DIESEL GENERATOR SET





Image shown may not reflect actual package.

STANDBY 750 ekW 938 kVA 60 Hz 1800 rpm 600 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® C27 ATAAC 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

60 Hz 1800 rpm 600 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Air cleaner	
Cooling	Package mounted radiator	
Exhaust	• Exhaust flange outlet	[] Exhaust mufflers (except Tier 4)
Fuel	Primary fuel filter with integral water separatorSecondary fuel filtersFuel 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 [] Generator temperature monitoring and protection [] Load share module [] Digital I/O module [] Remote monitoring software
Mounting		[] Rubber vibration isolators
Starting/Charging		[] Battery chargers [] Oversize batteries [] Jacket water heater [] Heavy duty starting system [] Charging alternator [] Air starting motor with control and silencer (3500 & C175 models only)
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 [] EU Certificate of Conformance (CE) [] UL 2200 package [] CSA Certification [] EEC Declaration of Conformity [] Enclosures- sound attenuated, weather protective [] Automatic transfer switches (ATS) [] Integral & sub-base fuel tanks [] Integral & sub-base UL listed dual wall fuel tanks

60 Hz 1800 rpm 600 Volts



SPECIFICATIONS

CAT GENERATOR

Frame size	596
Excitation	Self Excitation
Pitch	0.8667
Number of poles	4
Number of bearings	Single bearing
Number of Leads	006
InsulationUL 1446 Reco	gnized Class H with
tropicalization and antiabrasion - Consult your Caterpillar dealer for av	vailable voltages
IP Rating	Drip Proof IP22
Alignment	Pilot Shaft
Overspeed capability	150
Wave form Deviation (Line to Line)	Less than 5%
deviation Voltage regulator3 Phase sen	sing with selectible
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)
Displacement	27.03 L (1649.47 in ³)
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 1800 rpm/60 Hz/600 Volts		DM9072	
Low Fuel Consumption			
Generator Set Package Performance			
Genset Power rating @ 0.8 pf	937.5 kVA		
Genset Power rating with fan	750 ekW		
Fuel Consumption			
100% load with fan	200.3 L/hr	52.9 Gal/hr	
75% load with fan	154.4 L/hr	40.8 Gal/hr	
50% load with fan	111.2 L/hr	29.4 Gal/hr	
Cooling System ¹			
Air flow restriction (system)	0.12 kPa	0.48 in. water	
Air flow (max @ rated speed for radiator arrangement)	1138 m³/min	40188 cfm	
Engine Coolant capacity with radiator/exp. tank	160.0 L	42.3 gal	
Engine coolant capacity	55.0 L	14.5 gal	
Radiator coolant capacity	105.0 L	27.7 gal	
Inlet Air			
Combustion air inlet flow rate	55.0 m³/min	1942.3 cfm	
Exhaust System			
Exhaust stack gas temperature	515.9 ° C	960.6 ° F	
Exhaust gas flow rate	150.2 m³/min	5304.3 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)	334 kW	18995 Btu/min	
Heat rejection to exhaust (total)	713 kW	40548 Btu/min	
Heat rejection to aftercooler	121 kW	6881 Btu/min	
Heat rejection to atmosphere from engine	109 kW	6199 Btu/min	
Heat rejection to atmosphere from generator	37.0 kW	2104.2 Btu/min	
Alternator ²			
Motor starting capability @ 30% voltage dip	2228 skVA		
Frame	596		
Temperature Rise	130 ° C	234 ° F	
Lube System			
Sump refill with filter	68.0 L	18.0 gal	
Emissions (Nominal) ³			
NOx g/hp-hr	6.74 g/hp-hr		
CO g/hp-hr	.24 g/hp-hr		
HC g/hp-hr	.02 g/hp-hr		
PM g/hp-hr	.019 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

Standby - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

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.).

Additional Ratings may be available for specific customer requirements. Consult your Cat representative for details.

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DIMENSIONS

Package Dimensions				
Length	4670.9 mm	183.89 in		
Width	1904.6 mm	74.98 in		
Height	2080.5 mm	81.91 in		

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2774542).

Performance No.: DM9072

Feature Code: C27DE51

Gen. Arr. Number: 1366603

Source: U.S. Sourced

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