhibitor

Charging System

- Charging alternator; 24V, heavy duty with integral regulator and belt guards

Starting System

- Single 24V electric starting motor
- 2 x 12V 950CCA maintenance-free battery with padlockable single-pole isolator switch

Fuel System

- Dual wall fuel tank
- Internal fuel fill
- Engine mounted primary and secondary fuel filter
 - o Primary filter (10 micron) with integral water separator (330 ml capacity)
 - o Secondary filter (4 micron)
- Manual push button priming pump
- Auxiliary connections for remote supply with 3-way valve
- 3-way valve internally mounted within banded area
- Mechanical fuel gauge
- Electronic fuel gauge with panel display, low fuel level warning and shutdown

Control Panel

- EMCP 4.2B set mounted digital controller
- 50/60 Hz frequency switch (via terminal link)
- IVR with EM10 excitation module
- Panel & enclosure mounted emergency stop

Distribution System

- Separate robust steel enclosures for control & distribution sections
- Distribution door protected with 24V DC shunt trip safety switch
- 4 pole, 800A main circuit breaker
- Two-wire remote start/stop terminals and AC aux power connection for rapid starting

Mounting System

- Heavy duty steel baseframe with integral fuel tank (dual wall)
- Provides 110% spill containment including all on-board fluids
- Forklift pockets
- Generator set soft mounted using captive vibration mounts

Enclosure

- Sound attenuating, galvanised sheet steel enclosure with exceptional noise reduction performance
- Interior walls, ceilings and ducts insulated with precision cut noise insulating materials
- Sealed quarter-turn compression latches with key or padlock capabilities
- External side-mounted dual point lifting frame for improved hook access
- Powder coated with Cat Rental Power decals

Exhaust System

- Integrated certified spark arresting silencer with flexible connectors
- Outlet box mounted with vertical discharge

Lube Oil System

- On-engine primary and secondary oil filters, dipstick and oil filler
- Open crankcase breather with fumes disposal container and drain point
- Oil piped to edge of baseframe with internally mounted ball valve
- 500 hour oil change requirement

General

- Factory Tested
- Full manufacturer's warranty, O&M manuals

Fuel Specifications

Specification Standard	Grade Class	Fuel Description
EN 590	Grade A to F & Class 0 to 4	European automotive fuel (DERV)
ASTM D975	1-D S15	U.S. special purpose light middle distillate
		15 ppm sulphur
ASTM D975	2-D S15	U.S. special purpose light middle distillate
		15 ppm sulphur
JIS K2204	No. 1	Japanese automotive diesel. Different classes correspond to season and district where used
	No. 2	
	No. 3	
	Special No. 3	
BS 2869	Class A2	Fuel oil for agriculture and industrial engines (red diesel)
MIL-DTL-83133 NATO F34	JP-8	Aviation kerosene fuels – acceptable when used with appropriate lubricity additive, and must meet minimum requirements of Caterpillar Specification for Diesel Fuel. The lubricity of these fuels must not exceed wear scar diameter of 0.52 mm (0.02047 in) as per ISO 12156-1
MIL-DTL-83133 NATO F35		
MIL-DTL-5624 NATO F44	JP-5	
MIL-DTL-38219 (USAF)	JP-7	
NATO XF63		
ASTM D1655	JET A	
	JET A1	
B5-B7		Blend of biodiesel meeting EN 14214 or ASTM D6751 with EN 590 or ASTM D975 standard mineral diesel fuels.
B7-B20		

Technical Data

Cat Generator	
Frame size	LC6114F
Pitch	2/3
No. of poles	4
Excitation	Static regulated, brushless, self excited
Number of bearings	Single bearing, close coupled
Insulation	Class H
Temperature rise	125/40°C
Enclosure	Drip proof IP23
Overspeed capability — % of rated	25%
Voltage regulator	3-phase sensing with adjustable volts per hertz
Voltage regulation	Less than ± 0.5%
Wave form deviation	
Telephone Influence Factor (TIF)	Less than 2%
Harmonic Distortion (THD)	Less than 2%

