

DIESEL GENERATOR SET



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reflectactualpackage.

Mission Critical Standby STANDBY 2000 e kW 2500 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.

- Cat dealers have over 1,800 dealer branch storesoperating in 200 countries
- The Cat® S•O•SSM program cost effectively detects internal engine component condition, even the presence

ATURES

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 expansionattachments, factory designed and tested
- Flexible packaging options for easy and costeffective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale supportincluding maintenance and repair agreements

of unwanted fluids and combustion by-products

CAT® 3516B-HD TA DIESEL ENGINE

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

CAT GENERATOR

- Matched to the performance and outputcharacteristics 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 ofcustomer needs
- Integrated Control System and Communications Gateway

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Air cleaner	
Cooling	• Package mounted radiator	

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STANDBY2000ekW2500kVA



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Exhaust	<ul style="list-style-type: none"> Exhaust flange outlet 	<input type="checkbox"/> Exhaust mufflers (except Tier 4)
Fuel	<ul style="list-style-type: none"> Primary fuel filter with integral water separator Secondary fuel filters Fuel priming pump 	
Generator	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Bus bar 	<input type="checkbox"/> Circuit breakers, UL listed <input type="checkbox"/> Circuit breakers, IEC compliant
Control Panel	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Paint - Caterpillar Yellow except rails and radiators gloss black 	<p>The following options are based on regional and product configuration:</p> <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

SPECIFICATIONS

Mission Critical Standby 2000 kW 2500 kVA

STANDBY2000kW2500kVA

50 Hz 1500 rpm 400 Volts

CAT GENERATOR

Cat Generator

Frame size..... 1844

Excitation.....Permanent Magnet

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)..... 003.00

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

3516B-HD TA, V-16, 4-Stroke Water-cooled Diesel

Bore.....170.00 mm (6.69 in)

Stroke.....215.00 mm (8.46 in)

Displacement.....78.08 L (4764.73 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

Mission Critical Standby 2000 ekW 2500 kVA



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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8371	
Low Fuel Consumption		
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	2500 kVA 2000 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	519.7 L/hr 382.1 L/hr 260.1 L/hr	137.3 Gal/hr 100.9 Gal/hr 68.7 Gal/hr
Cooling System ¹ Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	382.0 L 233.0 L 149.0 L	100.9 gal 61.6 gal 39.4 gal
Inlet Air Combustion air inlet flow rate	151.7 m ³ /min	5357.2 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	554.3 °C 443.2 m ³ /min 203.2 mm 6.7 kPa	1029.7 °F 15651.5 cfm 8.0 in 26.9 in. water
Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	751 kW 2080 kW 379 kW 166 kW 94.2 kW	42709 Btu/min 118289 Btu/min 21554 Btu/min 9440 Btu/min 5357.1 Btu/min
Alternator ² Motor starting capability @ 30% voltage dip Frame Temperature Rise	6537 skVA 1844 125 °C	225 °F
Lube System Sump refill with filter	401.3 L	106.0 gal
Emissions (Nominal) ³ NOx mg/nm ³ CO mg/nm ³ HC mg/nm ³ PM mg/nm ³	3351.3 mg/nm ³ 387.1 mg/nm ³ 53.1 mg/nm ³ 26.8 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 Generator temperature rise is based on a 40° C (104° F) 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, 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 Standby - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the

Average power output is 70% of the standby power rating. Typical peak demand up to 100% rating. Typical operation is 200 hours per year, with standby rated ekW for 5% of the operating time.

Maximum expected usage of 500 hours per year. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. Fuel stop power in accordance with ISO3046. Standby 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.).

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

DIMENSIONS

Package Dimensions	
Length	Information not available at this time.
Width	
Height	

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2336966).

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Performance No.: DM8371

Feature Code: 516DE92

Gen. Arr. Number: 3111142

Source: European Sourced

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