

# Cat® 3512B

## 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> )	58.56 (3573.55)
Compression Ratio	15.5:1
Aspiration	TA
Fuel System	EUI
Governor Type	ADEM™ A3

Prime-DCP 50 Hz kVA (ekW)	Emissions Performance
1600 (1280)	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 and continuous 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)

#### Starting

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

### Alternator

#### Output voltage

- 380V
- 400V
- 415V

#### 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
- 2500A
- 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

### 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 Declaration of Conformity
- EU Declaration of Incorporation
- Eurasian Conformity (EAC)
- Telecommunication Lab of China

**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	1280 ekW		1280 ekW		1280 ekW	
Gen set power rating with fan @ 0.8 power factor	1600 kVA		1600 kVA		1600 kVA	
SCAC temperature	30°C		60°C		90°C	
Performance number	EM5897-00		EM5898-00		EM5899-00	
<b>Fuel Consumption</b>						
100% load with fan – L/hr (gal/hr)	313.4	(82.8)	315.8	(83.4)	319.0	(84.3)
75% load with fan – L/hr (gal/hr)	242.4	(62.8)	239.6	(63.3)	241.0	(63.7)
50% load with fan – L/hr (gal/hr)	170.0	(44.1)	168.6	(44.5)	169.4	(44.8)
25% load with fan – L/hr (gal/hr)	99.7	(25.8)	99.0	(26.2)	99.2	(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)	1283	(45308)	1283	(45308)	1283	(45308)
Engine coolant capacity – L (gal)	156.8	(41.4)	156.8	(41.4)	156.8	(41.4)
Radiator coolant capacity – L (gal)	149.0	(39.4)	149.0	(39.4)	149.0	(39.4)
Total coolant capacity – L (gal)	305.8	(80.8)	305.8	(80.8)	305.8	(80.8)
<b>Inlet Air</b>						
Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)	112.6	(3975.9)	109.1	(3852.3)	105.0	(3707.5)
<b>Exhaust System</b>						
Exhaust stack gas temperature – °C (°F)	443.0	(829.4)	454.9	(850.8)	479.7	(895.5)
Exhaust gas flow rate – m <sup>3</sup> /min (cfm)	280.4	(9900.8)	276.0	(9745.4)	276.1	(9748.9)
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)	468	(26614)	531	(30197)	588	(33438)
Heat rejection to exhaust (total) – kW (Btu/min)	1205	(68524)	1207	(68638)	1235	(70231)
Heat rejection to aftercooler – kW (Btu/min)	291	(16548)	241	(13704)	183	(10406)
Heat rejection to atmosphere from engine – kW (Btu/min)	106	(6028)	114	(6483)	125	(7108)
Heat rejection from alternator – kW (Btu/min)	60	(3429)	60	(3429)	60	(3429)
<b>Emissions* (Nominal)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	2452.1	(4.98)	2780.7	(5.70)	3141.7	(6.48)
CO mg/Nm <sup>3</sup> (g/hp-h)	299.2	(0.61)	321.4	(0.66)	332.7	(0.69)
HC mg/Nm <sup>3</sup> (g/hp-h)	44.4	(0.09)	44.7	(0.09)	43.4	(0.09)
PM mg/Nm <sup>3</sup> (g/hp-h)	48.9	(0.10)	44.0	(0.09)	37.2	(0.08)
<b>Emissions* (Potential Site Variation)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	2942.5	(5.98)	3336.9	(6.84)	3770.0	(7.78)
CO mg/Nm <sup>3</sup> (g/hp-h)	538.5	(1.09)	587.5	(1.19)	598.8	(1.24)
HC mg/Nm <sup>3</sup> (g/hp-h)	59.1	(0.12)	59.5	(0.12)	57.7	(0.12)
PM mg/Nm <sup>3</sup> (g/hp-h)	68.5	(0.14)	61.6	(0.13)	52.1	(0.11)

