



Image shown may not reflect actual package.

MISSION CRITICAL

800 e kW 1000 kVA

60 Hz 1800rpm 480Volts

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 C27ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Four-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

CAT GENERATOR

- Designed to match the performance and output characteristics of Cat diesel engines
- Single point access to accessory connections
- 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

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Air cleaner	
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	<input type="checkbox"/> Exhaust 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	<input type="checkbox"/> Oversize and premium generators <input type="checkbox"/> Permanent magnet excitation (PMG) <input type="checkbox"/> Internal excited (IE) <input type="checkbox"/> Anti-condensation space heaters
Power Termination	• Bus bar	<input type="checkbox"/> Circuit breakers, UL listed <input type="checkbox"/> Circuit breakers, IEC compliant
Control Panel	• EMCP 4 Genset Controller	<input type="checkbox"/> EMCP 4.2 <input type="checkbox"/> EMCP 4.3 <input type="checkbox"/> EMCP 4.4 <input type="checkbox"/> Generator temperature monitoring and protection <input type="checkbox"/> Load share module <input type="checkbox"/> Digital I/O module <input type="checkbox"/> Remote monitoring software
Mounting		<input type="checkbox"/> Rubber vibration isolators
Starting/Charging		<input type="checkbox"/> Battery chargers <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Jacket water heater <input type="checkbox"/> Heavy duty starting system <input type="checkbox"/> Charging alternator
General	• Paint - Caterpillar Yellow except rails and radiators gloss black	The following options are based on regional and product configuration: <input type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 <input type="checkbox"/> EU Certificate of Conformance (CE) <input type="checkbox"/> UL 2200 package <input type="checkbox"/> CSA Certification <input type="checkbox"/> EEC Declaration of Conformity <input type="checkbox"/> Enclosures- sound attenuated, weather protective <input type="checkbox"/> Automatic transfer switches (ATS) <input type="checkbox"/> Integral & sub-base fuel tanks <input type="checkbox"/> Integral & sub-base UL listed dual wall fuel tanks

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SPECIFICATIONS

CAT GENERATOR

Frame size1296
Excitation Permanent Magnet
Pitch 0.6667
Number of poles4
Number of bearings Single bearing
Number of Leads012
Insulation UL 1446 Recognized Class H with
tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP RatingDrip Proof IP23
AlignmentPilot Shaft
Overspeed capability150
Wave form Deviation (Line to Line)Less than 5%
deviation
Voltage regulator.....3 Phase sensing with selectable
volts/Hz
Voltage regulationLess than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)

CAT DIESEL ENGINE

C27 TA, V-12, 4-Stroke Water-cooled Diesel
Bore 137.20 mm (5.4 in)
Stroke 152.40 mm (6.0 in)
Displacement27.03 L (1649.47 in³)
Compression Ratio 16.5:1
Aspiration TA
Fuel System MEUI
Governor Type ADEM™ A4

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

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)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51)

Communications:

- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- 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 - - 1800rpm/60 Hz/480 Volts		
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1000 kVA	
Genset Power rating with fan	800 ekW	
Fuel Consumption		
100% load with fan	213.3 L/hr	56.8 Gal/hr
75% load with fan	164.4 L/hr	43.5 Gal/hr
50% load with fan	117.3 L/hr	31.0 Gal/hr
Cooling System ¹		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Engine coolant capacity	55.0 L	14.5 gal
Inlet Air		
Combustion air inlet flow rate	58.2 m ³ /min	2055.3 cfm
Exhaust System		
Exhaust stack gas temperature	523.6 ° C	974.4 ° F
Exhaust gas flow rate	160.3 m ³ /min	5661.7 cfm
Exhaust flange size (internal diameter)	203 mm	8 in
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water
Heat Rejection		
Heat rejection to coolant (total)	350 kW	19909 Btu/min
Heat rejection to exhaust (total)	765 kW	43510 Btu/min
Heat rejection to aftercooler	140 kW	7966 Btu/min
Heat rejection to atmosphere from engine	105 kW	5950 Btu/min
Heat rejection to atmosphere from generator	56.5 kW	2857 Btu/min
Alternator ²		
Motor starting capability @ 30% voltage dip	2117 skVA	
Frame	1296	
Temperature Rise	150 ° C	270 ° F
Lube System		
Sump refill with filter	68.0 L	18.0 gal
Emissions (Nominal) ³		
NOx g/hp-hr	6.2 g/hp-hr	
CO g/hp-hr	.25 g/hp-hr	
HC g/hp-hr	.02 g/hp-hr	
PM g/hp-hr	.01 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 ambient per NEMA MG1-32. UL 2200 Listed 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.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards: AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

Mission Critical Standby - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the standby power rating. Typical peak demand up to 100% of standby rated ekW for 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. Fuel stop power in accordance with ISO3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown temperature.

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

Fuel Rates are based on fuel oil of 35° API (16° C or 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.).

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DIMENSIONS

Package Dimensions		
Length	4141.6mm	163.05in
Width	1823.3mm	71.78 in
Height	2210.5 mm	87.03 in

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

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Source: U.S. Sourced

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

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