

Cat® 3512B

Diesel Generator Sets



| | |
|-------------------------------------|-----------------|
| Bore – mm (in) | 170 (6.69) |
| Stroke – mm (in) | 215 (8.46) |
| Displacement – L (in ³) | 58.56 (3573.55) |
| Compression Ratio | 15.5:1 |
| Aspiration | TA |
| Fuel System | EUI |
| Governor Type | ADEM™ A3 |

Image shown may not reflect actual configuration

| Prime-DCP 50 Hz kVA (ekW) | Emissions Performance |
|------------------------------|--|
| 1700 (1360) | 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 | 1360 ekW | 1360 ekW | 1360 ekW |
| Gen set power rating with fan @ 0.8 power factor | 1700 kVA | 1700 kVA | 1700 kVA |
| SCAC temperature | 30°C | 60°C | 90°C |
| Performance number | EM5894-00 | EM5895-00 | EM5896-00 |
| Fuel Consumption | | | |
| 100% load with fan – L/hr (gal/hr) | 333.4 (88.1) | 336.1 (88.8) | 340.1 (89.8) |
| 75% load with fan – L/hr (gal/hr) | 251.8 (66.5) | 253.6 (67.0) | 255.1 (67.4) |
| 50% load with fan – L/hr (gal/hr) | 175.6 (46.4) | 177.4 (46.9) | 178.4 (47.1) |
| 25% load with fan – L/hr (gal/hr) | 102.1 (27.0) | 103.3 (27.3) | 103.5 (27.3) |
| Cooling System | | | |
| Radiator air flow restriction (system) – kPa (in. water) | 0.12 (0.48) | 0.12 (0.48) | 0.12 (0.48) |
| Radiator air flow – m ³ /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) |
| Inlet Air | | | |
| Combustion air inlet flow rate – m ³ /min (cfm) | 117.5 (4148.9) | 114.2 (4032.9) | 110.8 (3912.9) |
| Exhaust System | | | |
| Exhaust stack gas temperature – °C (°F) | 452.3 (846.1) | 463.0 (865.4) | 485.5 (905.9) |
| Exhaust gas flow rate – m ³ /min (cfm) | 296.5 (10469.4) | 292.3 (10322.5) | 293.5 (10364.9) |
| Exhaust system backpressure (maximum allowable) – kPa (in. water) | 6.7 (26.9) | 6.7 (26.9) | 6.7 (26.9) |
| Heat Rejection | | | |
| Heat rejection to jacket water – kW (Btu/min) | 488 (27752) | 555 (31563) | 615 (34975) |
| Heat rejection to exhaust (total) – kW (Btu/min) | 1287 (73190) | 1289 (73305) | 1321 (75125) |
| Heat rejection to aftercooler – kW (Btu/min) | 320 (18198) | 270 (15355) | 212 (12056) |
| Heat rejection to atmosphere from engine – kW (Btu/min) | 110 (6255) | 118 (6711) | 129 (7336) |
| Heat rejection from alternator – kW (Btu/min) | 66 (3731) | 66 (3731) | 66 (3731) |
| Emissions* (Nominal) | | | |
| NOx mg/Nm ³ (g/hp-h) | 2407.1 (4.91) | 2726.3 (5.61) | 3021.5 (6.27) |
| CO mg/Nm ³ (g/hp-h) | 313.9 (0.64) | 330.9 (0.68) | 331.0 (0.69) |
| HC mg/Nm ³ (g/hp-h) | 42.8 (0.09) | 43.2 (0.09) | 41.9 (0.09) |
| PM mg/Nm ³ (g/hp-h) | 45.9 (0.09) | 41.4 (0.09) | 35.2 (0.07) |
| Emissions* (Potential Site Variation) | | | |
| NOx mg/Nm ³ (g/hp-h) | 2888.5 (5.89) | 3271.5 (6.73) | 3625.8 (7.52) |
| CO mg/Nm ³ (g/hp-h) | 565.0 (1.15) | 595.7 (1.23) | 595.9 (1.24) |
| HC mg/Nm ³ (g/hp-h) | 56.9 (0.12) | 57.5 (0.12) | 55.7 (0.12) |
| PM mg/Nm ³ (g/hp-h) | 64.3 (0.13) | 58.0 (0.12) | 49.3 (0.10) |

