

# Cat® 3516E

## Diesel Generator Sets

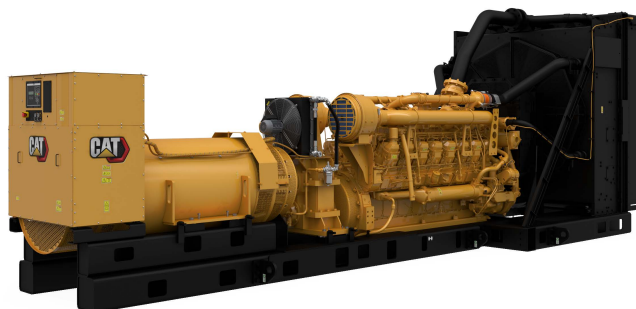


Image shown may not reflect actual configuration

|                                     |             |
|-------------------------------------|-------------|
| Bore – mm (in)                      | 170 (6.69)  |
| Stroke – mm (in)                    | 215 (8.46)  |
| Displacement – L (in <sup>3</sup> ) | 78.1 (4765) |
| Compression Ratio                   | 14.7:1      |
| Aspiration                          | ATAAC       |
| Fuel System                         | EUI         |
| Governor Type                       | ADEM™ A5    |

| Standby / Mission Critical –<br>50 Hz kVA (ekW) | Emissions Performance                     |
|-------------------------------------------------|-------------------------------------------|
| 3500 (2800)                                     | Tier 2<br>(U.S. EPA Stationary Emergency) |
| 3000 (2400)                                     | Low NOx (< 2000 mg NOx)                   |

## Features

### Cat® Diesel Engine

- Tier 2 (U.S. EPA Stationary Emergency) emissions standards or Low NOx (< 2000 mg NOx)
- Reliable performance proven in thousands of applications worldwide

### Generator Set Package

- Accepts 100% block load in one step and meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

### Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

### Cooling System

- Cooling systems available to operate in ambient temperatures up to 50°C (122°F)
- Tested to ensure proper generator set cooling

### EMCP 4 Control Panels

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

### Warranty

- 24 months/1000-hour warranty for standby ratings
- Extended service protection is available to provide extended coverage options

### Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

### Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

## Standard and Optional Equipment

### Engine

#### Air Cleaner

- ☐ Single element
- ☐ Dual element

#### Muffler

- ☐ Industrial grade (15 dB)

#### Starting

- ☐ Standard batteries
- ☐ Oversized batteries
- ☐ Standard electric starter(s)
- ☐ Heavy duty electric starter(s)
- ☐ Air starter(s)
- ☐ Jacket water heater

### Alternator

#### Output voltage

- ☐ 380V   ☐ 6600V
- ☐ 400V   ☐ 6900V
- ☐ 415V   ☐ 10000V
- ☐ 3300V   ☐ 10500V
- ☐ 6300V   ☐ 11000V

#### Temperature Rise (over 40°C ambient)

- ☐ 150°C
- ☐ 125°C/130°C
- ☐ 105°C
- ☐ 80°C

#### Winding type

- ☐ Random wound
- ☐ Form wound

#### Excitation

- ☐ Internal excitation (IE)
- ☐ Permanent magnet (PM)

#### Attachments

- ☐ Anti-condensation heater
- ☐ Stator and bearing temperature monitoring and protection

### Power Termination

#### Type

- ☐ Bus bar
- ☐ Circuit breaker
- ☐ 1600A   ☐ 2000A
- ☐ 2500A   ☐ 3000A
- ☐ 3200A   ☐ 4000A
- ☐ 5000A
- ☐ UL   ☐ IEC
- ☐ 3-pole   ☐ 4-pole
- ☐ Manually operated
- ☐ Electrically operated

#### Trip Unit

- ☐ LSI   ☐ LSI-G
- ☐ LSIG-P

### Control System

#### Controller

- ☐ EMCP 4.2B
- ☐ EMCP 4.3
- ☐ EMCP 4.4

#### Attachments

- ☐ Local annunciator module
- ☐ Remote annunciator module
- ☐ Expansion I/O module
- ☐ Remote monitoring software

### Charging

- ☐ Battery charger – 10A
- ☐ Battery charger – 20A
- ☐ Battery charger – 35A

### Vibration Isolators

- ☐ Rubber
- ☐ Spring
- ☐ Seismic rated

### Cat Connect

#### Connectivity

- ☐ Ethernet
- ☐ Cellular

### Extended Service Options

#### Terms

- ☐ 2 year (prime)
- ☐ 3 year
- ☐ 5 year
- ☐ 10 year

#### Coverage

- ☐ Silver
- ☐ Gold
- ☐ Platinum
- ☐ Platinum Plus

### Ancillary Equipment

- ☐ Automatic transfer switch (ATS)
- ☐ Paralleling switchgear
- ☐ Paralleling controls

