DIESEL GENERATOR SET

CATERPILLAR®

Image shown may not reflect actual package.

STANDBY
1000 ekW 1250 kVA
60 Hz 1800 rpm 480 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 rated load in one step

FULL RANGE OF ATTACHMENTS
• Wide range of bolt-on system expansion attachments, factory designed and tested

UL 2200
•UL 2200 listed packages are available. Certain restrictions may apply. Consult with your Caterpillar Dealer.

WORLDWIDE PRODUCT SUPPORT
•Worldwide parts availability through the Caterpillar dealer network
•With over 1844 dealer branch stores operating in 166 countries, you're never far from the Caterpillar part you need
•99.7% of parts orders filled within 24 hours. The best product support record in the industry.
•Caterpillar dealers service technicians are trained to service every aspect of your electric power generation system
•Preventative maintenance agreements
•The Cat Scheduled Oil Sampling (SOS) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT C32 TA DIESEL ENGINE
• Reliable, rugged, durable design
• Four-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight
• Electronic engine control

CAT SR4B GENERATOR
•Designed to match performance and output characteristics of Caterpillar diesel engines
•Optimum winding pitch for minimum total harmonic distrotion and maximum efficiency
•Single point access to accessory connections
•UL 1446 recognized Class H insulation system

CAT EMCP 3 SERIES CONTROL PANELS
• Controls designed to meet individual customer needs
• EMCP 3 provides the option for full-featured power metering and protective relaying

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner • Service indicator	• Dual element air cleaners • Air inlet adapters
Cooling	• Radiator with guard (43°C) • Low profile (frontal area) • Low airflow • Coolant drain line with valve • Fan and belt guards • Caterpillar Extended Life Coolant • Coolant level sensors • Radiator duct flange	• Radiator with 27°C ambient capability • Jacket water heater
Exhaust	• Dry exhaust manifold • Flanged faced outlets	• Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	• Primary fuel filter with water separator • Secondary fuel filter • Fuel priming pump • Flexible fuel lines • Fuel cooler	• Duplex fuel filter
Generators	• Permanent magnet excited • Class H insulation • Class F temperature (105°C prime/130°C standby) • Winding temperature detectors (select models) • Anti-condensation space heaters	• Oversize & premium generators
Power Termination	• Bus bar (NEMA and IEC mechanical lug holes) -right side standard • Bottom cable entry	• 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 terminations can be located on the left and/or rear as an option. Also, multiple circuit breakers can be ordered (up to 3) • Top cable entry
Governor	• ADEM™ A4	• Load Share Module
Control Panels	• User Interface panel (UIP) - rear mount • EMCP 3.1 generator set controller • Speed adjust • AC & DC customer wiring area (right side) • CAT Digital Voltage Regulator (CDVR) with KVAR/PF control, 3-phase sensing • Emergency Stop Push button	• EMCP 3.2 and EMCP 3.3 • Option for right or left mount UIP • Option for rear or left mount Customer wiring area • Local & remote annunciator modules • Discrete I/0 Module • Generator temperature monitoring & protection • Voltage raise/lower switch
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump	• Deep sump oil pan
Mounting	• Structual steel tube • Anti-vibration mounts (shipped loose)	
Starting/Charging	• 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect	• Battery chargers (10 Amp) • 45 amp charging alternator • Oversize batteries • Ether starting aid
General	• Right-hand service • Paint - Caterpillar Yellow (except rails and radiators gloss black) • SAE standard rotation • Flywheel and Flywheel housing - SAE No. 0	• UL 2200 • CSA certification • EU Declaration of Incorporation

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SPECIFICATIONS

CAT GENERATOR

SR4B Generator
Frame size..... 692
Excitation..... Permanent Magnet
Pitch..... 0.7143
Number of poles..... 4
Number of bearings..... 002
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
IP rating..... Drip Proof IP22
Alignment..... Closed Coupled
Overspeed capability - % of rated..... 150
Wave form..... 003.00
Paralleling kit/Droop transformer..... Standard
Voltage regulator.3 Phase sensing with selectible 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

