

Cat® XQP310 Rental Generator Set



Prime 310 kVA (248 kW)
50/60 Hz Switchable
EU Stage V

Image shown may not reflect actual configuration.

Specifications

Frequency Hz	Speed (rpm)	Voltage	Prime		Output Amps (A)	Breaker Rating (A)
			kVA	kW		
50	1500	415 / 240V	310	248	431	630
		400 / 230V	310	248	447	
		380 / 220V	310	248	471	
60	1800	480 / 277V	310	248	373	630
		440 / 254V	310	248	407	
		380 / 220V	310	248	471	
		240 / 139V	N/A	N/A	N/A	N/A
		220 / 127V	N/A	N/A	N/A	

Cat® C9.3B Diesel Engine	Metric	Imperial (English)
Configuration	Inline 6-cylinder, 4-Stroke-Cycle, Water Cooled, Diesel	
Bore	115 mm	4.53 in
Stroke	149 mm	5.87 in
Displacement	9.3 L	567.5 in ³
Aspiration	Turbocharged-Aftercooled (TA)	
Compression Ratio	17.0:1	
Engine rpm	1500 – 1800	
Aftercooler Type	ATAAC	
Turbocharger	Single	
Fuel System	Direct Injection	
Governor Type	Electronic ECM controlled (A6E2)	
Fuel	See Fuel Specification Table	

Benefits & Features

Rental-ready Features

- Dual wall tank base with drag / tie down points and robust skid plate
- Forklift pockets
- Externally certified single point lift
- Certified spark arrest system
- 50/60 Hz frequency switch via terminal link
- EMC certified
- Robust busbar connection for lugged cable connection
- AC protected by limit switch on distribution door

Fuel/Emissions Strategy

- EU Stage V

Single-source Supplier

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

Cat® C9.3B Diesel Engine

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

After Treatment

- Diesel Exhaust Fluid (DEF) Tank located in discharge box, accessible through lockable access door
- DEF tank capacity is sufficient to last more than 16 hrs @ 50 Hz and 15 hrs @ 60 Hz when fully filled

XQCP 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 Panel

- ComAp IntelliGen NTC, Deepsea 8620, DEIF AGC-4.
- Synchronising capabilities (except XQCP/Deepsea 7320)
- Motorised breaker (except XQCP/Deepsea 7320)
- Ethernet remote monitoring (except XQCP/Deepsea 7320)

Available Options

- CE socket box with integrated MCB & RCBO protection
- Synchronising control panel and motorised breaker
- Anti condensation heater 230V AC
- Coolant heater 230V AC
- Permanent Magnet Generator (PMG)
- Earth leakage detection
- Lube oil sump pump
- Fuel Option Pack – Inboard mounted 3-way valve for external fuel connection, electronic fuel gauge and Bund Level Sender
- Battery option – 2 x 12V 950CCA maintenance-free CAT Batteries
- Battery Isolator – Single pole (padlockable)
- 24V battery charger
- Drains option Pack – Oil and coolant drains piped to baseframe

Cat LC5100 Generator

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

Automatic Voltage Regulator (AVR)

- Three-phase sensing
- Adjustable Volts-per-Hertz regulation
- Provides precise control, excellent block loading, and constant voltage in the normal operating range
- AVR450T comes with DEIF, Comap, DSE8620 panel selection

Enclosure

- Galvanized sheet steel construction
- Two coat polyester powder-coated finish
- 6 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

- 110% spill containment of all on-board engine fluids and bund level alarm
- Low noise enclosure

Cat Connect

- Fleet management and asset tracking*

*Subject to local certifications

Standard Equipment

Generator

- LC5114N frame; 3-phase random wound, 12 lead, self-excited, 2/3 pitch
- Coastal insulation protection (CIP)

Cat® C9.3B Diesel Engine

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

After Treatment

- Engine Mounted Clean Emissions Module (CEM)
- Diesel Exhaust Fluid (DEF) Tank located in discharge box, accessible through lockable access door

Air Filter

- High Efficiency two stage air cleaner, with 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
- 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

Fuel System

- 12 hr dual wall fuel tank (based on 75% Prime load)
- Internal fuel fill
- Engine mounted primary and secondary fuel filter
 - o Primary filter (10 micron) with integral water separator (330ml capacity)
 - o Secondary filter (4 micron)
- Automatic onboard priming pump
- Mechanical fuel gauge

Control Panel

- XQCP set mounted digital controller
- 50/60 Hz frequency switch (via terminal link)
- Automatic Voltage Regulator included
- 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, 630A 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
- Skid plates with drag points
- 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

- Certified spark arresting system
- Outlet box mounted with vertical discharge

Lube Oil System

- On-engine primary and secondary oil filters, dipstick and oil filler
- Closed crankcase breather
- 500 hour oil change requirement

General

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

Fuel Specifications

Specification Standard	Grade Class	Fuel Description
EU Stage V specifies Ultra Low Sulphur Diesel		Ultra Low Sulphur Diesel Only (ULSD). ULSD with a maximum fuel sulphur level of either 15 or 20 ppm¹ is required in all diesel applications using a diesel particulate filter (DPF and DOC). Bio-diesel fuel may be used up to B20 (80% standard ULSD with 20% bio-fuel dilution by volume), provided an appropriate approved additive is used.

