

# Cat® 3512B

## Diesel Generator Sets



Bore – mm (in)	170 (6.69)
Stroke – mm (in)	190 (7.48)
Displacement – L (in <sup>3</sup> )	51.8 (3161.03)
Compression Ratio	14.0:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A3

Image shown may not reflect actual configuration

Prime-DCP 50 Hz kVA (ekW)	Emissions Performance
1500 (1200)	Optimized for Low Fuel Consumption or Low Emissions

### Features

#### Cat® Diesel Engine

- Designed and optimized for low emissions or 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 (10 dB)
- Residential grade (20 dB)
- Critical grade (35 dB)

#### Starting

- Standard batteries
- Oversized batteries
- Standard electric starter(s)
- Dual 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
- UL         IEC
- 3-pole     4-pole
- Manually operated
- Electrically operated

#### Trip Unit

- LSI         LSI-G
- LSI-G-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

- IBC seismic certification
- 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

### Low Fuel Consumption

Performance	Prime-DCP		Prime-DCP		Prime-DCP	
Frequency	50 Hz		50 Hz		50 Hz	
Gen set power rating with fan	1200 ekW		1200 ekW		1200 ekW	
Gen set power rating with fan @ 0.8 power factor	1500 kVA		1500 kVA		1500 kVA	
SCAC temperature	30°C		60°C		90°C	
Performance number	EM5882-00		EM5883-00		EM5884-00	
<b>Fuel Consumption</b>						
100% load with fan – L/hr (gal/hr)	299.0	(79.0)	308.6	(80.0)	309.4	(81.7)
75% load with fan – L/hr (gal/hr)	225.1	(59.5)	235.9	(61.1)	231.0	(61.0)
50% load with fan – L/hr (gal/hr)	157.1	(41.5)	163.3	(42.3)	163.1	(43.1)
25% load with fan – L/hr (gal/hr)	94.3	(24.9)	94.1	(24.4)	95.4	(25.2)
<b>Cooling System</b>						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m <sup>3</sup> /min (cfm)	1359	(47992)	1359	(47992)	1359	(47992)
Engine coolant capacity – L (gal)	156.8	(41.4)	156.8	(41.4)	156.8	(41.4)
Radiator coolant capacity – L (gal)	130.0	(34.0)	130.0	(34.0)	130.0	(34.0)
Total coolant capacity – L (gal)	286.8	(75.4)	286.8	(75.4)	286.8	(75.4)
<b>Inlet Air</b>						
Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)	108.3	(3824.1)	99.8	(3524.0)	96.0	(3389.8)
<b>Exhaust System</b>						
Exhaust stack gas temperature – °C (°F)	392.4	(738.3)	448.3	(838.9)	492.7	(918.9)
Exhaust gas flow rate – m <sup>3</sup> /min (cfm)	253.2	(8940.6)	253.7	(8958.2)	259.7	(9170.1)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(26.9)	6.7	(26.9)	6.7	(26.9)
<b>Heat Rejection</b>						
Heat rejection to jacket water – kW (Btu/min)	480	(27297)	510	(29003)	541	(30767)
Heat rejection to exhaust (total) – kW (Btu/min)	1030	(58574)	1104	(62782)	1154	(65625)
Heat rejection to aftercooler – kW (Btu/min)	331	(18823)	265	(15070)	214	(12169)
Heat rejection to atmosphere from engine – kW (Btu/min)	111	(6312)	125	(7109)	139	(7905)
Heat rejection from alternator – kW (Btu/min)	51	(2917)	51	(2917)	51	(2917)
<b>Emissions* (Nominal)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	3243.7	(6.58)	4446.4	(9.14)	3538.3	(7.44)
CO mg/Nm <sup>3</sup> (g/hp-h)	698.4	(1.42)	632.5	(1.30)	594.1	(1.25)
HC mg/Nm <sup>3</sup> (g/hp-h)	69.9	(0.14)	63.9	(0.13)	70.2	(0.15)
PM mg/Nm <sup>3</sup> (g/hp-h)	32.0	(0.06)	25.8	(0.05)	25.3	(0.05)
<b>Emissions* (Potential Site Variation)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	3892.5	(7.90)	5335.6	(10.97)	4246.0	(8.93)
CO mg/Nm <sup>3</sup> (g/hp-h)	1257.1	(2.55)	1138.5	(2.34)	1069.4	(2.25)
HC mg/Nm <sup>3</sup> (g/hp-h)	93.0	(0.19)	85.0	(0.17)	93.4	(0.20)
PM mg/Nm <sup>3</sup> (g/hp-h)	44.8	(0.09)	36.1	(0.07)	35.4	(0.07)