Cat Generator Set			
	TMI Performance No. Units	Prime – 50 Hz EM0430	Prime – 50 Hz EM1246
Power Rating	kVA (kW)	500 (400)	525 (420)
Performance Specification			
Lubricating System			
Capacity oil	L (gal)	53 (14)	53 (14)
Fuel System			
Fuel consumption — 100% Load	L/hr (gal/hr)	110.2 (29.1)	121 (32)
75% Load	L/hr (gal/hr)	86.8 (23)	99.7 (26.3)
50% Load	L/hr (gal/hr)	62 (16.4)	69.2 (18.3)
Fuel tank capacity	L (gal)	965 (255)	965 (255)
Running time @ 75% rating	Hr	11.1	9.7
Cooling System			
Ambient capability	°C (°F)	50 (122)	35 (95) @ 90%
Engine & radiator coolant capacity	L (gal)	—	—
Engine coolant capacity	L (gal)	—	—
Air Requirements			
Combustion air flow	m³/min (cfm)	35 (1236)	35 (1236)
Exhaust System			
Exhaust flow at rated — dry exhaust	m³/min (cfm)	30.7 (1084)	35.4 (1250)
Exhaust temperature at rated kW	°C (°F)	471 (880)	459 (858.2)
Noise Rating* (with enclosure)*			
Sound Power*			
@ 7 meters @ 75% load	dB(A)	97	100
@ 7 meters @ 100% load	dB(A)	68.1	69.9
@ 1 meter @ 75% load	dB(A)	69.9	71.5
@ 1 meter @ 75% load	dB(A)	77.5	79.8
@ 1 meter @ 100% load	dB(A)	79.7	81.3
Emissions data at 100% Load**			
NOx	g/hp-hr	3.24	3.76
CO	g/hp-hr	0.59	0.81
HC	g/hp-hr	0.03	0.03
PM	g/hp-hr	0.03	0.07

*Guaranteed sound power as per 2000/14/EC.

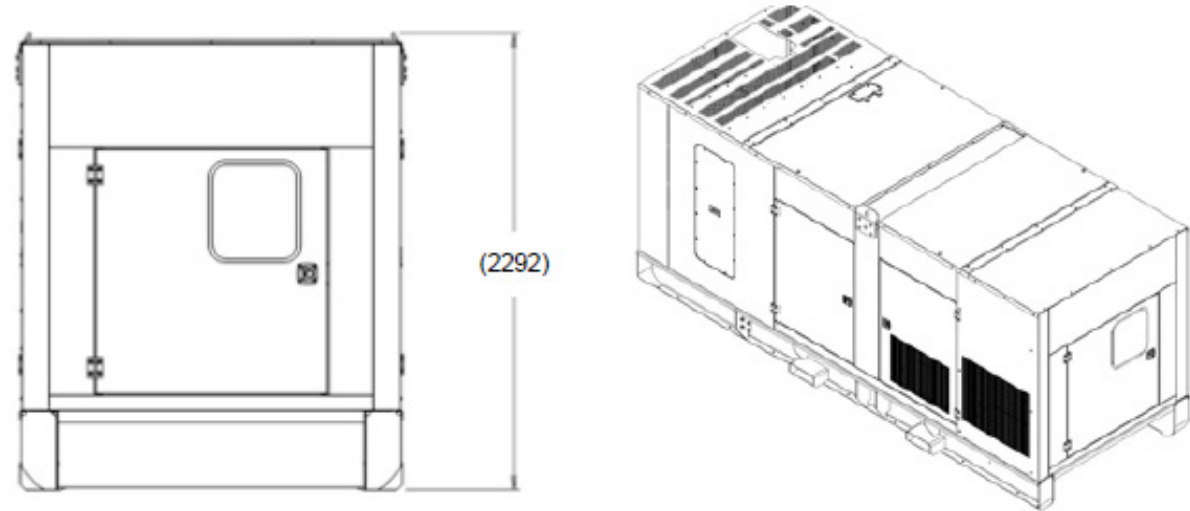
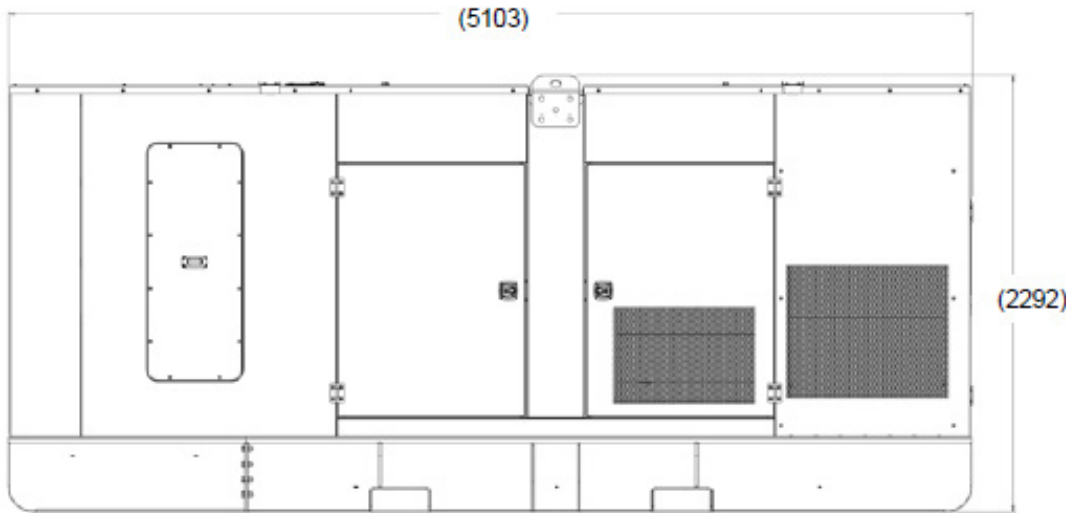
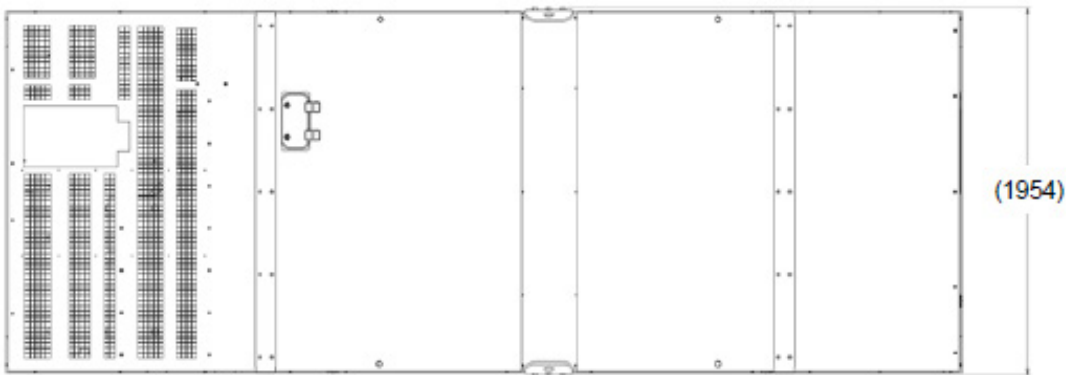
**For full Engine & Emissions data please refer to TMI using the engine performance no.

