



Image shown may not reflect actual package.

## STANDBY

**1120 e kW 1400 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

### 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 3512 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>• Fan and belt guards</li> <li>• Cat® Extended Life Coolant*</li> </ul>	<input type="checkbox"/> Radiator duct flange <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 and Silencers <input type="checkbox"/> Stainless steel exhaust flex fittings <input type="checkbox"/> Elbows, flanges, expanders & Y adapters
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"/> Fuel cooler <input type="checkbox"/> Water separator
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"/> Bearing temperature detectors <input type="checkbox"/> Anti-condensation heaters
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.
Governor	<ul style="list-style-type: none"> <li>• Woodward 2301A isochronous</li> </ul>	<input type="checkbox"/> Electronic load sharing governor
Control Panels	<ul style="list-style-type: none"> <li>• EMCP 3.1</li> <li>• User Interface panel (UIP) - wall mounted</li> <li>• AC &amp; DC customer wiring area (right side)</li> <li>• Emergency top 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 and filter</li> <li>• Oil drain line with valves</li> <li>• Fumes disposal</li> <li>• Gear type lube oil pump</li> </ul>	<input type="checkbox"/> Oil level regulator <input type="checkbox"/> Deep sump oil pan <input type="checkbox"/> Electric & air prelube pumps <input type="checkbox"/> Manual prelube with sump pump <input type="checkbox"/> Duplex oil filter
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) <input type="checkbox"/> IBC Isolator
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 except rails and radiators are gloss black</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

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## SPECIFICATIONS

### CAT GENERATOR

Caterpillar Generator  
Frame size..... 1445  
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

3512 TA, 4-stroke-cycle watercooled diesel  
Bore - mm..... 170.00 mm (6.69 in)  
Stroke - mm..... 190.00 mm (7.48 in)  
Displacement - L..... 51.80 L (3161.03 in<sup>3</sup>)  
Compression ratio..... 13.5:1  
Aspiration..... TA  
Fuel system..... Direct unit injection  
Governor type..... Woodward

### CAT EMCP SERIES CONTROLS

- EMCP 3.1 (Standard)
- EMCP 3.2 / EMCP 3.3 (Option)
- Single location customer connection point
- True RMS AC metering, 3-phase
- Controls
  - Run / Auto / Stop control
  - Speed Adjust
  - Voltage Adjust
  - Emergency Stop pushbutton
  - Engine cycle crank
- Digital Indication for :
  - RPM
  - Operating hours
  - Low 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 common indicating light for:
  - Low oil pressure
  - High coolant temperature
  - Low coolant level
  - Overspeed
  - Emergency stop
  - Failure to start (over crank)
- 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-485 half-duplex (EMCP 3.2 & 3.3)
- Options
  - Vandal door
  - Local annunciator module
  - Remote annunciator module
  - Input / Output module
  - RTD / Thermocouple modules
  - Monitoring software

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## TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8221	
<b>Low Fuel Consumption</b>		
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	1400 kVA 1120 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	297.8 L/hr 225.1 L/hr 156.5 L/hr	78.7 Gal/hr 59.5 Gal/hr 41.3 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 1246 m <sup>3</sup> /min 286.8 L 156.8 L 130.0 L	0.48 in. water 44002 cfm 75.8 gal 41.4 gal 34.3 gal
<b>Inlet Air</b> Combustion air inlet flow rate	100.4 m <sup>3</sup> /min	3545.6 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	470.1 ° C 260.8 m <sup>3</sup> /min 203.2 mm 6.7 kPa	878.2 ° F 9210.1 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	695 kW 1162 kW 203 kW 119 kW 65.2 kW	39525 Btu/min 66083 Btu/min 11545 Btu/min 6768 Btu/min 3707.9 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	3087 skVA 1445 150 ° C	270 ° F
<b>Lube System</b> Sump refill with filter	310.4 L	82.0 gal

<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> Generator temperature rise is based on a 40°C (104°F) ambient per NEMA MG1-32.

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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	5237.1 mm	206.18 in
Width	1974.8 mm	77.75 in
Height	2367.2 mm	93.2 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 #2882683).

Performance No.: DM8221

Feature Code: 512DE6V

Gen. Arr. Number: 2523790

Source: European Sourced

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