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

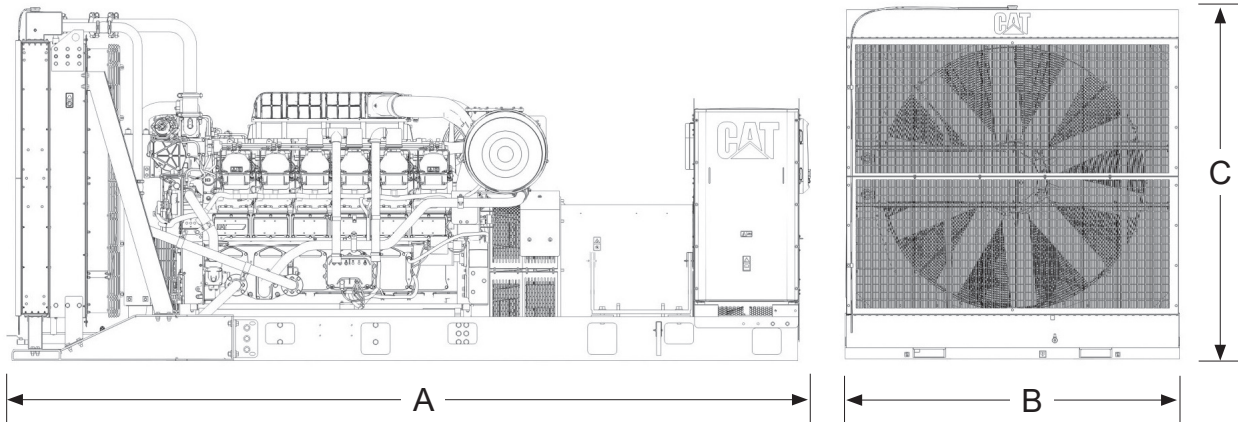
Package Performance

Low Emissions

| Performance | Prime-DCP | | Prime-DCP | | Prime-DCP | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|
| Frequency | 50 Hz | | 50 Hz | | 50 Hz | |
| Gen set power rating with fan | 1360 ekW | | 1360 ekW | | 1360 ekW | |
| Gen set power rating with fan @ 0.8 power factor | 1700 kVA | | 1700 kVA | | 1700 kVA | |
| SCAC temperature | 30°C | | 60°C | | 90°C | |
| Performance number | EM5851-00 | | EM5852-00 | | EM5853-00 | |
| Fuel Consumption | | | | | | |
| 100% load with fan – L/hr (gal/hr) | 349.7 | (92.4) | 351.5 | (92.9) | 345.3 | (91.2) |
| 75% load with fan – L/hr (gal/hr) | 264.3 | (69.8) | 263.2 | (69.5) | 259.3 | (68.5) |
| 50% load with fan – L/hr (gal/hr) | 182.5 | (48.2) | 183.0 | (48.4) | 180.6 | (47.8) |
| 25% load with fan – L/hr (gal/hr) | 103.9 | (27.5) | 105.4 | (27.9) | 104.5 | (27.6) |
| Cooling System | | | | | | |
| Radiator air flow restriction (system) – kPa (in. water) | 0.12 | (0.48) | 0.12 | (0.48) | 0.12 | (0.48) |
| Radiator air flow – m ³ /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) |
| Inlet Air | | | | | | |
| Combustion air inlet flow rate – m ³ /min (cfm) | 126.9 | (4480.9) | 123.6 | (4364.3) | 116.4 | (4110.6) |
| Exhaust System | | | | | | |
| Exhaust stack gas temperature – °C (°F) | 436.2 | (817.1) | 444.6 | (832.3) | 452.5 | (846.5) |
| Exhaust gas flow rate – m ³ /min (cfm) | 315.8 | (11150.9) | 312.3 | (11027.3) | 298.1 | (10527.3) |
| Exhaust system backpressure (maximum allowable) – kPa (in. water) | 6.7 | (26.9) | 6.7 | (26.9) | 6.7 | (26.9) |
| Heat Rejection | | | | | | |
| Heat rejection to jacket water – kW (Btu/min) | 504 | (28662) | 576 | (32756) | 626 | (35601) |
| Heat rejection to exhaust (total) – kW (Btu/min) | 1340 | (76203) | 1362 | (77453) | 1323 | (75239) |
| Heat rejection to aftercooler – kW (Btu/min) | 402 | (22861) | 345 | (19619) | 265 | (15071) |
| Heat rejection to atmosphere from engine – kW (Btu/min) | 119 | (6767) | 129 | (7337) | 138 | (7848) |
| Heat rejection from alternator – kW (Btu/min) | 66 | (3731) | 66 | (3731) | 66 | (3731) |
| Emissions* (Nominal) | | | | | | |
| NOx mg/Nm ³ (g/hp-h) | 1659.1 | (3.54) | 1946.2 | (4.17) | 2626.6 | (5.53) |
| CO mg/Nm ³ (g/hp-h) | 302.0 | (0.64) | 340.7 | (0.73) | 332.9 | (0.70) |
| HC mg/Nm ³ (g/hp-h) | 73.1 | (0.16) | 77.1 | (0.17) | 65.7 | (0.14) |
| PM mg/Nm ³ (g/hp-h) | 29.8 | (0.06) | 27.5 | (0.06) | 12.7 | (0.03) |
| Emissions* (Potential Site Variation) | | | | | | |
| NOx mg/Nm ³ (g/hp-h) | 1990.9 | (4.25) | 2335.4 | (5.01) | 3151.9 | (6.63) |
| CO mg/Nm ³ (g/hp-h) | 543.6 | (1.16) | 613.3 | (1.32) | 599.2 | (1.26) |
| HC mg/Nm ³ (g/hp-h) | 97.2 | (0.21) | 102.5 | (0.22) | 87.4 | (0.18) |
| PM mg/Nm ³ (g/hp-h) | 41.7 | (0.09) | 38.5 | (0.08) | 17.8 | (0.04) |

*mg/Nm³ levels are corrected to 5% O₂. 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

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

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