C32 TA, V-12, 4-stroke watercooled diesel
Bore - mm..... 145.00 mm (5.71 in)
Stroke - mm..... 162.00 mm (6.38 in)
Displacement - L..... 32.10 L (1958.86 in^3)
Compression ratio..... 15:1
Aspiration..... TA
Fuel system..... MEUI
Governor type..... ADEM™ A4

CAT EMCP 3 SERIES CONTROLS

• EMCP 3.1 (Standard)
•Integral to generator terminal box
•Single location for customer connection
•IP 23 enclosure
• 24 Volt DC Control
• UL/CSA/CE
• Lockable hinged door (option)
• Run/Auto/Stop control
• True RMS metering, 3-phase
•Speed Adjust
• Voltage adjust (optional on 3.1)
• 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, kW-hr, %kW, PF(*)
• Shutdowns with indicating lights (with optional annunciator):
  - Low oil pressure
  - High coolant temperature
  - Overspeed
  - Emergency stop
  - Failure to start (overcrank)
• Programmable protective relaying functions (*):
  - Under and over voltage
  - Under and over frequency
  - Reverse power
- Overcurrent
• MODBUS isolated data link (RS-485 half-duplex) supports serial communication at data rate up to 115.2 kbaud (*)
(*) Available on EMCP 3.2 & EMCP 3.3

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TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	DM8142	
Package Performance		
Genset Power rating @ 0.8 pf	1250 kVA	
Genset Power rating with fan	1000 ekW	
Low Emissions		
Coolant to aftercooler temp max	49 ° C	120 ° F
Fuel Consumption		
100% load with fan	272.3 L/hr	71.9 Gal/hr
75% load with fan	196.4 L/hr	51.9 Gal/hr
50% load with fan	138.2 L/hr	36.5 Gal/hr
Cooling System		
Ambient air temperature	48 ° C	118 ° F
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1126 m³/min	39764 cfm
Engine coolant capacity	55.0 L	14.5 gal
Radiator coolant capacity	55.0 L	14.5 gal
Engine Coolant capacity with radiator/exp. tank	110.0 L	29.1 gal
Inlet Air		
Combustion air inlet flow rate	91.2 m³/min	3220.7 cfm
Exhaust System		
Combustion air inlet flow rate	91.2 m³/min	3220.7 cfm
Exhaust stack gas temperature	446.4 ° C	835.5 ° F
Exhaust gas flow rate	231.1 m³/min	8161.2 cfm
Exhaust flange size (internal diameter)	203 mm	8 in
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water
Heat Rejection		
Heat rejection to coolant (total)	348 kW	19791 Btu/min
Heat rejection to exhaust (total)	1096 kW	62329 Btu/min
Heat rejection to aftercooler	294 kW	16720 Btu/min
Heat rejection to atmosphere from engine	50 kW	2843 Btu/min
Heat rejection to atmosphere from generator	56.0 kW	3184.7 Btu/min
Alternator		
Motor starting capability @ 30% voltage dip	1990 skVA	
Frame	692	
Temperature Rise	130 ° C	266 ° F
Lube System		
Sump refill with filter	76.0 L	20.1 gal
Emissions (Nominal)		
NOx g/hp-hr	4.83 g/hp-hr	
CO g/hp-hr	0.15 g/hp-hr	
HC g/hp-hr	0.04 g/hp-hr	
PM g/hp-hr	0.021 g/hp-hr	

Ambient capability at 1500m (4922 ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer.
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.
Emissions data measurements are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. This engine's exhaust emissions are in compliance with the US EPA and California nonroad regulations as identified above. 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.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG 1-22, VDE0530, 89/392/EEC, 89/336/EEC

Standby - Output available with varying load for the duration of the interruption of the normal source power. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514. Standby ambients shown indicate ambient temperature at 100 percent 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 ISO3046/1, DIN6271, and BS5514 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 Caterpillar representative for details.

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DIMENSIONS

Package Dimensions		
Length	**4766.9 mm**	**187.67 in**
Width	**2024.3 mm**	**79.7 in**
Height	**2254.0 mm**	**88.74 in**
Weight	**8046 kg**	**17,738 lb**

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #2763027).

www.CAT-ElectricPower.com

Performance No.: DM8142

Feature Code:: C32DE04

Source:: U.S. Sourced