DIESEL GENERATOR SET

CATERPILLAR®

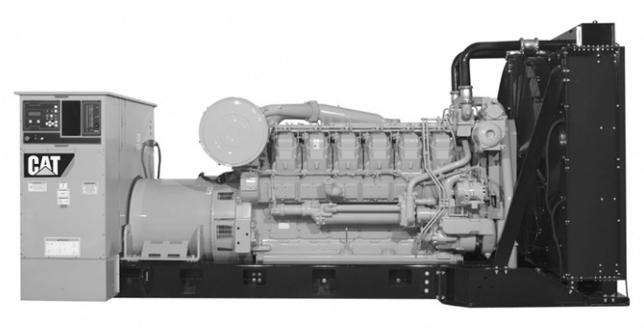

Image shown may not reflect actual package.

PRIME
1020 ekW 1275 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 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 have over 1,600 dealer branch stores operating in 200 countries
- The Cat® S•O•S℠ 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 Caterpillar engines
- Industry leading mechanical and electrical design
- Industry leading motor starting capabilities
- High Efficiency

CAT EMCP3 CONTROLS
- 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 assess to accessory connections

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Single element canister type air cleaner service indicator	• Dual element & heavy duty air cleaners • Air inlet adapters & shutoff
Cooling	• JWAC • Radiator fan and fan drive • Fan and belt guards • Coolant drain line with valve • Coolant level sensors* • Caterpillar Extended Life Coolant*	• Radiator with 27ºC,50ºC and 53ºC ambient capability • Radiator removal • Coolant level switch gauge • Heat exchanger and expansion tank • Heavy duty, harsh environment radiator at 43ºC and 50ºC
Exhaust	• Exhaust manifold - dry - dual - 8 in. • 203 mm 8in)ID round flanged outlet	• Mufflers • Stainless steel exhaust flex fittings • Elbows, flanges, expanders & Y adapters
Fuel	• Secondary fuel filters • Fuel priming pump • Flexible fuel lines- shipped loose • Fuel cooler*	• Duplex fuel filter • Primary fuel filter with fuel water separator * Not included with packages without radiators
Power Termination	• Bus bar (NEMA and IEC mechanical lug holes) - right side standard • Top and bottom cable entry	• Circuit breakers, UL listed, 3 pole with shunt trip,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 & multiple circuit breaker options
Generator	• 3 phase brushless, salient pole • Class H insulation & Class F temperature rise • Reactive droop • CAT digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing • Bus bar connections • Winding temperature detectors • Anti-condensation space heaters	• Oversize & premium generators
Governor	• Woodward 2301A isochronous	• Load share governor
Control Panels	• EMCP 3.1 • User Interface panel (UIP) - rear mount • AC & DC customer wiring area (right side) • Reactive droop • Emergency stop pushbutton	• 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	• Lubricating oil and filter • Oil drain lines and valve • Fumes disposal • Gear type lube oil pump • Integral lube oil cooler	• Oil level regulator • Deep sump oil pan • Electric & air prelube pumps • Manual prelube with sump pump • Duplex oil filter
Mounting	• Rails - Engine / generator / radiator mounting • Rubber anti-vibration mounts (shipped loose)	• Isolator removal • Spring-type vibration isolator(shipped loose)
Starting/Charging	• 24 volt electric starting motor • Battery rack with cables • Battery disconnect switch	• 45 amp charging alternator • Battery chargers (10 and 20 Amp) • Oversized battery • Air starting system • Heavy duty starting motors • Ether starting aids
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

Caterpillar Generator
Frame size..... 1445
Excitation..... IE
Pitch..... 0.6667
Number of poles..... 4
Number of bearings..... Single Bearing
Number of Leads..... 6
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 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

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^3)
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
  - ekW, 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/400 Volts	DM8222	
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1275 kVA	
Genset Power rating with fan	1020 ekW	
Coolant to aftercooler		
Coolant to aftercooler temp max	82 ° C	180 ° F
Fuel Consumption		
100% load with fan	264.6 L/hr	69.9 Gal/hr
75% load with fan	203.2 L/hr	53.7 Gal/hr
50% load with fan	140.8 L/hr	37.2 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1246 m³/min	44002 cfm
Engine Coolant capacity with radiator/exp. tank	286.8 L	75.8 gal
Engine coolant capacity	156.8 L	41.4 gal
Radiator coolant capacity	130.0 L	34.3 gal
Inlet Air		
Combustion air inlet flow rate	92.0 m³/min	3249.0 cfm
Exhaust System		
Exhaust stack gas temperature	449.2 ° C	840.6 ° F
Exhaust gas flow rate	231.8 m³/min	8185.9 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)	616 kW	35032 Btu/min
Heat rejection to exhaust (total)	1016 kW	57780 Btu/min
Heat rejection to aftercooler	159 kW	9042 Btu/min
Heat rejection to atmosphere from engine	115 kW	6540 Btu/min
Heat rejection to atmosphere from generator	57.1 kW	3247.3 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	3087 skVA	
Frame	1445	
Temperature Rise	125 ° C	225 ° 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 40ºC ambient per NEMA MG1-32.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034, ISO 3046, ISO 8528, NEMA MG 1-33, UL508A, 98/37/EC

Prime - Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO 3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 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	**5237.1 mm**	**206.18 in**
Width	**1974.9 mm**	**77.75 in**
Height	**2367.2 mm**	**93.2 in**
Weight	**12 419 kg**	**27,379 lb**

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2858788).

Performance No.: DM8222

Feature Code: 512DE6F

Gen. Arr. Number: 2523788

Source: U.S. Sourced

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