
DIESEL GENERATOR SET



Image shown may not reflect actual package.

PRIME **455 ekW 569 kVA** **60 Hz 1800 rpm 480 Volts**

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FEATURES

FUEL/EMISSIONS STRATEGY

- EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response

UL 2200 / CSA – Optional

- UL 2200 Listed packages
- CSA Certified

Certain restrictions may apply.

Consult with your Cat® Dealer.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- The Cat S•O•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT C15 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic controlled governor

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- UL 1446 Recognized Class H insulation
- CSA Certified

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway
- Integrated Voltage Regulation

SEISMIC CERTIFICATION

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Disposable air filter	☐ Canister type, dual element ☐ Heavy duty air cleaner
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	☐ Industrial ☐ Residential / Critical
Fuel	• Primary fuel filter with integral water separator • Secondary fuel filters • Fuel priming pump	
Generator	• Matched to the performance and output characteristics of Cat engines • IP23 Protection	☐ Permanent magnet excitation (PMG) ☐ Anti-condensation space heater ☐ Internal excitation (IE) ☐ Coastal insulation protection
Power Termination	• Power terminal strips	☐ Circuit breakers – 100% rated assembly, UL Listed ☐ SUSE (Suitable for use as service equipment)
Control Panels	• EMCP 4.2	☐ EMCP 4.3 ☐ EMCP 4.4 ☐ Local and remote annunciator modules ☐ Remote monitoring software
Mounting	• Rubber vibration isolators	
Starting/Charging	• 24 volt starting motor & charging alternator • Batteries	☐ Battery chargers ☐ Oversize batteries ☐ Jacket water heater
General	• Paint - Caterpillar Yellow except rails and radiators gloss black • Narrow skid base	The following options are based on regional and product configuration: ☐ Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, IBC 2012, CBC 2007, CBC 2010 ☐ UL 2200 Listed package ☐ CSA Certified ☐ Wide skid base ☐ Sound attenuated enclosure ☐ Weather protective enclosure ☐ Integral dual wall UL Listed 8 hr fuel tank ☐ Sub-base dual wall UL Listed 24 hr fuel tank ☐ Sub-base dual wall UL Listed 48 hr fuel tank

SPECIFICATIONS

STANDARD CAT GENERATOR	
Frame size	LC6114F
Excitation	Self Excitation
Pitch	0.6667
Number of poles	4
Number of bearings	Single bearing
Number of leads	12
Insulation	UL 1446 Recognized Class H with tropicalization and antiabrasion
IP Rating	IP23
Alignment	Pilot shaft
Overspeed capability (%)	125
Wave form deviation (%)	2
Voltage regulator	Three phase sensing
Voltage regulation	+/- 0.25% (steady state)
– Consult your Cat dealer for other available voltages	
CAT DIESEL ENGINE	
C15 ATAAC, I-6, 4-Stroke Water-cooled Diesel	
Bore	137.20 mm (5.4 in)
Stroke	171.40 mm (6.75 in)
Displacement	15.20 L (927.56 in ³)
Compression ratio	16.1:1
Aspiration	Air-to-air aftercooled
Fuel system	MEUI
Governor type	Caterpillar ADEM control system

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- kW, kVA, kVAR, kW-hr, %kW, PF (4.2 only)

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32) (4.2 only)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51)

Communications:

- Four digital inputs (4.1)
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU) (4.2 only)
- Accessory module data link (4.2 only)
- Serial annunciator module data link (4.2 only)
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	DM8154	
EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)		
Generator Set Package Performance Genset power rating @ 0.8 pf Genset power rating with fan	568.75 kVA 455.0 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	125.7 L/hr 100.8 L/hr 88.9 L/hr	33.2 gal/hr 26.6 gal/hr 21.6 gal/hr
Cooling System¹ Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 788 m ³ /min 50.3L 20.8 L 29.5 L	0.48 in. water 27828 cfm 13.3 gal 5.5 gal 7.8 gal
Inlet Air Combustion air inlet flow rate	37.0 m ³ /min	1306.6 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	492.8°C 99.0 m ³ /min 152.4 mm 10.0 kPa	919.0°F 3496.2 cfm 6.0 in 40.2 in. water
Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	175 kW 455 kW 103 kW 85.0 kW 26.1 kW	9952 Btu/min 25876 Btu/min 5858 Btu/min 4834 Btu/min 1478.6 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature rise	1428 skV LC6114F 105°C	189°F
Lubrication System Sump refill with filter	60.0 L	15.9 gal
Emissions (Nominal)³ NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	5.59 g/hp-hr 0.41 g/hp-hr 0.01 g/hp-hr 0.024 g/hp-hr	

¹For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

²Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32. Some packages may have oversized generators with a different temperature rise and motor starting characteristics.

³Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77°F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33.

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

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

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DIMENSIONS

Package Dimensions		
Length	3361 mm	132.3 in
Width	1502 mm	59.1 in
Height	2127 mm	83.7 in

NOTE: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions.

Performance No.: DM8154

www.Cat-ElectricPower.com

Feature Code: C15DECF

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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.

Source: U.S. Sourced

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