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

Low Fuel consumption

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 diesel engine combines consistent performance and excellent fuel economy with minimum weight
- · Electronic engine control

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- UL 1446 Recognized Class H insulation

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

60 Hz 1800 rpm 480 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Air cleaner	
Cooling	Package mounted radiator	
Exhaust	Exhaust flange outlet	[] Industrial [] Residential [] Critical Mufflers
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 Load adjustment module provides engine relief upon load impact and improves laod acceptance and recovery time IP23 protection	[] Oversize and premium generators [] Permanent magnet excitation (PMG) [] Internal excited (IE) [] Anti-condensation space heaters
Power Termination	• Bus bar	[] Circuit breakers, UL listed [] Circuit breakers, IEC compliant
Control Panel	EMCP 4 Genset Controller	[] EMCP 4.2 [] EMCP 4.3 [] EMCP 4.4 [] Local and remote annuniciator modules [] Load share module [] Digital I/O module [] Remote monitoring software
Mounting	Rubber vibration isolators	
Starting/Charging	24 volt starting motor Batteries	[] Battery chargers [] Oversize batteries [] Jacket water heater [] Heavy duty starting system [] Charging alternator
General	Paint - Caterpillar Yellow except rails and radiators gloss black	The following options are based on regional and product configuration: [] Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 [] UL 2200 package [] EU Certificate of Conformance (CE) [] CSA Certification [] EEC Declaration of Conformity [] Narrow, wide or skid base [] Sound attenuated, weather protective or high ambient weather protective enclosures [] Single or dual wall integral fuel tanks [] Single or dual wall sub-base fuel tanks [] Integral & sub-base UL listed dual wall fuel tanks [] Automatic transfer switches (ATS)

60 Hz 1800 rpm 480 Volts



SPECIFICATIONS

CAT GENERATOR

Frame size	LC6114F
Excitation	Self Excitation
Pitch	0.6667
Number of poles	4
Number of bearings	Single bearing
Number of Leads	012
InsulationUL 1446 Recog	nized Class H with
tropicalization and antiabrasion - Consult your Caterpillar dealer for av	ailable voltages
IP Rating	Drip Proof IP23
Alignment	Pilot Shaft
Overspeed capability	125
Wave form Deviation (Line to Line)	2%
Voltage regulatorTh	ree phase sensing
Voltage regulationLess than +/-	1/2% (steady state)
Less than +/- ½% (w/ 3% speed change	·)

CAT DIESEL ENGINE

C15 ATAAC, I-6, 4-Stroke W	/ater-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 Ca	aterpillar 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)
- ekW, 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

60 Hz 1800 rpm 480 Volts



TECHNICAL DATA

Open Generator Set 1800 rpm/60 Hz/480 Volts	DM8164		
Low BSFC			
Generator Set Package Performance			
Genset Power rating @ 0.8 pf	568.75 kVA		
Genset Power rating with fan	455 ekW		
Fuel Consumption			
100% load with fan	117.3 L/hr	31.0 Gal/hr	
75% load with fan	90.4 L/hr	23.9 Gal/hr	
50% load with fan	64.6 L/hr	17.1 Gal/hr	
Cooling System ¹			
Air flow restriction (system)	0.12 kPa	0.48 in. water	
Air flow (max @ rated speed for radiator arrangement)	840 m³/min	29664 cfm	
Engine Coolant capacity with radiator/exp. tank	57.8 L	15.3 gal	
Engine coolant capacity	20.8 L	5.5 gal	
Radiator coolant capacity	37.0 L	9.8 gal	
Inlet Air			
Combustion air inlet flow rate	35.2 m³/min	1243.1 cfm	
Exhaust System			
Exhaust stack gas temperature	505.4 ° C	941.7 ° F	
Exhaust gas flow rate	94.2 m³/min	3326.6 cfm	
Exhaust flange size (internal diameter)	152.4 mm	6.0 in	
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water	
Heat Rejection			
Heat rejection to coolant (total)	180 kW	10237 Btu/min	
Heat rejection to exhaust (total)	436 kW	24795 Btu/min	
Heat rejection to atmosphere from engine	33 kW	1877 Btu/min	
Heat rejection to atmosphere from generator	26.0 kW	1478.6 Btu/min	
Alternator ²			
Motor starting capability @ 30% voltage dip	1428 skVA		
Frame	LC6114F		
Temperature Rise	105 ° C	189 ° F	
Lube System			
Sump refill with filter	60.0 L	15.9 gal	
Emissions (Nominal) ³			
NOx g/hp-hr	6.58 g/hp-hr		
CO g/hp-hr	.37 g/hp-hr		
HC g/hp-hr	.01 g/hp-hr		
PM g/hp-hr	.026 g/hp-hr		

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory. ² Generator 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.

3 Emissions 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.

60 Hz 1800 rpm 480 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

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	3775.1 mm	148.63 in		
Width	1110.0 mm	43.7 in		
Height	2091.0 mm	82.32 in		

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2781052).

Performance No.: DM8164

Feature Code: C15DE8Y

Gen. Arr. Number: 2351211

Source: U.S. Sourced

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