



Image shown may not reflect actual package.

## STANDBY

**1600 e kW 2000 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•S<sup>SM</sup> program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

### CAT 3516 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 SR5 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 3 SERIES 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	<ul style="list-style-type: none"> <li>• Single element canister type air cleaner</li> <li>• Service indicator</li> </ul>	<input type="checkbox"/> Dual element & heavy duty air cleaners <input type="checkbox"/> Air inlet adapters & shutoff
Cooling	<ul style="list-style-type: none"> <li>• Radiator with guard</li> <li>• Coolant drain line with valve</li> <li>• Radiator fan and fan drive</li> <li>• Fan and belt guards</li> <li>• Cat® Extended Life Coolant*</li> <li>• Coolant level sensors</li> </ul>	<input type="checkbox"/> Heat exchanger <input type="checkbox"/> Radiator duct flange <input type="checkbox"/> Coolant level switch gauge <input type="checkbox"/> Jacket water heater
Exhaust	<ul style="list-style-type: none"> <li>• Dry exhaust manifold</li> <li>• Flanged faced outlets</li> </ul>	<input type="checkbox"/> Mufflers (10, 25, & 35 dba) <input type="checkbox"/> Elbow kit and through-wall installation kit
Fuel	<ul style="list-style-type: none"> <li>• Secondary fuel filters</li> <li>• Fuel priming pump</li> <li>• Flexible fuel lines</li> <li>• Fuel cooler*</li> </ul>	<input type="checkbox"/> Water separator <input type="checkbox"/> Primary fuel filter
Power Termination	<ul style="list-style-type: none"> <li>• Bus bar (IEC mechanical lug holes)</li> <li>• Top cable entry</li> </ul>	<input type="checkbox"/> Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip (low voltage only), choice of trip units, manual or electrically operated <input type="checkbox"/> Bottom cable entry <input type="checkbox"/> Power terminations can be located on the right, left and/or rear as an option.
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• Cat digital voltage regulator (CDVR) with kVAR/PF control, 3-phase sensing</li> <li>• Reactive droop</li> </ul>	<input type="checkbox"/> Oversize & premium generators <input type="checkbox"/> Winding temperature detectors <input type="checkbox"/> Anti-condensation heaters
Governor	<ul style="list-style-type: none"> <li>• Woodward 2301 isochronous</li> </ul>	<input type="checkbox"/> Load share governor
Control Panel	<ul style="list-style-type: none"> <li>• EMCP 3.1</li> <li>• User Interface panel (UIP) - rear mount</li> <li>• AC &amp; DC customer wiring area (right side)</li> <li>• Emergency stop pushbutton</li> </ul>	<input type="checkbox"/> EMCP 3.2 ... <input type="checkbox"/> EMCP 3.3 <input type="checkbox"/> Option for right or left mount UIP <input type="checkbox"/> Local & remote annunciator modules <input type="checkbox"/> Digital I/O Module <input type="checkbox"/> Generator temperature monitoring & protection <input type="checkbox"/> Remote monitoring software
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil</li> <li>• Gear type lube oil pump</li> <li>• Oil filter, filler and dipstick</li> <li>• Oil drain lines and valve</li> <li>• Fume disposal</li> </ul>	<input type="checkbox"/> Sump pump (manual) <input type="checkbox"/> Sump & prelube pump (manual or electric) <input type="checkbox"/> Oil level regulator
Mounting	<ul style="list-style-type: none"> <li>• Rails - Engine / generator / radiator mounting</li> <li>• Rubber anti-vibration mounts (shipped loose)</li> </ul>	<input type="checkbox"/> Isolator removal <input type="checkbox"/> Spring-type vibration isolator (shipped loose)
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor(s)</li> <li>• Batteries with rack and cables</li> <li>• Battery disconnect switch</li> </ul>	<input type="checkbox"/> Battery chargers (5 or 10 Amp) <input type="checkbox"/> 45 amp charging alternator <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Ether starting aids <input type="checkbox"/> Heavy duty starting motors <input type="checkbox"/> Barring device (manual)
General	<ul style="list-style-type: none"> <li>• Right hand service</li> <li>• Paint - Caterpillar Yellow (with high gloss black rails &amp; radiator)</li> <li>• SAE standard rotation</li> <li>• Flywheel and flywheel housing - SAE No. 00</li> </ul>	<input type="checkbox"/> CSA certification <input type="checkbox"/> CE Certificate of Conformance <input type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 * Not included with packages without radiators

