



Image shown may not reflect actual package.

STANDBY
1120 e kW 1400 kVA
50 Hz 1500 rpm 11 000
Volts

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FEATURES

FUEL STRATEGY

- Low Fuel Consumption

DESIGN CRITERIA

- The generator set accepts rated load in one step

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested

WORLDWIDE PRODUCT SUPPORT

- Caterpillar® dealers provide extensive post sale support including maintenance and repair agreements • Caterpillar dealers fill 99.7% of parts orders within 24 hours • Caterpillar dealers have over 1,600 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 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 SR4B HV GENERATOR

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

CAT EMCP3 CONTROLS

- Controls designed to meet individual customer needs:
- EMCP 3 provides the option for full-featured power metering and protective relaying
- Segregated low voltage, AC/DC accessory box provides single point access to accessory connections

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> • Single element canister type air cleaner service indicator 	<ul style="list-style-type: none"> • Dual element & heavy duty air cleaners (with pre-cleaners) • Air inlet adapters & shutoff
Cooling	<ul style="list-style-type: none"> • JWAC • Radiator fan and fan drive • Fan and belt guards • Coolant drain line with valve • Coolant level sensors* • Caterpillar Extended Life Coolant* 	<ul style="list-style-type: none"> • Radiator with 27°C, 50°C and 53°C ambient capability • Radiator removal • Coolant level switch gauge • Heat exchanger and expansion tank • Heavy duty, harsh environment radiator at 43°C and 50°C
Exhaust	<ul style="list-style-type: none"> • Exhaust manifold - dry - dual - 8 in. • 203 mm (8in) ID round flanged outlet 	<ul style="list-style-type: none"> • Mufflers • Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	<ul style="list-style-type: none"> • Secondary fuel filters • Fuel priming pump • Flexible fuel lines- shipped loose • Fuel cooler* 	<ul style="list-style-type: none"> • Duplex fuel filter • Primary fuel filter with fuel water separator * Not included with packages without radiators
Power Termination	<ul style="list-style-type: none"> • Bus bar (NEMA and IEC mechanical lug holes) - right side standard • Top and bottom cable entry 	<ul style="list-style-type: none"> • Circuit breakers, UL listed, 3 pole with shunt trip, 80% or 100% rated, choice of trip units, manual or electrically operated (low voltage only) • Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip (low voltage only), choice of trip units, manual or electrically operated • Shroud cover for bottom cable entry • Power termination can be located on the left and/or rear as an option. Also, multiple circuit breakers can be ordered (up to 3)
Generator	<ul style="list-style-type: none"> • Permanent magnet excited • 3 phase brushless, salient pole • Class F insulation • Class F temperature (105°C prime/130°C standby) • Reactive droop • Digital Voltage Regulator • Bus bar connections • Winding temperature detectors • Anti-condensation space heaters 	
Governor	<ul style="list-style-type: none"> • Woodward 2301A isochronous 	<ul style="list-style-type: none"> • Load share governor
Control Panels	<ul style="list-style-type: none"> • EMCP 3.1 • User Interface panel (UIP) - rear mount • AC & DC customer wiring area (right side) • CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing • Reactive droop • Emergency stop pushbutton 	<ul style="list-style-type: none"> • EMCP 3.3 • Option for Right or left mount UIP • Local & remote annunciator modules • Load share module • Discrete I/O Module • Generator temperature monitoring & protection • Remote monitoring • Voltage adjust
Lube	<ul style="list-style-type: none"> • Lubricating oil and filter • Oil drain lines and valve • Fumes disposal • Gear type lube oil pump • Integral lube oil cooler 	<ul style="list-style-type: none"> • Oil level regulator • Deep sump oil pan • Electric & air prelube pumps • Manual prelube with sump pump • Duplex oil filter
Mounting	<ul style="list-style-type: none"> • Rails - Engine / generator / radiator mounting • Anti-vibration mounts (shipped loose) • Rubber anti-vibration mounts (shipped loose) 	<ul style="list-style-type: none"> • Isolator removal • Spring-type vibration isolator (shipped loose)
Starting/Charging	<ul style="list-style-type: none"> • 24 volt electric starting motor • Battery rack with cables • Battery disconnect switch 	<ul style="list-style-type: none"> • 45 amp charging alternator • Battery chargers (10 and 20 Amp) • Oversized battery • Air starting motor with control & silencer • Air pressure regulator • Heavy duty starting motors • Ether starting aids