Dimensions and Weights

	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)
Generator Set	5103 (200.9)	1954 (77)	2292 (90)	5977 (13176)	6879 (15165)

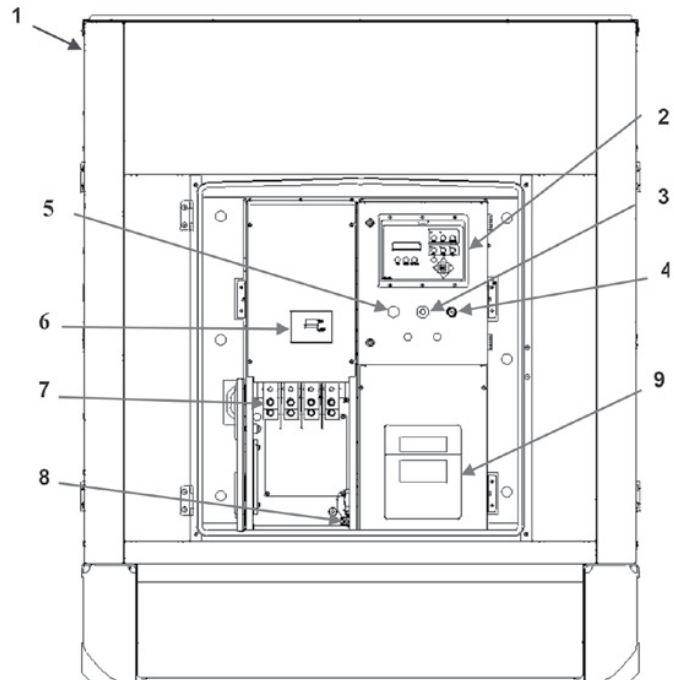
Layout for General Dimensions

Dimensions in millimeters



Control Panel and Power Distribution Layout

Item	Description
1	Steel enclosure with hinged, lockable door (not shown)
2	EMCP 4.2B digital genset controller
3	Emergency Stop button
4	Alarm
5	Service tool connector
6	Circuit breaker. 4-pole molded case, 800A
7	Main bus connection (bus bars with 14 mm holes)
8	Micro safety switch for bus bar door
9	Manual holder



Ratings Definition

Designed to Meet Specifications: ISO 8528, EN 12601, EN 60204-1, ISO 3046, IEC 60034.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

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 kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

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 lbs/U.S. gal).

Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding low sulfur fuel and biodiesel capability, please consult your Cat dealer.

www.cat.com/electricpower

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