
Diesel Generator Set

CATERPILLAR®



Image shown may not reflect actual package

Standby 1200 ekW 1500 kVA 50 Hz 1500 rpm 400 Volts

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

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 1600 dealer branch stores operating in 200 countries.
- The Cat® SOSSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT 3512B DIESEL ENGINE

- Reliable, rugged, durable design
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT SR5 GENERATOR

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

CAT EMCP 3 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"> • Single element canister type air cleaner 	<ul style="list-style-type: none"> <input type="checkbox"/> Dual element & heavy duty air cleaners <input type="checkbox"/> Air inlet adapters & shutoff
Cooling	<ul style="list-style-type: none"> • SCAC • Radiator fan and belt drive • Fan and belt guards • Coolant drain line with valve • Coolant level sensors* • Caterpillar Extended Life Coolant* 	<ul style="list-style-type: none"> <input type="checkbox"/> Radiator with 50°C ambient capability <input type="checkbox"/> Heat exchanger and expansion tank <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"> • Exhaust manifold - dry - dual - 8 in • 203 mm (8 in) ID round flanged outlet 	<ul style="list-style-type: none"> <input type="checkbox"/> Mufflers <input type="checkbox"/> Stainless steel exhaust flex fittings <input type="checkbox"/> Elbows, flanges, expanders & Y adapters
Fuel	<ul style="list-style-type: none"> • Secondary fuel filters • Fuel cooler* • Fuel priming pump • Flexible fuel lines-shipped loose 	<ul style="list-style-type: none"> <input type="checkbox"/> Primary fuel filter with fuel water separator
Generator	<ul style="list-style-type: none"> • Class H insulation • CAT digital voltage regulator (CDVR) with VAR/PF control, 3-phase sensing 	<ul style="list-style-type: none"> <input type="checkbox"/> Oversize & premium generators <input type="checkbox"/> Winding temperature detectors <input type="checkbox"/> Anti-condensation space heaters
Power Termination	<ul style="list-style-type: none"> • Bus bar (IEC mechanical lug holes) • Top cable entry 	<ul style="list-style-type: none"> <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"> • ADEM™ III 	<ul style="list-style-type: none"> <input type="checkbox"/> Load share module
Control Panel	<ul style="list-style-type: none"> • User interface panel (UIP) - rear mount • EMCP 3.1 Genset Controller • AC & DC customer wiring area (right side) • Emergency Stop Pushbutton 	<ul style="list-style-type: none"> <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"> • Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump • Integral lube oil cooler 	<ul style="list-style-type: none"> <input type="checkbox"/> Oil level regulator <input type="checkbox"/> Electric & air prelube pumps <input type="checkbox"/> Manual prelube with sump pump
Mounting	<ul style="list-style-type: none"> • Rails - engine / generator / radiator mounting • Rubber anti-vibration mounts (shipped loose) 	<ul style="list-style-type: none"> <input type="checkbox"/> Isolator removal <input type="checkbox"/> Spring-type vibration isolator
Starting / Charging	<ul style="list-style-type: none"> • 24 volt starting motor • Battery rack with cables • Battery disconnect switch 	<ul style="list-style-type: none"> <input type="checkbox"/> 45 amp charging alternator <input type="checkbox"/> Battery chargers (10 and 20 Amp) <input type="checkbox"/> Oversized batteries <input type="checkbox"/> Heavy duty starting motors <input type="checkbox"/> Ether starting aids <input type="checkbox"/> Barring device (manual)
General	<ul style="list-style-type: none"> • Right hand service • Paint - Caterpillar Yellow (with high gloss black rails & radiator) • SAE standard rotation • Flywheel and flywheel housing - SAE No. 00 	<ul style="list-style-type: none"> <input type="checkbox"/> Front stub shaft <input type="checkbox"/> CSA certification <input type="checkbox"/> CE Certificate of Conformance * Not included with packages without radiators

SPECIFICATIONS

CAT GENERATOR

Frame 1447
 ExcitationIE
 Pitch.....0.6667
 Number of poles.....4
 Number of bearingsSingle Bearing
 InsulationClass H
 IP ratingDrip proof IP23
 Over speed capability - % of rated.....150%
 Wave form deviation.....3 %
 Voltage regulator..... 3 phase sensing with load
 adjustable module
 Telephone Influence FactorLess than 50
 Harmonic DistortionLess than 5%

CAT DIESEL ENGINE

3512B TA, V-12, 4 stroke, water-cooled diesel

Bore170.00 mm (6.69 in)
 Stroke190.00 mm (7.48in)
 Displacement51.80 L (3161.03 in³)
 Compression ratio.....14.0:1
 Aspiration.....TA
 Fuel system.....Electronic unit injection
 Governor Type.....ADEM3

CAT EMCP 3 CONTROL PANELS

- EMCP 3.1 Standard
- EMCP3.2 & 3.3 (Optional)
- 24 Volt DC Control
- Single location for customer connection
- Auto start/stop control
- True RMS metering, 3-phase
- Digital indications for:
 - RPM
 - Operating hours
 - Oil pressure
 - Coolant temperature
 - System DC volts
 - L-L volts, L-N volts, Phase amps, Hz
 - ekW, kVA, kVAR, kWhr, %kW, PF (EMCP3.2/3.3)
- Shutdowns with common 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
 - Reverse power
 - Overcurrent
- Modbus isolated data link (RS-485 half-duplex EMCP3.2 & 3.3)

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TECHNICAL DATA

Open Generator Set - 1500 rpm/50 Hz/400 Volts	STANDBY DM8036	
Package Performance Power rating Power rating @ 0.8 pf	1200 ekW 1500 kVA	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	331.5 L/hr 247.5 L/hr 167.2 L/hr	87.6 Gal/hr 65.3 Gal/hr 44.2 Gal/hr
Cooling System* Engine coolant Capacity with radiator arrangement) Engine coolant capacity Radiator coolant capacity	286.8 L 156.8 L 130.0 L	75.4 US Gal 41.4 US Gal 34.0 US Gal
Inlet Air Combustion air inlet flow rate	116.5 m ³ /min	4114.2 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	409.9 °C 279.7 m ³ /min 203.2 mm 6.7 kPa	769.8 °F 9877.5 cfm 8 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	511 kW 1182 kW 410 kW 124 kW 67.2 kW	29060 Btu/min 67220 Btu/min 23316 Btu/min 7052 Btu/min 3822 Btu/min
Alternator** Motor starting capability @ 30% voltage dip Frame Temperature Rise	3658 SKVA 1447 150°C	270 °F
Lube System Lube oil refill volume with filter change for standard sump	310.4 L	82.0 US Gal
Emissions (Nominal)*** NO _x g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	1819.2 mg/nm ³ 133.2 mg/nm ³ 76.9 mg/nm ³ 36.0 mg/nm ³	

* For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

** 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.

*** 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, NO_x. 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

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