**SPECIFICATIONS**

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**CAT GENERATOR**

Caterpillar Generator  
 Frame size..... 1625  
 Excitation..... IE  
 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  
 Alignment..... Pilot Shaft  
 Overspeed capability - % of rated..... 150  
 Wave Form..... 002.00  
 Paralleling kit/Droop Transformer..... Standard  
 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)  
 Telephone Influence Factor..... Less than 50  
 Harmonic distortion..... Less than 5%

**CAT DIESEL ENGINE**

3516 TA, V-16, 4-stroke-cycle watercooled diesel  
 Bore - mm..... 170.00 mm (6.69 in)  
 Stroke - mm..... 190.00 mm (7.48 in)  
 Displacement - L..... 69.00 L (4210.64 in<sup>3</sup>)  
 Compression ratio..... 13.5:1  
 Aspiration..... TA  
 Fuel system..... Electronic unit injection  
 Governor type..... Woodward

**CAT EMCP CONTROL PANELS**

- EMCP 3.1 (Standard)
- EMCP 3.2 / EMCP 3.3 (Option)
- Single location customer connector point
- True RMS metering, 3-phase
- Controls:
  - Run / Auto/ Stop control
  - Speed Adjust
  - Voltage Adjust
  - Emergency Stop Pushbutton
  - Engine cycle crank
- Digital Indication for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - System DC volts
- L-L volts, L-N volts, phase amps Hz
  - kW, kVA, kVAR, kW-hr, %kW, PF (EMCP 3.2/ 3.3)
- Shutdowns with indicating light for:
  - Low oil pressure
  - High coolant temperature
  - Low coolant level
  - Overspeed
  - Emergency stop
  - Failure to start (overcrank)
- Programmable protective relaying functions: (EMCP 3.2 & 3.3)
  - Under and over voltage
  - Under and over frequency
  - Overcurrent (time and inverse time)
  - Reverse power (EMCP 3.3)
- MODBUS isolated data link, RS-486 half duplex (EMCP 3.2 & 3.3)
- Options
  - Vandal door
  - Local annunciator module
  - Remote annunciator module
  - Input / Output module
  - RTD / Thermocouple modules
  - Monitoring software

**TECHNICAL DATA**

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8366	
<b>Low Fuel Consumption</b>		
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	2000 kVA 1600 kW	
<b>Coolant to aftercooler</b> Coolant to aftercooler temp max	82 ° C	180 ° F
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	420.9 L/hr 317.5 L/hr 226.0 L/hr	111.2 Gal/hr 83.9 Gal/hr 59.7 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow restriction (system) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 398.0 L 233.0 L 165.0 L	0.48 in. water 105.1 gal 61.6 gal 43.6 gal
<b>Inlet Air</b> Combustion air inlet flow rate	127.7 m <sup>3</sup> /min	4509.7 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	498.5 ° C 334.0 m <sup>3</sup> /min 203.2 mm 6.7 kPa	929.3 ° F 11795.1 cfm 8.0 in 26.9 in. water
<b>Heat Rejection</b> 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	1055 kW 1532 kW 232 kW 166 kW 87.8 kW	59998 Btu/min 87125 Btu/min 13194 Btu/min 9440 Btu/min 4993.2 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	4978 skVA 1625 125 ° C	225 ° F
<b>Lube System</b> Sump refill with filter	401.3 L	106.0 gal
<b>Emissions (Nominal)<sup>3</sup></b> NOx mg/nm <sup>3</sup> CO mg/nm <sup>3</sup> HC mg/nm <sup>3</sup>	7207.2 mg/nm <sup>3</sup> 350.6 mg/nm <sup>3</sup> 89.3 mg/nm <sup>3</sup>	

<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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**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 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 representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

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## DIMENSIONS

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Package Dimensions		
Length	5905.4 mm	232.5 in
Width	2286.0 mm	90 in
Height	2342.0 mm	92.2 in
Weight	9072 kg	20,000 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2882679).

Performance No.: DM8366

Feature Code: 516DE89

Gen. Arr. Number: 2523846

Source: European Sourced

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