



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 <sup>3</sup> |
| 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•S<sup>SM</sup> 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/ 400 V/ 0.8 Power Factor**

Rating Type: **STANDBY**

Fuel Strategy: **LOW FUEL CONSUMPTION**



**3516E**  
**2400 ekW/ 3000 kVA**  
**50 Hz/ 1500 rpm/ 400 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 System<sup>1</sup>**

|                         |         |          |
|-------------------------|---------|----------|
| Engine Coolant Capacity | 233.0 L | 61.6 gal |
|-------------------------|---------|----------|

**Inlet Air**

|  |                           |            |
|--|---------------------------|------------|
| Combustion Air Inlet Flow Rate           | 195.3 m <sup>3</sup> /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 <sup>3</sup> /min | 18132.2 cfm    |
| Exhaust System Backpressure (Maximum Allowable) | 6.7 kPa                   | 27.0 in. water |



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| <b>Heat Rejection</b>                       |         |                |
|---|---------|----------------|
| 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 | 92 kW   | 5243 Btu/min   |

| <b>Alternator<sup>2</sup></b>               |           |
|---|-----------|
| Motor Starting Capability @ 30% Voltage Dip | 6187 skVA |
| Current                                     | 4330 amps |
| Frame Size                                  | 1866      |
| Excitation                                  | PM        |
| Temperature Rise                            | 150 ° C   |

| <b>Emissions (Nominal)<sup>3</sup></b> |                           |             |
|--|---------------------------|-------------|
| NOx                                    | 3581.7 mg/Nm <sup>3</sup> | 7.2 g/hp-hr |
| CO                                     | 190.4 mg/Nm <sup>3</sup>  | 0.4 g/hp-hr |
| HC                                     | 20.4 mg/Nm <sup>3</sup>   | 0.0 g/hp-hr |
| PM                                     | 7.0 mg/Nm <sup>3</sup>    | 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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**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, 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.

**STANDBY:**Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. 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](http://www.Cat-ElectricPower.com)

Performance No.: EM1314-00

Feature Code: DTO

Generator Arrangement: 3723064

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Source Country: U.S.

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