



Image shown may not reflect actual package.

## MISSION CRITICAL STANDBY

**1500 ekW 1875 kVA  
60 Hz 1800 rpm 12 470  
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•S<sup>SM</sup> program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

### CAT 3512B 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 HV GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- UL 1446 Recognized Class F 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

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## 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 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	[ ] 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

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## SPECIFICATIONS

### CAT GENERATOR

Cat HV Generator

Frame size..... 2730  
Excitation..... Permanent Magnet  
Pitch..... 0.6670  
Number of poles..... 4  
Number of bearings..... 2  
Number of Leads..... 006  
Insulation..... Class F with tropicalization and antiabrasion  
- Consult your Caterpillar dealer for available voltages  
IP Rating..... IP23  
Alignment..... Closed Coupled  
Overspeed capability..... 125  
Wave form Deviation (Line to Line)..... 002.00  
Voltage regulator..... 3 Phase sensing with volts/Hz  
Voltage regulation..... Less than +/- 1/2% (steady state)  
Less than +/- 1% (no load to full load)

### CAT DIESEL ENGINE

3512B TA, V-12, 4-Stroke Water-cooled Diesel

Bore..... 170.00 mm (6.69 in)  
Stroke..... 190.00 mm (7.48 in)  
Displacement..... 51.80 L (3161.03 in<sup>3</sup>)  
Compression Ratio..... 14.0:1  
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)
- 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 (kVA) (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/12 470 Volts		
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1875 kVA	
Genset Power rating with fan	1500 ekW	
Fuel Consumption		
100% load with fan	411.2 L/hr	108.6 Gal/hr
75% load with fan	303.6 L/hr	80.2 Gal/hr
50% load with fan	208.7 L/hr	55.1 Gal/hr
Cooling System <sup>1</sup>		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1501 m³/min	53007 cfm
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	125.7 m³/min	4439.1 cfm
Exhaust System		
Exhaust stack gas temperature	503.7 ° C	938.7 ° F
Exhaust gas flow rate	344.8 m³/min	12176.5 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)	668 kW	37989 Btu/min
Heat rejection to exhaust (total)	1595 kW	90707 Btu/min
Heat rejection to aftercooler	351 kW	19961 Btu/min
Heat rejection to atmosphere from engine	157 kW	8929 Btu/min
Heat rejection to atmosphere from generator	80.6 kW	4583.7 Btu/min
Alternator <sup>2</sup>		
Motor starting capability @ 30% voltage dip	2839 skVA	
Frame	2730	
Temperature Rise	130 ° C	234 ° F
Lube System		
Sump refill with filter	310.4 L	82.0 gal
Emissions (Nominal) <sup>3</sup>		
NOx g/hp-hr	9.84 g/hp-hr	
CO g/hp-hr	1.43 g/hp-hr	
HC g/hp-hr	.38 g/hp-hr	
PM g/hp-hr	.112 g/hp-hr	

<sup>1</sup> For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> 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.

<sup>3</sup> 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

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**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** – Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the standby power rating. Typical peak demand up to 100% of standby rated ekW for 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. 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 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

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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.

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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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