DIESEL GENERATOR SET





Image shown may not reflect actual package.

CONTINUOUS 2050 ekW 2563 kVA 60 Hz 1800 rpm 13 800 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

 EPA Certified for Stationary Emergency Application (EPA Tier 2 emissions levels)

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 1,800 dealer branch stores operating in 200 countries
- The Cat® S•O•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT® 3516C-HD 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 HV GENERATOR

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

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

SEISMIC CERTIFICATION

- Seismic Certification available
- Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
 IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
- Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007
- Pre-approved by OSHPD and carries an OSP-0084-10 for use in healthcare projects in California

60 Hz 1800 rpm 13 800 Volts



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)
Fuel	Primary fuel filter with integral water separatorSecondary fuel filtersFuel priming pump	
Generator	Matched to the performance and output characteristics of Cat engines Load adjustment module provides engine relief upon load 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

60 Hz 1800 rpm 13 800 Volts



SPECIFICATIONS

CAT GENERATOR

Cat HV Generator Excitation......Permanent Magnet Number of poles.....4 Number of bearings......2 Number of Leads......006 Insulation..... Class H with tropicalization and antiabrasion - Consult your Caterpillar dealer for available voltages IP Rating.....IP23 Alignment......Closed Coupled Overspeed capability......125 Wave form Deviation (Line to Line)......002.00 Voltage regulator......3 Phase sensing with volts/Hz Voltage regulation.....Less than +/- 1/2% (steady state) Less than +/- 1/2% (w/3% speed change)

CAT DIESEL ENGINE

3516C-HD ATAAC, V-16, 4-5	Stroke Water-cooled Diesel
Bore	170.00 mm (6.69 in)
Stroke	215.00 mm (8.46 in)
Displacement	78.08 L (4764.73 in ³)
Compression Ratio	14.7:1
Aspiration	TA
Fuel System	Electronic unit injection
Governor Type	ADEM3

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

60 Hz 1800 rpm 13 800 Volts



TECHNICAL DATA

Open Generator Set 1800 rpm/60 Hz/13 800 Volts	DM8268		
EPA Certified for Stationary Emergency Application			
(EPA Tier 2 emissions levels)			
Generator Set Package Performance			
Genset Power rating @ 0.8 pf	2562.5 kVA		
Genset Power rating with fan	2050 ekW		
Fuel Consumption			
100% load with fan	549.3 L/hr	145.1 Gal/hr	
75% load with fan	435.6 L/hr	115.1 Gal/hr	
50% load with fan	316.8 L/hr	83.7 Gal/hr	
Cooling System ¹			
Air flow restriction (system)	0.12 kPa	0.48 in. water	
Air flow (max @ rated speed for radiator arrangement)	2800 m³/min	98881 cfm	
Engine Coolant capacity with radiator/exp. tank	504.0 L	133.1 gal	
Engine coolant capacity	233.0 L	61.6 gal	
Radiator coolant capacity	271.0 L	71.6 gal	
Inlet Air			
Combustion air inlet flow rate	183.8 m³/min	6490.8 cfm	
Exhaust System			
Exhaust stack gas temperature	463.6 ° C	866.5 ° F	
Exhaust gas flow rate	476.5 m³/min	16827.5 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)	739 kW	42027 Btu/min	
Heat rejection to exhaust (total)	2092 kW	118972 Btu/min	
Heat rejection to aftercooler	619 kW	35202 Btu/min	
Heat rejection to atmosphere from engine	145 kW	8246 Btu/min	
Heat rejection to atmosphere from generator	96.6 kW	5493.6 Btu/min	
Alternator ²			
Motor starting capability @ 30% voltage dip	5485 skVA		
Frame	2770		
Temperature Rise	80 ° C	144 ° F	
Lube System			
Sump refill with filter	466.0 L	123.1 gal	
Emissions (Nominal) ³			
NOx g/hp-hr	4.62 g/hp-hr		
CO g/hp-hr	.28 g/hp-hr		
HC g/hp-hr	.12 g/hp-hr		
PM g/hp-hr	.03 g/hp-hr		

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.

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.

60 Hz 1800 rpm 13 800 Volts



RATING DEFINITIONS AND CONDITIONS

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

Continuous - Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated ekW for 100% of operating hours.

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 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 Cat representative for details.

60 Hz 1800 rpm 13 800 Volts



DIMENSIONS

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

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2807050).

Performance No.: DM8268

Feature Code: 516DE6Q

Gen. Arr. Number: 3111156

Source: U.S. Sourced

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