Oil Specifications

Specification Standard	Oil Description
EU Stage V Recommended oil 15W-40 CK-4 1E1867F	Minimum spec 15W-40 CJ-4 1E1867E

DEF Specifications

Specification Standard	DEF Description
EU Stage V DEF Requirements ISO 22241-1	Diesel Exhaust Fluid

Technical Data

Cat® Generator	
Frame size	LC5114N
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	Less than 2%
Telephone Influence Factor (TIF)	
Harmonic Distortion (THD)	

Cat Generator Set			
	TMI Performance No. Units	Prime — 50 Hz EM4733	Prime — 60 Hz EM4735
Power Rating	kVA (kW)	310 (248)	310 (248)
Performance Specification			
Lubricating System			
Oil pan capacity	L (gal)	30 (7.9)	
Fuel System			
Fuel consumption — 100% Load	L/hr (gal/hr)	62.6 (16.5)	64.7 (17.1)
75% Load	L/hr (gal/hr)	46.9 (12.4)	48.9 (12.9)
50% Load	L/hr (gal/hr)	32.9 (8.7)	34.8 (9.2)
Fuel tank capacity	L (gal)	667 (176)	667 (176)
Running time @ 75% rating	Hr	14.2	13.6
After Treatment*			
DEF Tank Capacity	L (gal)	65.6 (17.3)	
Cooling System			
Ambient capability	°C (°F)	36 (97)	47 (117)
Engine & radiator coolant capacity	L (gal)	37.9 (10)	37.9 (10)
Engine coolant capacity	L (gal)	20.3 (5.4)	20.3 (5.4)
Air Requirements			
Combustion air flow	m³/min (cf m)	19 (671)	24 (847.5)
Exhaust System			
Exhaust flow at rated — dry exhaust	m³/min (cf m)	39 (1377)	45 (1589)
Exhaust temperature at rated kW	°C (°F)	434 (813)	413 (775)

Technical Data (continued)

Cat Generator Set			
	TMI Performance No. Units	Prime — 50 Hz EM4733	Prime — 60 Hz EM4735
Noise Rating (with enclosure) **			
Sound Power*	dB(A)	94	97
@ 7 meters @ 75% load	dB(A)	65.4	68.0
@ 7 meters @ 100% load	dB(A)	67.2	70.4
@ 1 meter @ 75% load	dB(A)	74.5	76.5
@ 1 meter @ 100% load	dB(A)	75.8	78.4
Emissions data at 100% Load			
NOx	g/hp-hr	0.05	0.07
CO	g/hp-hr	0.05	0.07
HC	g/hp-hr	0.01	0.02
PM	g/hp-hr	0.00	0.00