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

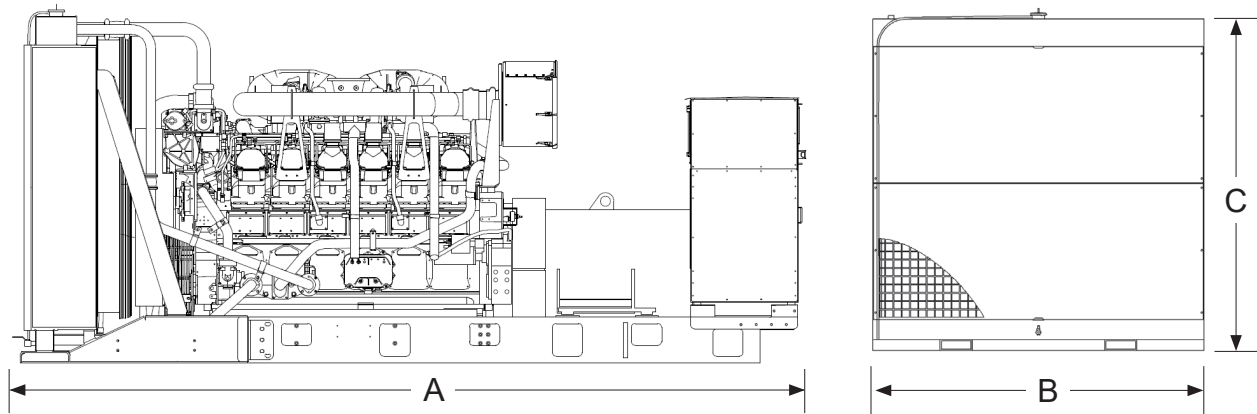
## Package Performance

### Low Emissions

Performance	Prime-DCP		Prime-DCP		Prime-DCP	
Frequency	50 Hz		50 Hz		50 Hz	
Gen set power rating with fan	1200 eKW		1200 eKW		1200 eKW	
Gen set power rating with fan @ 0.8 power factor	1500 kVA		1500 kVA		1500 kVA	
SCAC temperature	30°C		60°C		90°C	
Performance number	EM5885-00		EM5886-00		EM5887-00	
<b>Fuel Consumption</b>						
100% load with fan – L/hr (gal/hr)	331.5	(87.6)	336.4	(88.9)	315.0	(83.2)
75% load with fan – L/hr (gal/hr)	247.5	(65.4)	256.9	(67.9)	243.7	(64.4)
50% load with fan – L/hr (gal/hr)	167.2	(44.2)	172.0	(45.4)	173.4	(45.8)
25% load with fan – L/hr (gal/hr)	97.3	(25.7)	100.2	(26.5)	99.3	(26.2)
<b>Cooling System</b>						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m <sup>3</sup> /min (cfm)	1359	(47992)	1359	(47992)	1359	(47992)
Engine coolant capacity – L (gal)	156.8	(41.4)	156.8	(41.4)	156.8	(41.4)
Radiator coolant capacity – L (gal)	130.0	(34.0)	130.0	(34.0)	130.0	(34.0)
Total coolant capacity – L (gal)	286.8	(75.4)	286.8	(75.4)	286.8	(75.4)
<b>Inlet Air</b>						
Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)	116.5	(4113.7)	109.4	(3863.0)	98.0	(3460.4)
<b>Exhaust System</b>						
Exhaust stack gas temperature – °C (°F)	409.9	(769.8)	466.0	(870.8)	462.4	(864.3)
Exhaust gas flow rate – m <sup>3</sup> /min (cfm)	279.7	(9876.3)	284.6	(10049.3)	254.3	(8979.4)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(26.9)	6.7	(26.9)	6.7	(26.9)
<b>Heat Rejection</b>						
Heat rejection to jacket water – kW (Btu/min)	511	(29060)	540	(30709)	543	(30879)
Heat rejection to exhaust (total) – kW (Btu/min)	1182	(67218)	1266	(71995)	1156	(65740)
Heat rejection to aftercooler – kW (Btu/min)	410	(23316)	331	(18824)	232	(13193)
Heat rejection to atmosphere from engine – kW (Btu/min)	124	(7052)	138	(7848)	140	(7962)
Heat rejection from alternator – kW (Btu/min)	51	(2917)	51	(2917)	51	(2917)
<b>Emissions* (Nominal)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	1819.2	(3.97)	1958.9	(4.33)	4068.0	(8.43)
CO mg/Nm <sup>3</sup> (g/hp-h)	133.2	(0.29)	645.3	(1.43)	616.1	(1.28)
HC mg/Nm <sup>3</sup> (g/hp-h)	76.9	(0.17)	63.5	(0.14)	70.6	(0.15)
PM mg/Nm <sup>3</sup> (g/hp-h)	36.0	(0.08)	32.7	(0.07)	25.2	(0.05)
<b>Emissions* (Potential Site Variation)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	2183.0	(4.76)	2350.7	(5.20)	4881.6	(10.12)
CO mg/Nm <sup>3</sup> (g/hp-h)	239.8	(0.52)	1161.5	(2.57)	1109.0	(2.30)
HC mg/Nm <sup>3</sup> (g/hp-h)	102.3	(0.22)	84.5	(0.19)	93.9	(0.19)
PM mg/Nm <sup>3</sup> (g/hp-h)	50.4	(0.11)	45.8	(0.10)	35.3	(0.07)

\*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)
5263 (207.2)	1975 (77.8)	2367 (93.2)	11 340 (25,000)

**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, 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 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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