DIESEL GENERATOR SET





Image shown may not reflect actual package.

PRIME 320 ekW 400 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

UL 2200

 UL 2200 listed packages available. 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

COMPLETE, READY-TO-RUN SYSTEM

- Fully configured generator set
- Full range of attachments and options available

ENCLOSURES (optional)

· Weather protective and sound attenuated

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® 3406C TA DIESEL ENGINE

- High efficiency, four-stroke-cycle engine designed for thousands of trouble-free hours of operation
- Field-proven in thousands of applications

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	Light duty air cleaner	[] Regular duty canister style, single stage with service indicator [] Dual element [] Heavy-duty and Muffler [] Air Inlet Shut-off
Cooling	 Coolant drain line with valve Fan and belt guards Radiator with guard Coolant drain line with valve Fan and belt guards Cat® Extended Life Coolant* Coolant level sight gauge 	[] Low coolant level shutdown [] Duct flange
Exhaust	Stainless steel exhaust flex ANSI style outlet flange, gasket, bolts and mating weld flange; shipped loose	[] 10 DBA Industrial muffler [] 25 DBA Residential muffler [] Critical muffler [] Flexible fitting [] Elbow kit [] Throughwall Installation kit [] Manifold and Turbo Guard
Fuel	Fuel priming pump Fuel pressure gauge Primary and secondary fuel filters Flexible fuel lines	[] Water separator [] Fuel level switch [] Flexible fuel lines [] Manual or auto fuel pumps [] Single wall tank bases
Generator	 Three phase sensing Class H insulation VR6 3-phase sensing voltage regulator with load adjustment module IP23 Protection Circuit Breaker IEC, 3-pole Segregated L.V. (AC/DC) wiring panel 	[] Anti-condensation heater [] Permanent Magnet excitation [] RFI Filter [] Coastal Protection [] Terminal strip connection [] Oversize generator [] Circuit breaker, UL and IEC Listed, 3 & 4-pole with shunt trip [] Multiple breaker capability [] Digital Voltage Regulator
Governor	Hydra-mechanical (3% speed regulation)	[] Electronic isochronous governor [] Load sharing module
Control Panels	EMCP 4.1 User Interface panel (UIP) - rear mount (standard) Emergency Stop Pushbutton	[] EMCP 4.2 [] Local & remote annunciator modules [] Load share module [] Discrete I/O module [] Generator temperature monitoring & protection
Lube	Lubricating oil and filterOil drain line with valve piped to edge of baseFumes disposal piped to front of radiator	[] Manual sump pump [] Oil temperature sensor
Mounting	Narrow integral fuel tank base (950L) Linear vibration isolators between base and engine-generator	[] Narrow base [] Wide Base [] Lifting arch [] Oil field skid base
Starting/Charging	 45 amp charging alternator 24 volt starting motor Batteries with rack and cables Safety shutoff protection 	[] Battery chargers (5 or 10 amp) [] Oversize batteries [] Battery disconnect switch [] Ether starting aid [] Jacket water heater
General		[] Enclosures - sound attenuated, weather protective [] EU Certificate of Conformance (CE)

60 Hz 1800 rpm 480 Volts



SPECIFICATIONS

CAT GENERATOR

Frame sizeLC6114	В
Excitation Self Excitatio	n
Pitch	7
Number of poles	4
Number of bearings Single bearing	g
Number of Leads01	2
InsulationUL 1446 Recognized Class H with	1
tropicalization and antiabrasion - Consult your Caterpillar dealer for available voltages	
IP RatingIP2	
AlignmentPilot Sha	ft
Overspeed capability12	5
Wave form Deviation (Line to Line)002.0	0
Voltage regulatorThree phase sensing	J
Voltage regulationLess than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)	
Telephone influence factorLess than 5	0
Harmonic DistortionLess than 59	6

CAT DIESEL ENGINE

3406C TA, I-6, 4-Stroke Water-cooled Diesel

5400C 1A, 1-0, 4-5troke Water-cooled Dieser				
Bore	137.20 mm (5.4 in)			
Stroke	165.10 mm (6.5 in)			
Displacement	14.64 L (893.39 in³)			
Compression Ratio	14.5:1			
Aspiration	TA			
Governor Type	Hydra-mechanical			

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	DM2270		
Low Fuel Consumption			
Generator Set Package Performance			
Genset Power rating @ 0.8 pf	400 kVA		
Genset Power rating with fan	320 ekW		
Fuel Consumption			
100% load with fan	91.6 L/hr	24.2 Gal/hr	
75% load with fan	69.8 L/hr	18.4 Gal/hr	
50% load with fan	50.1 L/hr	13.2 Gal/hr	
Cooling System ¹			
Air flow restriction (system)	0.12 kPa	0.48 in. water	
Air flow (max @ rated speed for radiator arrangement)	684 m³/min	24155 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	25.2 m³/min	889.9 cfm	
Exhaust System			
Exhaust stack gas temperature	544.0 ° C	1011.2 ° F	
Exhaust gas flow rate	72.1 m³/min	2546.2 cfm	
Heat rejection to aftercooler	31 kW	1763 Btu/min	
Exhaust flange size (internal diameter)	152.4 mm	6.0 in	
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water	
Heat rejection			
Heat rejection to coolant (total)	210 kW	11943 Btu/min	
Heat rejection to exhaust (total)	341 kW	19393 Btu/min	
Heat rejection to atmosphere from engine	73 kW	4152 Btu/min	
Heat rejection to atmosphere from generator	21.9 kW	1245.5 Btu/min	
Alternator ²			
Motor starting capability @ 30% voltage dip	880 skVA		
Frame	LC6114B		
Temperature Rise	105 ° C	189 ° F	
Lube System			
Sump refill with filter	38.0 L	10.0 gal	
Emissions ³			
NOx g/hp-hr	7.44 g/hp-hr		
CO g/hp-hr	2.35 g/hp-hr		
HC g/hp-hr	.08 g/hp-hr		
PM g/hp-hr	.654 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 UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40°C ambient per NEMA MG1-32.

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. Prime power in accordance with ISO3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm 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 (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.

60 Hz 1800 rpm 480 Volts



DIMENSIONS

Package Dimensions				
Length	4264.3 mm	167.89 in		
Width	1110.0 mm	43.7 in		
Height	2150.0 mm	84.65 in		
Weight	3454 kg	7,615 lb		

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #3202728).

Performance No.: DM2270

Feature Code: 406DER9

Gen. Arr. Number: 2351203

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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6