DIESEL GENERATOR SET





Image shown may not reflect actual package.

CONTINUOUS 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

FUEL/EMISSIONS STRATEGY

Low Emissions

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® 3512B-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 SR5 GENERATOR

- Matched to the performance and output characteristics 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 of customer needs
- Integrated Control System and Communications Gateway

50 Hz 1500 rpm 400 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Single element canister type air cleaner	[] Dual element & heavy duty air cleaners
	Service indicator	[] Air inlet adapters & shut-off
Cooling	Radiator with guard	[] Radiator duct flange
	Coolant drain line with valve	[] Jacket water heater
	Fan and belt guards	
	Cat® Extended Life Coolant*	
Exhaust	Dry exhaust manifold	[] Mufflers and Silencers
	Flanged faced outlets	[] Stainless steel exhaust flex fittings
		[] Elbows, flanges, expanders & Y adapters
Fuel	Secondary fuel filters	[] Water separator
	Fuel priming pump	[] Duplex fuel filter
	Flexible fuel lines	
	• Fuel cooler*	
Generator	Class H insulation	[] Oversize & premium generators
	Cat digital voltage regulator (CDVR) with kVAR/PF	[] Winding temperature detectors
	control, 3-phase sensing	[] Bearing temperature detectors
	Reactive droop	[] Anti-condensation heaters
Power Termination	Bus bar (NEMA or IEC mechanical lug holes)	[] Circuit breakers, UL listed, 3 pole with shunt
	• Top cable entry	trip,100% rated, manual or electrically operated []
		Circuit breakers, IEC compliant, 3 or 4 pole with shunt
		trip, manual or electrically operated
		[] Bottom cable entry
		[] Power terminations can be located on the right, left
0	A DENATM O	and/or rear as an option.
Governor	• ADEM™ 3	[] Load share module
Control Panels	• EMCP 4.2	[] Option for right or left mount UIP
	User Interface panel (UIP) - wall mounted	[] Local & remote annunciator modules
	AC & DC customer wiring area (right side)	[] Digital I/O Module
	Emergency stop pushbutton	[] Generator temperature monitoring & protection
		[] Remote monitoring software
Lube	Lubricating oil and filter	[] Oil level regulator
	Oil drain line with valves	[] Deep sump oil pan
	• Fumes disposal	[] Electric & air prelube pumps
	Gear type lube oil pump	[] Manual prelube with sump pump
		[] Duplex oil filter
Mounting	• Rails - Engine / generator / radiator mounting	[] Isolator removal
	Rubber anti-vibration mounts (shipped loose)	[] Spring-type vibration isolator (shipped loose)
ai. (a		[] IBC Isolators
Starting/Charging	• 24 volt starting motor(s)	[] Battery chargers (5 or 10 amp)
	Batteries with rack and cables	[] 45 amp charging alternator
	Battery disconnect switch	[] Oversize batteries
		[] Ether starting aid
		[] Heavy duty starting motors
		[] Barring device (manual)

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SPECIFICATIONS

CAT GENERATOR

Cat Generator
Frame size
ExcitationInternal Excitation
Pitch
Number of poles4
Number of bearings2
Number of Leads006
InsulationUL 1446 Recognized Class H with
tropicalization and antiabrasion InsulationClass F with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP RatingIP23
AlignmentClosed Coupled
Overspeed capability150
Wave form Deviation (Line to Line)002.00
Voltage regulator3 Phase sensing with selectible
volts/Hz Voltage regulationLess than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)
Telephone influence factorLess than 50
Harmonic DistortionLess than 5%

CAT DIESEL ENGINE

3512B-HD TA, V-12, 4-Stroke	Water-cooled Diesel
Bore	170.00 mm (6.69 in)
Stroke	215.00 mm (8.46 in)
Displacement	58.56 L (3573.55 in³)
Compression Ratio	15.5:1
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

50 Hz 1500 rpm 400 Volts



TECHNICAL DATA

Open Generator Set 1500 rpm/50 Hz/400 Volts	DM8245		
Low Emissions			
Generator Set Package Performance	4500 11/4		
Genset Power rating @ 0.8 pf	1500 kVA		
Genset Power rating with fan	1200 ekW		
Coolant to aftercooler		0005	
Coolant to aftercooler temp max	30 ° C	86 ° F	
Fuel Consumption			
100% load with fan	320.1 L/hr	84.6 Gal/hr	
75% load with fan	242.4 L/hr	64.0 Gal/hr	
50% load with fan	168.8 L/hr	44.6 Gal/hr	
Cooling System ¹			
Air flow restriction (system)	0.12 kPa	0.48 in. water	
Engine Coolant capacity with radiator/exp. tank	305.8 L	80.8 gal	
Engine coolant capacity	156.8 L	41.4 gal	
Radiator coolant capacity	149.0 L	39.4 gal	
Inlet Air			
Combustion air inlet flow rate	119.3 m³/min	4213.0 cfm	
Exhaust System			
Exhaust stack gas temperature	408.8 ° C	767.8 ° F	
Exhaust gas flow rate	285.3 m³/min	10075.3 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)	464 kW	26388 Btu/min	
Heat rejection to exhaust (total)	1181 kW	67163 Btu/min	
Heat rejection to aftercooler	345 kW	19620 Btu/min	
Heat rejection to atmosphere from engine	111 kW	6313 Btu/min	
Heat rejection to atmosphere from generator	56.5 kW	3213.1 Btu/min	
Alternator ²			
Motor starting capability @ 30% voltage dip	4266 skVA		
Frame	1602		
Temperature Rise	105 ° C	189 ° F	
Lube System			
Sump refill with filter	310.4 L	82.0 gal	
Emissions (Nominal) ³			
NOx mg/nm3	1560.6 mg/nm ³		
CO mg/nm3	265.3 mg/nm ³		
HC mg/nm3	74.6 mg/nm ³		
PM mg/nm3	26 mg/nm³		

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 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.

50 Hz 1500 rpm 400 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 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. Continuous power in accordance with ISO3046. Continuous ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature below the alarm 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 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 Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

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DIMENSIONS

Package Dimensions				
Length	5394.9 mm	212.4 in		
Width	2286.0 mm	90 in		
Height	2342.0 mm	92.2 in		
Weight	12 642 kg	27,871 lb		

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2882685).

Performance No.: DM8245

Feature Code: 512DE6Z

Gen. Arr. Number: 2523838

Source: U.S. Sourced

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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