



The 3516E generator set has been developed for a wide range of applications like emergency standby installations such as healthcare and datacenters. 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	2400 ekW (3000 kVA)
Maximum Rating	2480 ekW (3100 kVA)
Voltage	380 - 11,000 Volts
Frequency	50 Hz
Speed	1500 RPM

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption
Duty Cycle	Standby

Engine Specifications		
Engine Model	3516E SCAC, V-16, 4-Stroke Water-Cooled Diesel	
Compression Ratio	14:3:1	
Exhaust Flange Size	254 mm	10.0 in
Aspiration	Turbo Aftercooled	
Governor Type	ADEM™ A5	
Fuel System	Electronic Unit Injection	
Bore	170 mm	6.69 in
Displacement	78.08 L	4764.73 in ³
Stroke	215 mm	8.46 in

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 requirements for loading, and conform to the ISO 8828-5 steady state and transient response requirements.

Cat Diesel Engines

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 are optimized for low fuel consumption. The engines feature a reliable, rugged, and durable design that has been field proven in thousands of applications worldwide from emergency standby installations.

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. Form wound generators are ideally suited 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•SSM 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
- Muffler: Industrial Grade (15 dBA)
- Starters: Standard
- Batteries: Standard Heavy Duty
- Battery Charger: 20A 35A 50A
- Jacket water heater: 220V single phase
- Vibration isolators: Rubber mounts (90% efficient) Spring type 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
- Attachments: Expansion I/O module Remote monitoring software

Alternators

- Temperature Rise (over 40°C ambient): 150°C 125°C 105°C 80°C
- Winding: Form
- Excitation: Permanent magnet excitation (PMG)
- Attachments: Anti-condensation heaters Alternator stator and bearing temperature monitoring & protection

Power Termination

- Power Termination: Bus bars Circuit breaker (manually operated)
 Circuit breaker (electrically operated)
- Cable Entry: Top Bottom

Extended Service Contract (ESC)

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

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3516E
2400 ekW/ 3000 kVA/ 50 Hz/ 1500 rpm/ 11000 V/ 0.8 Power Factor

Rating Type: MISSION CRITICAL STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION



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2400 ekW/ 3000 kVA
50 Hz/ 1500 rpm/ 11000 V

Image shown may not reflect actual configuration

Metric English

Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	2400 ekW	
Genset Power Rating	3000 kVA	
Aftercooler (Separate Circuit)	48.0 ° C	118.4 ° F

Fuel Consumption		
100% Load with Fan	614.6 L/hr	162.4 gal/hr
75% Load with Fan	466.7 L/hr	123.3 gal/hr
50% Load with Fan	330.6 L/hr	87.3 gal/hr
25% Load with Fan	196.4 L/hr	51.9 gal/hr

Cooling System¹		
Engine Coolant Capacity	233.0 L	61.6 gal

Inlet Air		
Combustion Air Inlet Flow Rate	195.3 m ³ /min	6897.4 cfm
Max. Allowable Combustion Air Inlet Temp	60 ° C	141 ° F

Exhaust System		
Exhaust Stack Gas Temperature	484.7 ° C	904.5 ° F
Exhaust Gas Flow Rate	513.5 m ³ /min	18132.2 cfm
Exhaust System Backpressure (Maximum Allowable)	6.7 kPa	27.0 in. water



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Heat Rejection		
Heat Rejection to Jacket Water	1010 kW	57430 Btu/min
Heat Rejection to Exhaust (Total)	2315 kW	131673 Btu/min
Heat Rejection to Aftercooler	N/A	N/A
Heat Rejection to Atmosphere from Engine	158 kW	8968 Btu/min
Heat Rejection to Atmosphere from Generator	137 kW	7791 Btu/min

Alternator²	
Motor Starting Capability @ 30% Voltage Dip	6044 skVA
Current	157.5 amps
Frame Size	3020
Excitation	PM
Temperature Rise	130 ° C

Emissions (Nominal)³		
NOx	3581.7 mg/Nm ³	7.2 g/hp-hr
CO	190.4 mg/Nm ³	0.4 g/hp-hr
HC	20.4 mg/Nm ³	0.0 g/hp-hr
PM	7.0 mg/Nm ³	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.

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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, 72/23/EEC, 98/37/EC, 2004/108/EC

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

MISSION CRITICAL STANDBY:Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the standby power rating. Typical peak demand up to 100% of standby rated ekW for 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 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 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.

www.Cat-ElectricPower.com

Performance No.: EM1316-00

Feature Code: DTO

Generator Arrangement: 3753668

Date: 09/19/2015

Source Country: U.S.

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