



Image shown may not reflect actual package.

Mission Critical Standby 1280 kW 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 Emissions

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 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

Mission Critical Standby 1280 kW 1600 kVA

50 Hz 1500 rpm 400 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

| System | Standard | Optional |
|-------------------|--|--|
| Air Inlet | <ul style="list-style-type: none"> Air cleaner | |
| Cooling | <ul style="list-style-type: none"> Package mounted radiator | |
| 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 | 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 |

Mission Critical Standby 1280 kW 1600 kVA

50 Hz 1500 rpm 400 Volts



SPECIFICATIONS

CAT GENERATOR

Cat Generator
Frame size..... 1468
Excitation..... Internal Excitation
Pitch..... 0.6667
Number of poles..... 4
Number of bearings..... Single bearing
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..... Pilot Shaft
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 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 in³)
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)
- 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 (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

Mission Critical Standby 1280 ekW 1600 kVA

50 Hz 1500 rpm 400 Volts



TECHNICAL DATA

| Open Generator Set - - 1500 rpm/50 Hz/400 Volts | | |
|---|---------------------------|----------------|
| Low Emissions | | |
| 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 | 354.1 L/hr | 93.5 Gal/hr |
| 75% load with fan | 262.8 L/hr | 69.4 Gal/hr |
| 50% load with fan | 176.5 L/hr | 46.6 Gal/hr |
| Cooling System¹ | | |
| Air flow restriction (system) | 0.12 kPa | 0.48 in. water |
| Engine Coolant capacity with radiator/exp. tank | 286.8 L | 75.8 gal |
| Engine coolant capacity | 156.8 L | 41.4 gal |
| Radiator coolant capacity | 130.0 L | 34.3 gal |
| Inlet Air | | |
| Combustion air inlet flow rate | 120.9 m ³ /min | 4269.5 cfm |
| Exhaust System | | |
| Exhaust stack gas temperature | 422.8 ° C | 793.0 ° F |
| Exhaust gas flow rate | 296.0 m ³ /min | 10453.2 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) | 537 kW | 30539 Btu/min |
| Heat rejection to exhaust (total) | 1269 kW | 72168 Btu/min |
| Heat rejection to aftercooler | 450 kW | 25591 Btu/min |
| Heat rejection to atmosphere from engine | 131 kW | 7450 Btu/min |
| Heat rejection to atmosphere from generator | 56.1 kW | 3190.4 Btu/min |
| Alternator² | | |
| Motor starting capability @ 30% voltage dip | 4282 skVA | |
| Frame | 1468 | |
| Temperature Rise | 150 ° C | 270 ° F |
| Lube System | | |
| Sump refill with filter | 310.4 L | 82.0 gal |
| Emissions (Nominal)³ | | |
| NOx mg/nm ³ | 1830.3 mg/nm ³ | |
| CO mg/nm ³ | 134.2 mg/nm ³ | |
| HC mg/nm ³ | 68.8 mg/nm ³ | |
| PM mg/nm ³ | 35.3 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 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.

Mission Critical Standby 1280 ekW 1600 kVA

50 Hz 1500 rpm 400 Volts



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 - 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.

Mission Critical Standby 1280 kW 1600 kVA

50 Hz 1500 rpm 400 Volts



DIMENSIONS

| Package Dimensions | | |
|--------------------|-----------|-----------|
| Length | 5237.1 mm | 206.18 in |
| Width | 1974.9 mm | 77.75 in |
| Height | 2342.0 mm | 92.2 in |

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

www.Cat-ElectricPower.com

2013 Caterpillar
All rights reserved.

Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.

CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

Source: European Sourced

March 12 2013