3512B Diesel Generator Set

Electric Power



The 3512B generator set has been developed for a wide range of applications, from emergency standby installations such as healthcare and datacenters to continuously powering remote installations. The packages can be optimized for performance that matters to you with either low emissions or low fuel consumption versions available. Backed by the worldwide network of Cat dealers ready to support your operation with technical support, service, parts, and warranty, Cat generator sets will provide the reliability and durability you expect.

Specifications

Generator Set Specifications	
Minimum Rating	1320 kVA
Maximum Rating	1750 kVA
Voltage	400 to 415 Volts
Frequency	50 Hz
Speed	1500 RPM
Duty Cycle	Continuous, Prime, Standby, Mission Critical

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption, Low Emissions

Engine Specifications		
Engine Model	3512B TA, V-12, 4-Stroke Water-Cooled Diesel	
Bore	170 mm	6.69 in
Displacement (Std)	51.8 L	3161.03 in3
Displacement (HD)	58.56 L	3573.55 in3
Stroke (Std)	190 mm	7.48 in
Stroke (HD)	215 mm	8.46 in
Compression Ratio	14.0:1 Std 15.5:1 HD	
Aspiration	TA	
Governor Type	ADEM™A3	
Fuel System	Electronic Unit Injection	
Air Inlet	Single element canister style with service indicator	

Engine Specificatons	
Exhaust Flange Size	203.2 mm (8.0 in)

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Benefits and Features

Cat Generator Set Package

Cat generator set packages have been fully prototype tested, and certified torsional vibration analysis reports are available. The packages are designed to accept 100% load in one step, meet the NFPA 110 requirement for loading, and conform to the ISO 8528-5 steady state and transient response requirements

Cat Diesel Engine

The four cycle Cat diesel engine combines consistent performance with excellent fuel economy and transient response that meets or exceeds ISO 8528-5. The engines have been designed and built for a wide range of applications and can be optimized for low fuel consumption or low emissions. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide from emergency standby installations to continuously operating power plants.

Cooling System

The cooling system has been designed to operate in standard ambient temperatures up to 50°C (122°F), with optional high ambient radiators available. The factory installed cooling system has been designed and tested to ensure proper generator set cooling, and includes the radiator, fan, belts, and all guarding installed as standard. Contact your Cat Dealer for specific ambient and altitude capabilities.

Generators

The generators used on Cat packages have been designed and tested to work with the Cat engine. The generators are built with robust Class H insulation and provide industry leading motor starting capability. Random wound generators provide good generator performance in a majority of applications and form wound is available for harsh mechanical and electrical environments.

Cat EMCP Control Panel

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP4 systems can be further customized to meet your needs through programming and expansion modules.

World Wide 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 Caterpillar S•O•S℠ program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

Optional Equipment

Exhaust

- Exhaust mufflers

Generator

- Anti-condensation heater
- Internal excitation (IE)
- Permanent magnet excitation (PMG)
- Oversize and premium generators

Power Termination

- Circuit breakers, UL listed
- Circuit breakers, IEC compliant

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Control Panels

- EMCP 4.2
- EMCP 4.3
- EMCP 4.4
- Generator temperature monitoring & protection
- Load share module
- Digital I/O module
- Remote monitoring software

Mounting

- Rubber anti-vibration mounts
- Spring-type vibration isolator
- IBC isolators

Starting/Charging

- Battery chargers
- Oversize batteries
- Jacket water heater
- Heavy-duty starting system
- Charging alternator
- Air starting motor with control and silencer

General

- 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
- UL 2200 package
- EU Certificate of Conformance (CE)
- 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

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Rating Type: PRIME

Fuel Strategy: LOW FUEL CONSUMPTION



Image shown may not reflect actual configuration

3512B
1088 ekW/ 1360 kVA
50 Hz/ 1500 rpm/ 400 V

	Metric	English
Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	1088 ekW	
Genset Power Rating	1360 kVA	
Aftercooler (Separate Circuit)	30.0 ° C	86.0 ° F
Fuel Consumption		
100% Load with Fan	280.0 L/hr	74.0 gal/hr
75% Load with Fan	212.1 L/hr	56.0 gal/hr
50% Load with Fan	150.1 L/hr	39.6 gal/hr
25% Load with Fan	91.4 L/hr	24.1 gal/hr
Cooling System[1]		
Engine Coolant Capacity	N/A	N/A
Inlet Air		
Combustion Air Inlet Flow Rate	100.7 m³/min	3555.7 cfm
Max. Allowable Combustion Air Inlet Temp	45 ° C	114 ° F
Exhaust System		
Exhaust Stack Gas Temperature	389.0 ° C	732.2 ° F
Exhaust Gas Flow Rate	232.6 m³/min	8213.1 cfm
Exhaust System Backpressure (Maximum Allowable)	N/A	N/A

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Heat Rejection		
Heat Rejection to Jacket Water	447 kW	25420 Btu/min
Heat Rejection to Exhaust (Total)	940 kW	53456 Btu/min
Heat Rejection to Aftercooler	281 kW	15979 Btu/min
Heat Rejection to Atmosphere from Engine	107 kW	6085 Btu/min
Heat Rejection to Atmosphere from Generator	50 kW	2849 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	3658 skVA
Current	1963 amps
Frame Size	1447
Excitation	IE
Temperature Rise	125 ° C

Emissions (Nominal)[3]		
NOx	3295.1 mg/Nm³	6.7 g/hp-hr
CO	714.9 mg/Nm³	1.5 g/hp-hr
HC	79.6 mg/Nm³	0.2 g/hp-hr
PM	33.5 mg/Nm³	0.1 g/hp-hr

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 40° 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.

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Applicable Codes and Standards:
AS1359, CSA C22.2 No100-04, UL142,UL489, UL869, UL2200,
NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528,
NEMA MG1-22,NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

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.

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 (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, contact your Cat representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Cat dealer.

www.Cat-ElectricPower.com

Performance No.: DM8030-01

Feature Code: 512DR7W

Generator Arrangement: 2523806

Date: 10/29/2016

Source Country: U.S.

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