DIESEL GENERATOR SET



Image shown may not reflect actual package.

STANDBY
280 ekW 350 kVA
50 Hz 1500 rpm 400 Volts

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

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•S℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

FEATURES

FUEL/EMISSIONS STRATEGY

- Low Fuel consumption

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

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•

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional

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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 filter • Oil drain line with valve piped to edge of base • Fumes 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)

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SPECIFICATIONS

CAT GENERATOR

Frame size..... LC6114B
Excitation..... Self Excitation
Pitch.....0.6667
Number of poles.....4
Number of bearings..... Single bearing
Number of Leads.....012
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP Rating.....IP23
Alignment.....Pilot Shaft
Overspeed capability.....150
Wave form Deviation (Line to Line)..... 002.00
Voltage regulator.....Three phase sensing
Voltage regulation.....Less than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)
Telephone influence factor.....Less than 50
Harmonic Distortion.....Less than 5%

CAT DIESEL ENGINE

3406C TA, I-6, 4-Stroke Water-cooled Diesel
Bore.....137.20 mm (5.4 in)
Stroke.....165.10 mm (6.5 in)
Displacement.....14.64 L (893.39 in^3)
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

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM2269	
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	350 kVA	
Genset Power rating with fan	280 ekW	
Fuel Consumption		
100% load with fan	79.6 L/hr 60.6	21.0 Gal/hr 16.0
75% load with fan	L/hr	Gal/hr
50% load with fan	42.6 L/hr	11.3 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	522 m^3/min	18434 cfm
Engine Coolant capacity with radiator/exp. tank	57.8 L 20.8	15.3 gal
Engine coolant capacity	L	5.5 gal
Radiator coolant capacity	37.0 L	9.8 gal
Inlet Air		
Combustion air inlet flow rate	19.8 m^3/min	699.2 cfm
Exhaust System		
Exhaust stack gas temperature	596.8 ° C	1106.2 ° F
Exhaust gas flow rate	60.4 m^3/min	2133.0 cfm
Heat rejection to aftercooler	19 kW	1081 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)	183 kW	10407 Btu/min
Heat rejection to exhaust (total)	297 kW	16890 Btu/min
Heat rejection to atmosphere from engine	65 kW	3697 Btu/min
Heat rejection to atmosphere from generator	19.8 kW	1126.0 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	745 skVA	
Frame	LC6114B	
Temperature Rise	130 ° C	234 ° F
Lube System		
Sump refill with filter	38.0 L	10.0 gal
Emissions[2]		
NOx mg/nm3	4261.3 mg/nm^3	
CO mg/nm3	1721.9 mg/nm^3	
HC mg/nm3	24.1 mg/nm^3	
PM mg/nm3	249.3 mg/nm^3	

[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.

[2] 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

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

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. Standby power in accordance with ISO8528. 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 35º API [16º C (60º F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º 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.

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	**3464 kg**	**7,637 lb**

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2923096).

Performance No.: DM2269

Feature Code: 406DEN8

Gen. Arr. Number: 2351203

Source: European Sourced

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