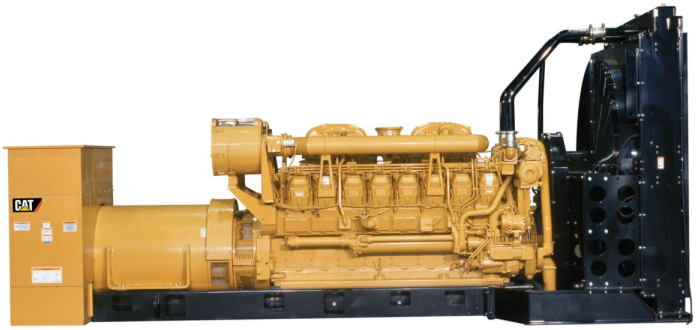
3516B Generator Set

Electric Power



The 3516B 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	1600 ekW (1750 kVA)
Maximum Rating	2000 ekW (2500 kVA)
Voltage	400 to 11,000 Volts
Frequency	50 Hz
Speed	1500 RPM
Duty Cycle	Standby, Prime, Continuous

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

Engine Specifications		
Engine Model	3516B TA, V-16, 4-Stroke Water-Cooled Diesel	
Bore	170 mm	6.69 in
Displacement (Std)	69 L	4210.64 in3
Displacement (HD)	78.08 L	4764.73 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™3	
Fuel System	Electronic unit injection	
Exhaust Flange Size	203.2 mm (8.0 in)	
Air Inlet	Single element canister style with service indicator	

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

Engine Options

- Air Cleaner: [ ] Single element air cleaners [ ] Dual element air cleaners [ ] Heavy duty air cleaners
- Muffler: [ ] Industrial Grade
- Batteries: [ ] Standard (1400 CCA) [ ] Heavy Duty (2800 CCA)
- Starting Motors: [ ] Standard [ ] Heavy Duty
- Battery Charger: [ ] 10A [ ] 20A [ ] 35A
- Starting Aids: [ ] 220V 50 Hz Jacket Water Heater
- Vibration Isolator: [ ] Rubber anti-vibration mounts (90% efficient) [ ] Spring type anti-vibration mounts (95% efficient)

Control System

- Controller: [ ] EMCP 4.2 [ ] EMCP 4.3 [ ] EMCP 4.4
- Local annunciator module: [ ] NFPA 110 [ ] Custom

- Remote annunciator module: [ ] NFPA 110 [ ] Custom
- Additional Options: [ ] Expansion I/O module [ ] Remote monitoring software

Alternators

- Temperature Rise (over 40°C ambient): [ ] 150°C [ ] 125°C [ ] 105°C [ ] 80°C
- Winding: [ ] Random [ ] Form
- Excitation: [ ] Permanent Magnet (PM) excited [ ] Internally Excited (IE)
- Alternator attachments: [ ] Anti-condensation heaters [ ] Generator stator and bearing temperature monitoring & protection

Power Termination

- Power Termination: [ ] Bus Bar [ ] Circuit Breaker
- Circuit Breaker rating: [ ] 2000A [ ] 2500A [ ] 3200A [ ] 4000A
- Circuit breaker trip unit: [ ] LSI [ ] LSIG [ ] LSIG-P
- Circuit breaker operation: [ ] Electrical

Extended Service Contract (ESC)

- Extended Service Contract (ESC): [ ] 2 Year [ ] 3 Year [ ] 5 Year

ELECTRIC POWER - Technical Spec Sheet
STANDARD

3516B

1600 ekW/ 2000 kVA/ 50 Hz/ 1500 rpm/ 11000 V/ 0.8 Power Factor

Rating Type: CONTINUOUS

Fuel Strategy: LOW FUEL CONSUMPTION

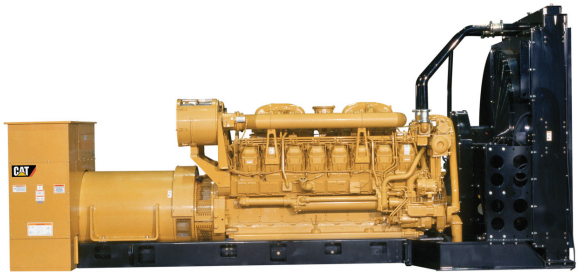


Image shown may not reflect actual configuration

3516B

1600 ekW/ 2000 kVA

50 Hz/ 1500 rpm/ 11000 V

	Metric	English
Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	1600 ekW	
Genset Power Rating	2000 kVA	
Aftercooler (Separate Circuit)	90.0 ° C	194.0 ° F
Fuel Consumption		
100% Load with Fan	409.1 L/hr	108.1 gal/hr
75% Load with Fan	305.3 L/hr	80.6 gal/hr
50% Load with Fan	213.8 L/hr	56.5 gal/hr
25% Load with Fan	122.9 L/hr	32.5 gal/hr
Cooling System[1]		
Engine Coolant Capacity	233.0 L	61.6 gal
Inlet Air		
Combustion Air Inlet Flow Rate	129.7 m³/min	4579.9 cfm
Max. Allowable Combustion Air Inlet Temp	99 ° C	210 ° F
Exhaust System		
Exhaust Stack Gas Temperature	508.8 ° C	947.8 ° F
Exhaust Gas Flow Rate	356.7 m³/min	12595.6 cfm
Exhaust System Backpressure (Maximum Allowable)	6.7 kPa	27.0 in. water

Rating Type: CONTINUOUS

Fuel Strategy: LOW FUEL CONSUMPTION

Heat Rejection		
Heat Rejection to Jacket Water	640 kW	36397 Btu/min
Heat Rejection to Exhaust (Total)	1646 kW	93608 Btu/min
Heat Rejection to Aftercooler	239 kW	13592 Btu/min
Heat Rejection to Atmosphere from Engine	147 kW	8360 Btu/min
Heat Rejection to Atmosphere from Generator	68 kW	3890 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	4196 skVA
Current	105 amps
Frame Size	2770
Excitation	PM
Temperature Rise	105 ° C

Emissions (Nominal)[3]		
NOx	3446.1 mg/Nm³	7.1 g/hp-hr
CO	163.3 mg/Nm³	0.3 g/hp-hr
HC	70.7 mg/Nm³	0.1 g/hp-hr
PM	14.3 mg/Nm³	0.0 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.

Rating Type: CONTINUOUS

Fuel Strategy: LOW FUEL CONSUMPTION

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.

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 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.: DM7972-01

Feature Code: 516DR8A

Generator Arrangement: 2524246

Date: 08/30/2016

Source Country: CHINA