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SPECIFICATIONS

CAT GENERATOR

SR4B HV Generator
Frame size..... 2730
Excitation..... Permanent Magnet
Pitch..... 0.6670
Number of poles..... 4
Number of bearings..... 2
Number of Leads..... 6
IP rating..... Drip Proof IP22
Alignment..... Closed Coupled
Overspeed capability - % of rated..... 125
Wave form..... 002.00
Paralleling kit/Droop transformer..... Standard
Voltage regulator..... 3 Phase sensing with 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%
Insulation..... Class F with tropicalization and antiabrasion

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 in³)
Compression ratio..... 13.5:1
Aspiration..... TA
Fuel system..... Direct unit injection
Governor type..... Woodward

CAT CONTROL PANELS

- EMCP 3.1 (Standard)
- EMCP 3.3 (Optional)
- Generator mounted rear-facing control panel
- Emergency stop pushbutton
- 24 Volt DC Control
- Environmental sealed front face
- Text alarm /event descriptions
- Warning / Shutdowns with indicating lights for:
 - Low oil pressure
 - High coolant temperature
 - Overspeed
 - Emergency stop
 - Failure to start (over crank)
 - Low coolant level
- Controls:
 - Speed adjust
 - Auto / start / stop control
 - Engine cool-down timer
 - Engine cycle crank
 - Alarm acknowledge
 - Lamp test
- True RMS AC metering, 3-phase
- Digital indication for :
 - RPM
 - System DC Volts
 - Operating hours
 - Oil pressure (psi, kPa or bar)
 - Coolant temperature
 - L-L volts, L-N volts, Phase amps, Hz
 - kW, kVA, kVAR, kWhr, %kW, PF(*)
- Programmable digital (4) inputs and (4) outputs
- Reverse power (3.3)
- MODBUS isolated data link (RS-485 half-duplex)supports serial communication at data rate up to 115.2 kbaud (3.3)

Consult your Caterpillar Dealer for Details

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/11 000 Volts	DM8221	
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	1400 kVA 1120 kW	
Coolant to aftercooler Coolant to aftercooler temp max	82 ° C	180 ° F
Fuel Consumption 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
Cooling System¹ 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 ³ /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
Inlet Air Combustion air inlet flow rate	100.4 m ³ /min	3545.6 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	470.1 ° C 260.8 m ³ /min 203.2 mm 6.7 kPa	878.2 ° F 9210.1 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	695 kW 1162 kW 203 kW 119 kW 55.2 kW	39525 Btu/min 66083 Btu/min 11545 Btu/min 6768 Btu/min 3139.2 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	2963 skVA 2730 105 ° C	189 ° F
Lube System Sump refill with filter	310.4 L	82.0 gal

¹ For ambient and altitude capabilities consult your Caterpillar 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°C ambient per NEMA MG1-32.

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RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034, ISO3046, ISO8528, NEMA MG 1-33, UL508A, 98/37/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 J1995 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 Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Caterpillar dealer.

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DIMENSIONS

Package Dimensions		
Length	5544.8 mm	218.3 in
Width	2073.1 mm	81.62 in
Height	2367.2 mm	93.2 in
Weight	14 433 kg	31,819 lb

Note: Do not use for installation design.
See general dimension drawings for detail (Drawing #2748719).

Performance No.: DM8221

Feature Code: 512DE5D

Source: U.S. Sourced

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