

# 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 (4766)
Compression Ratio	14.0:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A5

Prime-DCP 50 Hz kVA (kW)	Emissions Performance
2750 (2200)	Optimized for Low Fuel Consumption

### Features

#### Cat® Diesel Engine

- Designed and optimized for low fuel consumption
- 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

- 12 months/unlimited hour warranty for prime-DCP 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
- Heavy duty

#### Muffler

- Industrial grade (15 dB)
- Residential grade (25 dB)
- Critical grade (35 dB)

#### Starting

- Standard batteries
- Oversized batteries
- Standard electric starter(s)
- Dual electric starter(s)
- Jacket water heater

### Alternator

#### Output voltage

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

#### 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
- 2000A     4000A
- 2500A     5000A
- 3200A
- IEC
- 3-pole
- 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

- GB
- GB
- GB
- V^

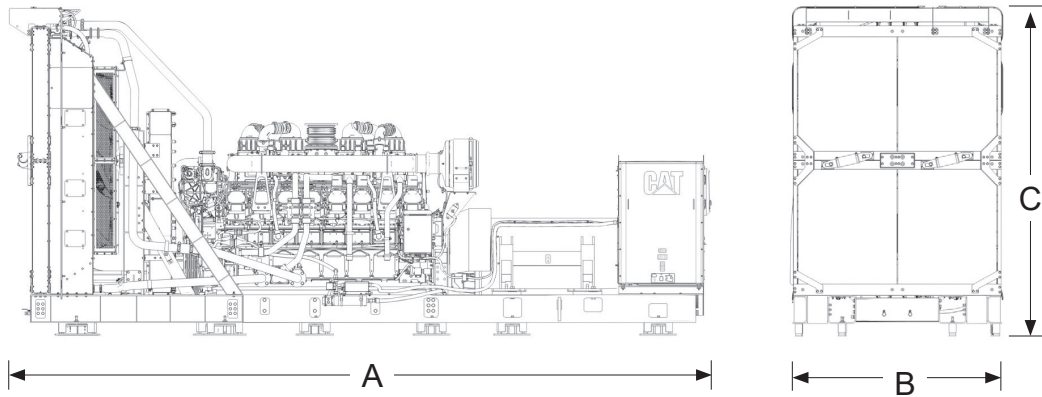
**Note:** Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

## Package Performance

<b>Performance</b>	<b>Prime-DCP</b>	
Frequency	50 Hz	
Gen set power rating with fan	2200 ekW	
Gen set power rating with fan @ 0.8 power factor	2750 kVA	
Emissions	Low Fuel	
Performance number	EM5839-00	
<b>Fuel Consumption</b>		
100% load with fan – L/hr (gal/hr)	545.9	(144.2)
75% load with fan – L/hr (gal/hr)	418.0	(110.4)
50% load with fan – L/hr (gal/hr)	299.2	(79.0)
25% load with fan – L/hr (gal/hr)	178.6	(47.2)
<b>Cooling System</b>		
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)
Radiator air flow – m <sup>3</sup> /min (cfm)	2534	(89487)
Engine coolant capacity – L (gal)	233.0	(61.6)
Radiator coolant capacity – L (gal)	266.0	(69.0)
Total coolant capacity – L (gal)	499.0	(130.6)
<b>Inlet Air</b>		
Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)	176.8	(6243.8)
<b>Exhaust System</b>		
Exhaust stack gas temperature – °C (°F)	494.6	(922.3)
Exhaust gas flow rate – m <sup>3</sup> /min (cfm)	469.4	(16576.4)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)
<b>Heat Rejection</b>		
Heat rejection to jacket water – kW (Btu/min)	959	(54562)
Heat rejection to exhaust (total) – kW (Btu/min)	2140	(121675)
Heat rejection to aftercooler – kW (Btu/min)	413	(29156)
Heat rejection to atmosphere from engine – kW (Btu/min)	154	(8752)
Heat rejection from alternator – kW (Btu/min)	92	(5232)
<b>Emissions* (Nominal)</b>		
NOx mg/Nm <sup>3</sup> (g/hp-h)	3767.2	(7.48)
CO mg/Nm <sup>3</sup> (g/hp-h)	354.9	(0.67)
HC mg/Nm <sup>3</sup> (g/hp-h)	18.5	(0.05)
PM mg/Nm <sup>3</sup> (g/hp-h)	8.1	(0.02)
<b>Emissions* (Potential Site Variation)</b>		
NOx mg/Nm <sup>3</sup> (g/hp-h)	4520.6	(8.98)
CO mg/Nm <sup>3</sup> (g/hp-h)	638.9	(1.20)
HC mg/Nm <sup>3</sup> (g/hp-h)	24.6	(0.06)
PM mg/Nm <sup>3</sup> (g/hp-h)	11.3	(0.03)

\*mg/Nm<sup>3</sup> levels are corrected to 5% O<sub>2</sub>. Contact your local Cat dealer for further information.

## Weights and Dimensions



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
7538 (296.8)	2216 (87.2)	3391 (133.5)	19 750 (43,541)

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

## Ratings Definitions

### Prime-DCP

For data center applications only. Prime-DCP power output available with varying load for unlimited time. Average power output is not to exceed 100% of prime-DCP rated kW. Typical peak demand is 100% of the prime-DCP rated kW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 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

- ISO 8528-1 Data Center Power (DCP) compliant per Cat diesel generator set prime-DCP rating.
- 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)

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