DIESEL GENERATOR SET

CATERPILLAR®

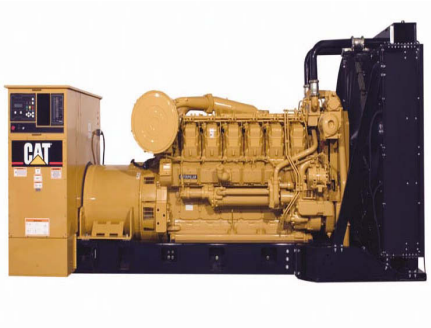

Image shown may not reflect actual package.

STANDBY
1200 ekW 1500 kVA
50 Hz 1500 rpm 400 Volts

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

FEATURES

EMISSIONS / FUEL STRATEGY
- Low Emissions

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 1,844 dealer branch stores operating in 166 countries
- The Cat Scheduled Oil Sampling program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

DESIGN CRITERIA
- The generator set accepts rated load in one step

CAT 3512B 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 GENERATOR
- Matched to the performance and output characteristics of Caterpillar engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

CAT EMCP3 CONTROL PANELS
- Controls designed to meet individual customer needs:
- EMCP 3 provides the option for full-featured power metering and protective relaying
- Segrated 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	• Single element canister type air cleaner • Service indicator	• Dual element & heavy duty air cleaners (with pre-cleaners) • Air inlet adapters & shutoff
Cooling	• Radiator with guard (43°C) • Low Profile (frontal area) • Low Airflow • Fan and belt guards • Radiator duct flange • Coolant drain line with valve • Fan and belt guards • Caterpillar Extended Life Coolant* *Not included with packages without radiators	• Radiator with 27°C 50°C ambient capability • Radiator option for 57°C ambient with treated water • Radiator removal • Heat exchanger and expansion tank • Heavy duty, harsh enviroment radiator at 43°C and 50°C • Coolant level switch gauge • Jacket water heater
Exhaust	• Dry exhaust manifold • Flanged faced outlets	• Mufflers and silencers • Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	• Secondary fuel filters • Fuel priming pump • Flexible fuel lines • Fuel cooler* *Not included with packages without radiators	• Water separator • Duplex fuel filter
Generator	• 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 •Top and bottom cable entry	• Circuit breakers, UL listed, 3 pole 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 trup inits, manual or electrically operated • Shroud cover for bottom cable entry • Power terminiations can be located on the left and/or rear as an option. Also, multiple circuit breakers can be ordered (up to 3)
Governor	• ADEM™ III	• Load share module
Control Panel	• User interface panel (UIP) - rear mount • EMCP 3.1 Genset Controller • Voltage and Speed Adjust • AC&DC customer wiring area (right side) • CAT digital voltage regulator (CDVR)with DVAR/PF control, 3-phase sensing • Reative droop • Emergency Stop Pushbutton	• EMCP 3.3 • Option for right or left mount UIP • Option for rear or left mount Customer wiring area • Local & remote annunciator modules • Load share module • Discrete I/O Module • Generator temperature monitoring & protection
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump	• Oil level regulator • Deep sump oil pan • Electric & air prelube pumps • Manual prelube with sump pump • Duplex oil filter
Mounting	• Structual steel tube • Anti-vibration mounts (shipped loose)	• Isolator removal • Spring-type zone 4
Starting/Charging	• 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect switch	• Battery chargers (10 &20 Amp) • 45 amp charging alternator • Oversize batteries • Ether starting aids • Heavy duty starting motors • Barring device (manual) • Air starting motor with control & silencer
Note	Standard and optional equipment may vary for UL 2200 Listed Packages. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.	

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SPECIFICATIONS

CAT GENERATOR

SR4B Generator
Frame size..... 697
Excitation..... Permanent Magnet
Pitch..... 0.7333
Number of poles..... 4
Number of bearings..... Single Bearing
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
IP rating..... Drip Proof IP22
Alignment..... Pilot Shaft
Overspeed capability - % of rated..... 180
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%

CAT DIESEL ENGINE

3512B 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^3)
Compression ratio..... 13.0:1
Aspiration..... TA
Fuel system..... Electronic unit injection
Governor type..... ADEM3

CAT EMCP3 CONTROLS

- EMCP 3.1 (standard)
- EMCP 3.3 (optional)
- Integral to generator terminal box
- IP 23 enclosure
- UL/CSA/CE
- Electronically dead front
- Lockable hinged door (optional)
- Run/Auto/Stop/Control
- Voltage Adjust (Optional on 3.1)
- True RMS metering, 3-phase
- Digital indications for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - System DC volts
  - AC volts, phase amps, Hz
  - L-L volts, L-N volts, Phase amps, Hz
  - ekW, kVA, kVAR, kWhr, %kW, PF(*)
- Shutdowns with indicating lights (with optional Annunciator)
  - Low oil pressure
  - High coolant temperature
  - Overspeed
  - Emergency stop
  - Failure to start (over crank)
- 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 1115.2 kbaud (*)

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8038	
Low Emissions		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1500 kVA	
Genset Power rating with fan	1200 ekW	
Coolant to aftercooler		
Coolant to aftercooler temp max	90 ° C	194 ° F
Fuel Consumption		
100% load with fan	315.1 L/hr	83.2 Gal/hr
75% load with fan	243.7 L/hr	64.4 Gal/hr
50% load with fan	173.4 L/hr	45.8 Gal/hr
Cooling System[1]		
Ambient air temperature	51 ° C	124 ° F
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1614 m³/min	56998 cfm
Engine coolant capacity	156.8 L	41.4 gal
Inlet Air		
Combustion air inlet flow rate	98.0 m³/min	3460.8 cfm
Exhaust System		
Exhaust stack gas temperature	462.4 ° C	864.3 ° F
Exhaust gas flow rate	254.3 m³/min	8980.5 cfm
Exhaust flange size (internal diameter)	203.2 mm	8.0 in
Exhaust system backpressure (maximum allowable)	6.7 kPa	26.9 in. water
Heat Rejection		
Heat rejection to coolant (total)	543 kW	30880 Btu/min
Heat rejection to exhaust (total)	1156 kW	65742 Btu/min
Heat rejection to aftercooler	232 kW	13194 Btu/min
Heat rejection to atmosphere from engine	140 kW	7962 Btu/min
Heat rejection to atmosphere from generator	56.5 kW	3213.1 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	2257 skVA	
Frame	697	
Temperature Rise	130 ° C	266 ° F
Lube System		
Sump refill with filter	310.4 L	82.0 gal
Emissions (Nominal)[3]		
NOx mg/nm3	4068.0 mg/nm³	
CO mg/nm3	616.1 mg/nm³	
HC mg/nm3	70.6 mg/nm³	
PM mg/nm3	25.2 mg/nm³	

[1] Ambient capability at 300 m (984ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer.

[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 degree C ambient per NEMA MG1-32.

[3] 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.

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	**5053.5 mm**	**198.96 in**
Width	**2085.0 mm**	**82.09 in**
Height	**2331.6 mm**	**91.8 in**
Weight	**13 204 kg**	**29,110 lb**

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #2748716).

Performance No.: DM8038

Feature Code:: 512DE4N

Source:: U.S. Sourced

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