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

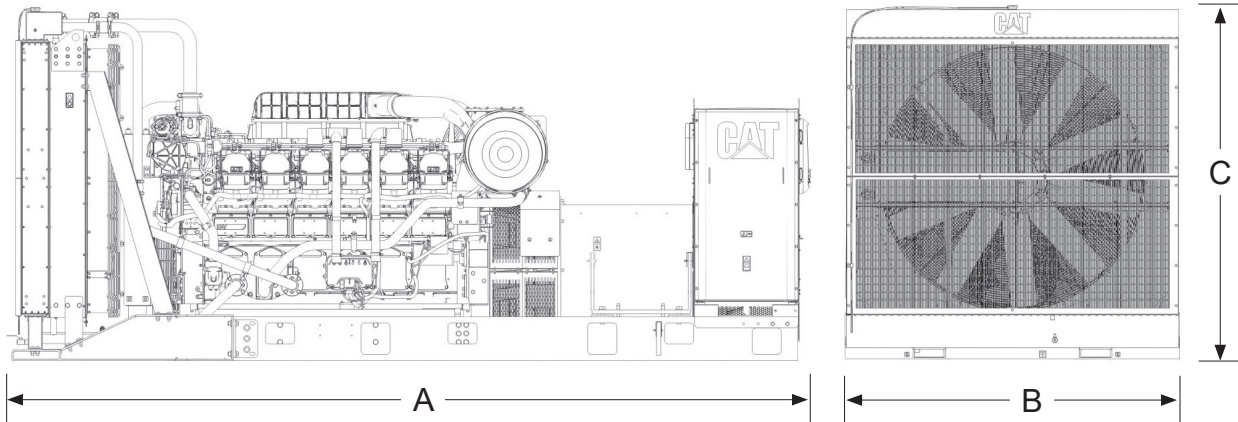
## Package Performance

### Low Emissions

Performance	Prime-DCP		Prime-DCP		Prime-DCP	
Frequency	50 Hz		50 Hz		50 Hz	
Gen set power rating with fan	1280 ekW		1280 ekW		1280 ekW	
Gen set power rating with fan @ 0.8 power factor	1600 kVA		1600 kVA		1600 kVA	
SCAC temperature	30°C		60°C		90°C	
Performance number	EM5854-00		EM5855-00		EM5856-00	
<b>Fuel Consumption</b>						
100% load with fan – L/hr (gal/hr)	329.4	(87.0)	329.4	(87.0)	323.9	(85.5)
75% load with fan – L/hr (gal/hr)	249.1	(65.8)	248.4	(65.6)	244.6	(64.6)
50% load with fan – L/hr (gal/hr)	173.1	(45.7)	173.8	(45.9)	171.6	(45.3)
25% load with fan – L/hr (gal/hr)	99.4	(26.3)	100.8	(26.6)	100.0	(26.4)
<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)	1283	(45308)	1283	(45308)	1283	(45308)
Engine coolant capacity – L (gal)	156.8	(41.4)	156.8	(41.4)	156.8	(41.4)
Radiator coolant capacity – L (gal)	149.0	(39.4)	149.0	(39.4)	149.0	(39.4)
Total coolant capacity – L (gal)	305.8	(80.8)	305.8	(80.8)	305.8	(80.8)
<b>Inlet Air</b>						
Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)	123.6	(4364.3)	119.1	(4205.4)	111.0	(3919.4)
<b>Exhaust System</b>						
Exhaust stack gas temperature – °C (°F)	421.0	(789.8)	430.7	(807.3)	444.6	(832.3)
Exhaust gas flow rate – m <sup>3</sup> /min (cfm)	300.7	(10617.6)	294.7	(10405.7)	280.9	(9918.4)
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)	484	(27524)	550	(31277)	598	(34007)
Heat rejection to exhaust (total) – kW (Btu/min)	1259	(71595)	1268	(72107)	1232	(70060)
Heat rejection to aftercooler – kW (Btu/min)	373	(21211)	314	(17855)	233	(13249)
Heat rejection to atmosphere from engine – kW (Btu/min)	115	(6540)	124	(7052)	133	(7564)
Heat rejection from alternator – kW (Btu/min)	60	(3429)	60	(3429)	60	(3429)
<b>Emissions* (Nominal)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	1593.4	(3.40)	1941.8	(4.13)	2661.2	(5.57)
CO mg/Nm <sup>3</sup> (g/hp-h)	268.8	(0.57)	298.6	(0.64)	405.3	(0.85)
HC mg/Nm <sup>3</sup> (g/hp-h)	73.8	(0.16)	74.5	(0.16)	63.8	(0.13)
PM mg/Nm <sup>3</sup> (g/hp-h)	26.5	(0.06)	20.8	(0.04)	15.9	(0.03)
<b>Emissions* (Potential Site Variation)</b>						
NOx mg/Nm <sup>3</sup> (g/hp-h)	1912.1	(4.08)	2330.2	(4.96)	3193.5	(6.68)
CO mg/Nm <sup>3</sup> (g/hp-h)	483.9	(1.03)	537.5	(1.14)	729.6	(1.53)
HC mg/Nm <sup>3</sup> (g/hp-h)	98.2	(0.21)	99.1	(0.21)	84.9	(0.18)
PM mg/Nm <sup>3</sup> (g/hp-h)	37.1	(0.08)	29.1	(0.06)	22.3	(0.05)

\*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)
5515 (217.1)	2286 (90.0)	2411 (94.9)	12 034 (26,530)

**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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