



Image shown may not reflect actual package.

PRIME

**1280 ekW 1600 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.

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.

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® 3512B-HD TA DIESEL ENGINE

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Industry leading mechanical and electrical design
- Industry leading motor starting capabilities
- High Efficiency

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 (except Tier 4)
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 load acceptance and recovery time • IP23 protection	<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 <input type="checkbox"/> 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: <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

Cat Generator
Frame size 1602
Excitation Internal Excitation
Pitch 0.6667
Number of poles 4
Number of bearings 2
Number of Leads 006
Insulation UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP Rating IP23
Alignment Closed Coupled
Overspeed capability 150
Wave form Deviation (Line to Line) 002.00
Voltage regulator..... 3 Phase sensing with selectable volts/Hz
Voltage regulation Less than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)

CAT DIESEL ENGINE

3512B-HD TA, V-12, 4-Stroke Water-cooled Diesel
Bore 170.00 mm (6.69 in)
Stroke 215.00 mm (8.46 in)
Displacement 58.56 L (3573.55 in³)
Compression Ratio 15.5:1
Aspiration TA
Fuel System Electronic unit injection
Governor Type ADEM3

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)
- kW, 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 - - 1500rpm/50 Hz/400 Volts	DM8233	
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1600 kVA	
Genset Power rating with fan	1280 ekW	
Fuel Consumption		
100% load with fan	323.8 L/hr	85.5 Gal/hr
75% load with fan	245.6 L/hr	64.9 Gal/hr
50% load with fan	172.3 L/hr	45.5 Gal/hr
Cooling System¹		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Engine Coolant capacity with radiator/exp. tank	305.8 L	80.8 gal
Engine coolant capacity	156.8 L	41.4 gal
Radiator coolant capacity	149.0 L	39.4 gal
Inlet Air		
Combustion air inlet flow rate	112.6 m ³ /min	3976.4 cfm
Exhaust System		
Exhaust stack gas temperature	443.0 °C	829.4 °F
Exhaust gas flow rate	280.4 m ³ /min	9902.2 cfm
Exhaust flange size (internal diameter)	203.2 mm	8.0 in
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water
Heat Rejection		
Heat rejection to coolant (total)	468 kW	26615 Btu/min
Heat rejection to exhaust (total)	1205 kW	68528 Btu/min
Heat rejection to aftercooler	291 kW	16549 Btu/min
Heat rejection to atmosphere from engine	106 kW	6028 Btu/min
Heat rejection to atmosphere from generator	60.3 kW	3429.3 Btu/min
Alternator²		
Motor starting capability @ 30% voltage dip	4266 skVA	
Frame	1602	
Temperature Rise	105 °C	189 °F
Lube System		
Sump refill with filter	310.4 L	82.0 gal
Emissions (Nominal)³		
NOx mg/nm ³	2452.1 mg/nm ³	
CO mg/nm ³	299.2 mg/nm ³	
HC mg/nm ³	44.4 mg/nm ³	
PM mg/nm ³	48.9 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 degree 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.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

AS1359, CSAC22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 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

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 Dealer for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat Dealer.

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DIMENSIONS

Package Dimensions		
Length	5469 mm	215.3 in
Width	2286 mm	90.0 in
Height	2367 mm	93.2 in
Weight	14520 kg	32011 lbs

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

Performance No.: DM8233-01

Feature Code: 512DE8Y

Gen. Arr. Number: 2523838

Source: European Sourced

March 2014

www.Cat-ElectricPower.com

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The International System of Units (SI) is used in this publication.

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