### Certifications

- ☐ EU & GB Declaration of Conformity
- ☐ EU & GB Declaration of Incorporation
- ☐ Eurasian Conformity (EAC)

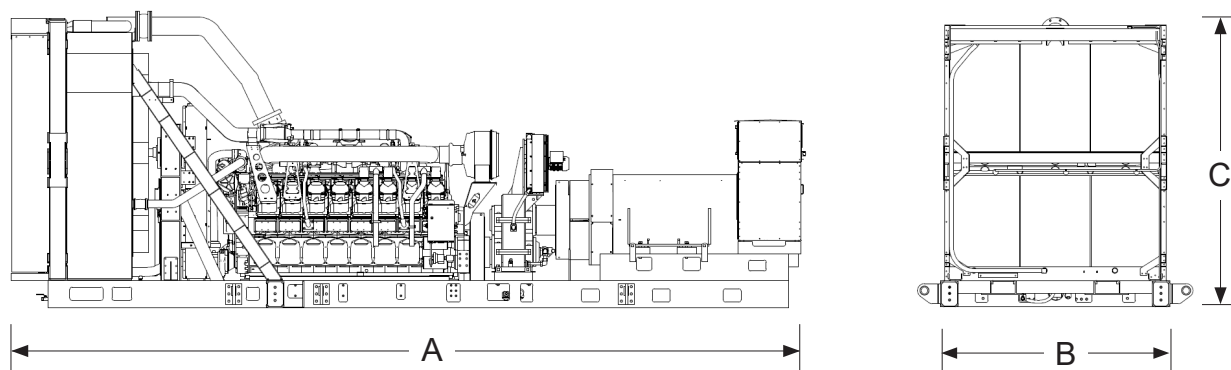
**Note:** Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