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

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

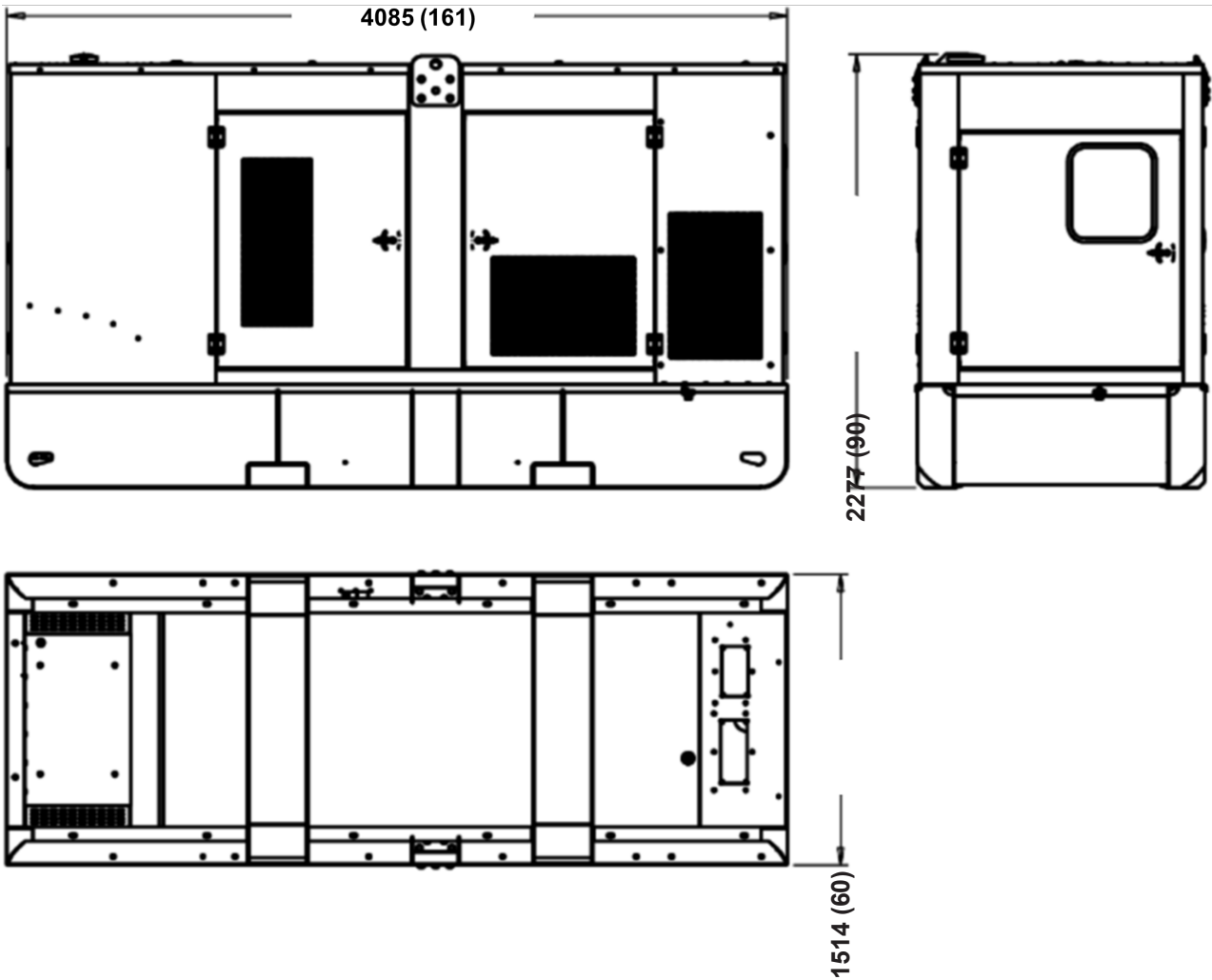
Weights & Dimensions

Length (L) mm (in)	Width (W) mm (in)	Height (H) mm (in)	With Lube Oil & Coolant Kg (lb)	With Fuel (Full Tank), Lube Oil & Coolant Kg (lb)
4 085 (161)	1 514 (60)	2226 (87.6)	4103 (9046)	4784 (10547)

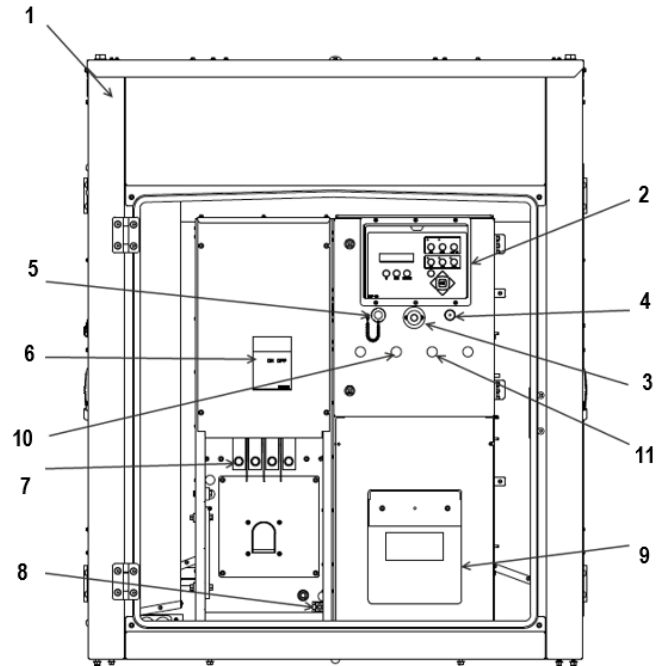
Socket Box Option						
Sockets	15A	16A	32A	50A	63A	125A
CEE Form*	–	2x1ph+N+E	2x3ph+N+E	–	1x3ph+N+E	1x3ph+N+E

Layout for General Dimensions

Dimensions in millimeters (inches)



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, 630A
7	Main bus connection (bus bars with 14 mm holes)
8	Micro safety switch for bus bar door
9	Manual holder
10	Emission system failure lamp
11	Low DEF level lamp



Rating Definitions and Conditions

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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