DIESEL GENERATOR SET

Imageshownmaynot reflectactualpackage.

Mission Critical Standby
STANDBY

1000 ekW 1250 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.

- 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

TURES

FUEL/EMISSIONS STRATEGY
- Low Fuel consumption

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 expansionattachments, factory designed and tested
- Flexible packaging options for easy and costeffective installation

WORLDWIDE PRODUCT SUPPORT
- Cat dealers provide extensive post sale supportincluding maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch storesoperating in 200 countries
- Reliable, rugged, durable design
- Field-proven in thousands of applicationsworldwide
- Four-stroke-cycle diesel engine combinesconsistent performance and excellent fuel economy with minimum weight

CAT GENERATOR
- Matched to the performance and outputcharacteristics of Cat engines
- Industry leading mechanical and electrical design
- Industry leading motor starting capabilities
- High Efficiency

CAT EMCP 4 CONTROL PANELS
- Simple user friendly interface and navigation
- Scalable system to meet a wide range ofcustomer needs
- Integrated Control System and Communications Gateway

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Air cleaner	
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	[ ] Exhaust mufflers (except Tier 4)

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Fuel	• Primary fuel filter with integral water separator • Secondary fuel filters • Fuel priming pump	
Generator	• Matched to the performance and outputcharacteristics of Cat engines • Load adjustment module provides engine relief uponload impact and improves laod acceptance and recovery time • IP23 protection	[ ] Oversize and premium generators [ ] Permanent magnet excitation (PMG) [ ] Internal excited (IE) [ ] Anti-condensation space heaters
Power Termination	• Bus bar	[ ] Circuit breakers, UL listed [ ] Circuit breakers, IEC compliant
Control Panel	• EMCP 4 Genset Controller	[ ] EMCP 4.2 [ ] EMCP 4.3 [ ] EMCP 4.4 [ ] Generator temperature monitoring and protection [ ] Load share module [ ] Digital I/O module [ ] Remote monitoring software
Mounting		[ ] Rubber vibration isolators
Starting/Charging		[ ] Battery chargers [ ] Oversize batteries [ ] Jacket water heater [ ] Heavy duty starting system [ ] Charging alternator [ ] Air starting motor with control and silencer (3500 & C175 models only)
General	• Paint - Caterpillar Yellow except rails and radiators gloss black	The following options are based on regional and product configuration: [ ] Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 [ ] EU Certificate of Conformance (CE) [ ] UL 2200 package [ ] CSA Certification [ ] EEC Declaration of Conformity [ ] Enclosures- sound attenuated, weather protective [ ] Automatic transfer switches (ATS) [ ] Integral & sub-base fuel tanks [ ] Integral & sub-base UL listed dual wall fuel tanks

SPECIFICATIONS

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CAT GENERATOR

Cat Generator

Frame size..... 1424

Excitation.....Internal Excitation

Pitch.....0.6667

Number of poles.....4

Number of bearings..... Single bearing

Number of Leads.....006

Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion

- Consult your Caterpillar dealer for available voltages

IP Rating.....IP23

Alignment.....Pilot Shaft

Overspeed capability.....150

Wave form Deviation (Line to Line)..... 002.00 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)

CAT DIESEL ENGINE

3512 TA, V-12, 4-Stroke Water-cooled Diesel

Bore.....170.00 mm (6.69 in)

Stroke.....190.00 mm (7.48 in)

Displacement.....51.80 L (3161.03 in^3)

Compression Ratio.....13.5:1

Aspiration.....TA

Fuel System..... Direct unit injection

Governor Type.....Woodward

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions Digital indication for:
- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- ekW, kVA, kVAR, kW-hr, %kW, PF

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence - Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51) Communications:
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- Emergency stop pushbutton Compatible with the following:
- Digital I/O module - Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8218	
Low Fuel Consumption		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	1250 kVA	
Genset Power rating with fan	1000 ekW	
Fuel Consumption		
100% load with fan	259.8 L/hr	68.6 Gal/hr 52.8
75% load with fan	199.9 L/hr	Gal/hr
50% load with fan	138.8 L/hr	36.7 Gal/hr
Cooling System[1]		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	1558 m³/min	55020 cfm
Engine Coolant capacity with radiator/exp. tank	286.8 L	75.8 gal 41.4
Engine coolant capacity	156.8 L	gal
Radiator coolant capacity	130.0 L	34.3 gal
Inlet Air		
Combustion air inlet flow rate	90.5 m³/min	3196.0 cfm
Exhaust System		
Exhaust stack gas temperature	447.7 º C	837.9 º F
Exhaust gas flow rate	227.7 m³/min	8041.2 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)	604 kW	34349 Btu/min
Heat rejection to exhaust (total)	995 kW	56586 Btu/min
Heat rejection to aftercooler	152 kW	8644 Btu/min
Heat rejection to atmosphere from engine	114 kW	6483 Btu/min
Heat rejection to atmosphere from generator	51.5 kW	2928.8 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	2883 skVA	
Frame	1424	
Temperature Rise	150 º C	270 º F
Lube System		
Sump refill with filter	310.4 L	82.0 gal

RATING DEFINITIONS AND CONDITIONS

[1] For ambient and altitude capabilities consult your Cat 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.

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Applicable Codes and Standards: AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

StandbyMission Critical Standby - Output available with varying load for the- Output available with varying duration of the interruption of the normal source power.load for the duration of the interruption of the normal

Average power output is 70% of the standby powersource power. Average power output is 85% of the standby power rating. Typical peak demand up to 100% rating. Typical operation is 200 hours per year, with of standby rated ekW for 5% of the operating time. maximum expected usage of 500 hours per year. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year. 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 35º API (16º C or 60º F) gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.).

Additional Ratings may be available for specific customer requirements. Consult your Cat representative for details.

DIMENSIONS

Package Dimensions	
Length	**Information not available at this time.**
Width	
Height	

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2678460).

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Performance No.: DM8218

Feature Code: 512DE6U

Gen. Arr. Number: 2523774

Source: European Sourced

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