## Package Performance

| Performance                                                       | Standby          |           | Mission Critical |           | Standby       |           | Mission Critical |           |
|-------------------------------------------------------------------|------------------|-----------|------------------|-----------|---------------|-----------|------------------|-----------|
| Engine Speed                                                      | 1808 rpm         |           | 1808 rpm         |           | 1808 rpm      |           | 1808 rpm         |           |
| Frequency                                                         | 50 Hz            |           | 50 Hz            |           | 50 Hz         |           | 50 Hz            |           |
| Gen set power rating with fan                                     | 2800 ekW         |           | 2800 ekW         |           | 2400 ekW      |           | 2400 ekW         |           |
| Gen set power rating with fan @ 0.8 power factor                  | 3500 kVA         |           | 3500 kVA         |           | 3000 kVA      |           | 3000 kVA         |           |
| Emissions                                                         | Tier 2 (EPA ESE) |           | Tier 2 (EPA ESE) |           | < 2000 mg NOx |           | < 2000 mg NOx    |           |
| Performance number                                                | EM2118-03        |           | EM2120-02        |           | EM2820-03     |           | EM2822-01        |           |
| Fuel Consumption                                                  |                  |           |                  |           |               |           |                  |           |
| 100% load with fan – L/hr (gal/hr)                                | 742.7            | (196.2)   | 742.7            | (196.2)   | 646.4         | (170.7)   | 646.4            | (170.7)   |
| 75% load with fan – L/hr (gal/hr)                                 | 559.7            | (147.8)   | 559.7            | (147.8)   | 488.1         | (128.9)   | 488.1            | (128.9)   |
| 50% load with fan – L/hr (gal/hr)                                 | 408.2            | (107.8)   | 408.2            | (107.8)   | 357.9         | (94.6)    | 357.9            | (94.6)    |
| 25% load with fan – L/hr (gal/hr)                                 | 240.2            | (63.5)    | 240.2            | (63.5)    | 213.3         | (56.4)    | 213.3            | (56.4)    |
| Cooling System                                                    |                  |           |                  |           |               |           |                  |           |
| Radiator air flow restriction (system) – kPa (in. water)          | 0.12             | (0.48)    | 0.12             | (0.48)    | 0.12          | (0.48)    | 0.12             | (0.48)    |
| Radiator air flow – m³/min (cfm)                                  | 3026             | (106862)  | 3026             | (106862)  | 3026          | (106862)  | 3026             | (106862)  |
| Engine coolant capacity – L (gal)                                 | 233.2            | (61.6)    | 233.2            | (61.6)    | 233.2         | (61.6)    | 233.2            | (61.6)    |
| Radiator coolant capacity – L (gal)                               | 201.5            | (53.2)    | 201.5            | (53.2)    | 201.5         | (53.2)    | 201.5            | (53.2)    |
| Total coolant capacity – L (gal)                                  | 434.7            | (114.8)   | 434.7            | (114.8)   | 434.7         | (114.8)   | 434.7            | (114.8)   |
| Inlet Air                                                         |                  |           |                  |           |               |           |                  |           |
| Combustion air inlet flow rate – m³/min (cfm)                     | 240.6            | (8495.3)  | 240.6            | (8495.3)  | 220.7         | (7792.3)  | 220.7            | (7792.3)  |
| Exhaust System                                                    |                  |           |                  |           |               |           |                  |           |
| Exhaust stack gas temperature – °C (°F)                           | 489.6            | (913.3)   | 489.6            | (913.3)   | 436.7         | (818.1)   | 436.7            | (818.1)   |
| Exhaust gas flow rate – m³/min (cfm)                              | 649.5            | (22935.1) | 649.5            | (22935.1) | 549.4         | (19398.1) | 549.4            | (19398.1) |
| Exhaust system backpressure (maximum allowable) – kPa (in. water) | 6.7              | (27.0)    | 6.7              | (27.0)    | 6.7           | (27.0)    | 6.7              | (27.0)    |
| Heat Rejection                                                    |                  |           |                  |           |               |           |                  |           |
| Heat rejection to jacket water – kW (Btu/min)                     | 918              | (52221)   | 918              | (52221)   | 802           | (45584)   | 802              | (45584)   |
| Heat rejection to exhaust (total) – kW (Btu/min)                  | 2961             | (168368)  | 2961             | (168368)  | 2561          | (145654)  | 2561             | (145654)  |
| Heat rejection to aftercooler – kW (Btu/min)                      | 1013             | (57585)   | 1013             | (57585)   | 831           | (47265)   | 831              | (47265)   |
| Heat rejection to atmosphere from engine – kW (Btu/min)           | 167              | (9477)    | 167              | (9477)    | 225           | (12816)   | 225              | (12816)   |
| Heat rejection from alternator – kW (Btu/min)                     | 105              | (5948)    | 105              | (5948)    | 92            | (5243)    | 92               | (5243)    |
| Emissions* (Nominal) - Full Load                                  |                  |           |                  |           |               |           |                  |           |
| NOx mg/Nm³ (g/hp-h)                                               | 2232.3           | (4.98)    | 2232.3           | (4.98)    | 1785.6        | (3.77)    | 1785.6           | (3.77)    |
| CO mg/Nm³ (g/hp-h)                                                | 408.2            | (0.88)    | 408.2            | (0.88)    | 329.8         | (0.70)    | 329.8            | (0.70)    |
| HC mg/Nm³ (g/hp-h)                                                | 25.3             | (0.06)    | 25.3             | (0.06)    | 33.5          | (0.08)    | 33.5             | (0.08)    |
| PM mg/Nm³ (g/hp-h)                                                | 22.9             | (0.06)    | 22.9             | (0.06)    | 35.7          | (0.09)    | 35.7             | (0.09)    |
| Emissions* (Potential Site Variation) - Full Load                 |                  |           |                  |           |               |           |                  |           |
| NOx mg/Nm³ (g/hp-h)                                               | 2678.8           | (5.98)    | 2678.8           | (5.98)    | 1999.9        | (4.23)    | 1999.9           | (4.23)    |
| CO mg/Nm³ (g/hp-h)                                                | 571.5            | (1.24)    | 571.5            | (1.24)    | 593.6         | (1.26)    | 593.6            | (1.26)    |
| HC mg/Nm³ (g/hp-h)                                                | 33.6             | (0.08)    | 33.6             | (0.08)    | 44.6          | (0.11)    | 44.6             | (0.11)    |
| PM mg/Nm³ (g/hp-h)                                                | 32.1             | (0.08)    | 32.1             | (0.08)    | 49.9          | (0.13)    | 49.9             | (0.13)    |

\*mg/Nm³ levels are corrected to 5% O<sub>2</sub>. Contact your local Cat dealer for further information.

## Weights and Dimensions



| Standby Rating<br>kVA | Dim "A"<br>mm (in) | Dim "B"<br>mm (in) | Dim "C"<br>mm (in) | Dry Weight<br>kg (lb) |
|-----------------------|--------------------|--------------------|--------------------|-----------------------|
| 3500                  | 9224 (363.1)       | 2460 (104.0)       | 3342 (131.6)       | 24 000 (52,911)       |
| 3000                  | 8973 (353.3)       | 2460 (104.0)       | 3342 (131.6)       | 21 600 (47,620)       |

**Note:** For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

## Ratings Definitions

### 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 rated kW. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

### Mission Critical

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the mission critical rated kW. Typical peak demand up to 100% of rated kW for up to 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

### Applicable Codes and Standards

AS 1359, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU and facilitates compliance to NFPA 37, NFPA 70, NFPA 99, NFPA 110.

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

### Data Center Applications

- All ratings Tier III/Tier IV compliant per Uptime Institute requirements.
- All ratings ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

### Fuel Rates

Fuel consumption reported in accordance with ISO 3046-1, 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 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal.) All fuel consumption values refer to rated engine power.

[www.cat.com/electricpower](http://www.cat.com/electricpower)

©2022 Caterpillar  
All rights reserved.

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