

Cat® 3516E

Diesel Generator Sets

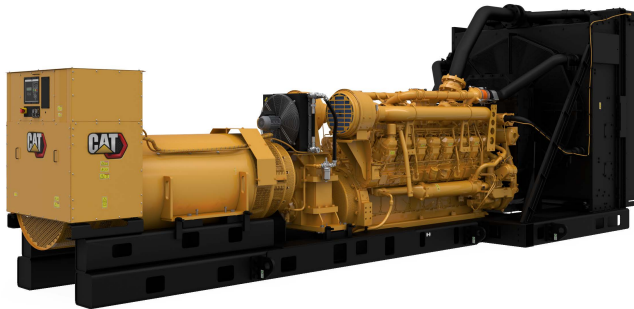


Image shown may not reflect actual configuration

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

Standby / Mission Critical – 50 Hz kVA (ekW)	Emissions Performance
3500 (2800)	Tier 2 Equivalent US. EPA Stationary Emergency
3000 (2400)	Low NOx (< 2000 mg NOx)

Standard Features

Cat® Diesel Engine

- Tier 2 Equivalent (US. 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

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
- Satellite

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)
- Uninterruptible power supply (UPS)
- Paralleling switchgear
- Paralleling controls

Certifications

- EU Declaration of Conformity
- EU Declaration of Incorporation
- Eurasian Conformity (EAC)

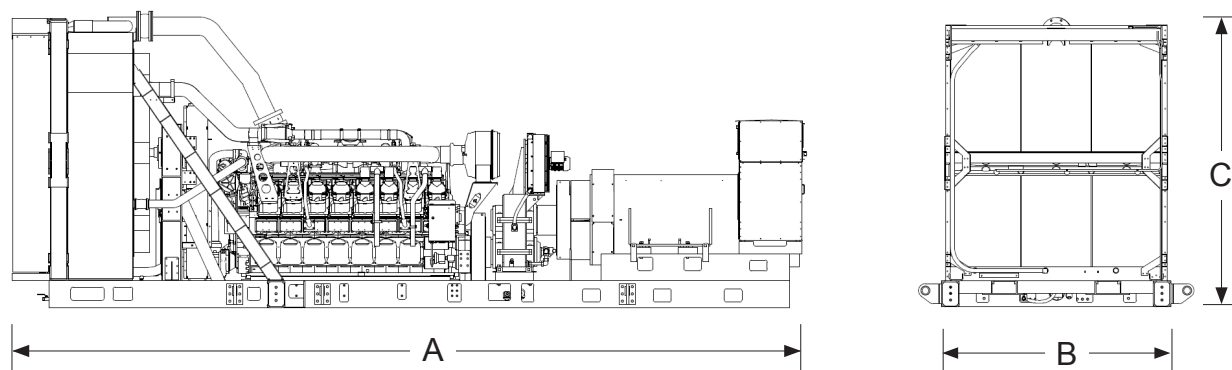
Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

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	EM2118-02	EM2120-01	EM2820-0H	EM2822-01
Fuel Consumption				
100% load with fan – L/hr (gal/hr)	789.5 (208.6)	789.5 (208.6)	667.6 (176.4)	667.6 (176.4)
75% load with fan – L/hr (gal/hr)	595.3 (157.3)	595.3 (157.3)	504.1 (133.2)	504.1 (133.2)
50% load with fan – L/hr (gal/hr)	429.6 (113.5)	429.6 (113.5)	369.7 (97.7)	369.7 (97.7)
25% load with fan – L/hr (gal/hr)	243.9 (64.4)	243.9 (64.4)	220.4 (58.2)	220.4 (58.2)
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 – m ³ /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 – m ³ /min (cfm)	237.7 (8393.8)	237.7 (8393.8)	220.7 (7792.3)	220.7 (7792.3)
Exhaust System				
Exhaust stack gas temperature – °C (°F)	480.8 (897.5)	480.8 (897.5)	436.7 (818.1)	436.7 (818.1)
Exhaust gas flow rate – m ³ /min (cfm)	627.2 (22147.5)	627.2 (22147.5)	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)	911 (51812)	911 (51812)	802 (45584)	802 (45584)
Heat rejection to exhaust (total) – kW (Btu/min)	2908 (165362)	2908 (165362)	2561 (145654)	2561 (145654)
Heat rejection to aftercooler – kW (Btu/min)	916 (52067)	916 (52067)	831 (47265)	831 (47265)
Heat rejection to atmosphere from engine – kW (Btu/min)	175 (9972)	175 (9972)	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/Nm ³ (g/hp-h)	2416.8 (5.04)	2416.8 (5.04)	1785.6 (3.77)	1785.6 (3.77)
CO mg/Nm ³ (g/hp-h)	319.6 (0.69)	319.6 (0.69)	329.8 (0.70)	329.8 (0.70)
HC mg/Nm ³ (g/hp-h)	41.6 (0.10)	41.6 (0.10)	33.5 (0.08)	33.5 (0.08)
PM mg/Nm ³ (g/hp-h)	30.5 (0.08)	30.5 (0.08)	35.7 (0.09)	35.7 (0.09)
Emissions* (Potential Site Variation) - Full Load				
NOx mg/Nm ³ (g/hp-h)	2900.1 (6.05)	2900.1 (6.05)	1999.9 (4.23)	1999.9 (4.23)
CO mg/Nm ³ (g/hp-h)	575.2 (1.24)	575.2 (1.24)	593.6 (1.26)	593.6 (1.26)
HC mg/Nm ³ (g/hp-h)	55.3 (0.14)	55.3 (0.14)	44.6 (0.11)	44.6 (0.11)
PM mg/Nm ³ (g/hp-h)	42.7 (0.11)	42.7 (0.11)	49.9 (0.13)	49.9 (0.13)

*mg/Nm³ levels are corrected to 5% O₂. Contact your local Cat dealer for further information.

Weights and Dimensions



Standby Rating kVA	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight 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 power rating. 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 power rating. Typical peak demand up to 100% of rated power 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, CSA C22.2 No. 100-04, UL 142, UL 489, UL 869, UL 2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

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 DCP application of Cat diesel generator set prime power 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 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.)

www.cat.com/electricpower

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