

# Cat® 3516B

## Dynamic Gas Blending™ (DGB™) Generator Sets

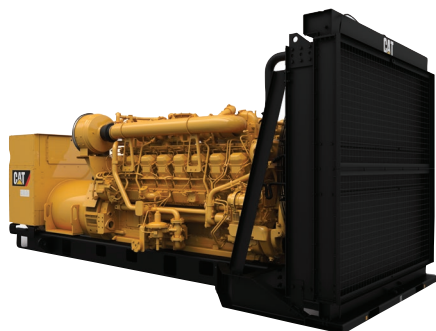


Image shown may not reflect actual configuration

|                                     |              |
|-------------------------------------|--------------|
| Bore – mm (in)                      | 170 (6.69)   |
| Stroke – mm (in)                    | 215 (8.46)   |
| Displacement – L (in <sup>3</sup> ) | 78 (4764.73) |
| Compression Ratio                   | 15.5:1       |
| Aspiration                          | TA           |
| Fuel System                         | EUI          |
| Governor Type                       | ADEM™ A4     |

| Prime<br>50 Hz kVA (ekW) | Continuous<br>50 Hz kVA (ekW) | Emissions Performance              |
|--------------------------|-------------------------------|------------------------------------|
| 2275 (1820)              | 2000 (1600)                   | Optimized for Low Fuel Consumption |

### Standard Features

#### Dynamic Gas Blending™ (DGB™) System

- DGB system automatically activates when gas supply is detected
- Reduces diesel consumption by up to 70% using gas substitution while maintaining safe engine operation
- Control system enables maximum substitution over the widest load range in the industry
- Maintains traditional diesel generator set power and transient response performance
- Accepts a wide range of gas quality and automatically adjusts to fuel quality changes, eliminating the need for field calibration
- Maintains existing diesel maintenance and overhaul intervals

#### 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 other 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 47°C (117°F)
- Tested to ensure proper generator set cooling

#### EMCP 4 Control Panels

- EMCP 4.3/4.4 control panel is the single-point interface for the engine, generator, and DGB functions
- 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 and mission critical ratings
- 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

## 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
- LSI-G-P

### Control System

#### Controller

- 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

- IBC Seismic Certification
- EU Declaration of Conformity
- EEC Declaration of Conformity

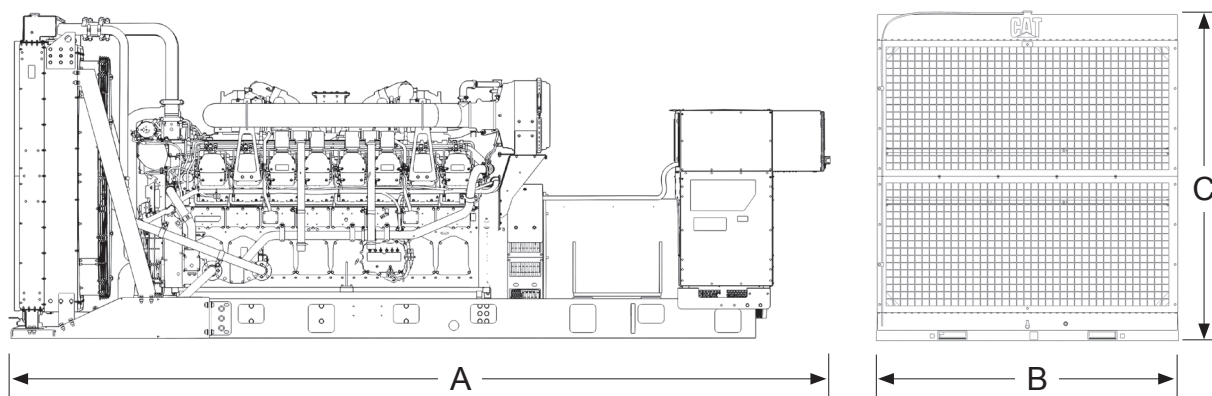
**Note:** Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

## Package Performance

Low Fuel Consumption (60°C SCAC) based on 100% Diesel, except\*

| Performance  | Prime     |           | Continuous |           |
|--|-----------|-----------|------------|-----------|
| Frequency  | 50 Hz     |           | 50 Hz      |           |
| Genset power rating with fan   | 1820 ekW  |           | 1600 ekW   |           |
| Genset power rating with fan @ 0.8 power factor                                      | 2275 kVA  |           | 2000 kVA   |           |
| Emissions  | Low Fuel  |           | Low Fuel   |           |
| Performance number   | EM2608-00 |           | EM2610-00  |           |
| Aftercooler (separate circuit) – °C (°F)   | 60        | (140)     | 60         | (140)     |
| <b>Fuel Consumption</b>  |           |           |            |           |
| 100% load with fan – L/hr (gal/hr)   | 460.6     | (121.7)   | 400.8      | (105.9)   |
| 75% load with fan – L/hr (gal/hr)  | 340.7     | (90.0)    | 301.3      | (79.6)    |
| 50% load with fan – L/hr (gal/hr)  | 236.4     | (62.4)    | 211.7      | (55.9)    |
| 25% load with fan – L/hr (gal/hr)  | 136.4     | (36.0)    | 124.1      | (32.8)    |
| <b>*Gas Fuel Flow (Pressure range before regulating: 0.83-6.89 bar (12-100 psi))</b> |           |           |            |           |
| Maximum @ 85 MN – MJ/hr (Btu/min)  | 9463      | (149535)  | 9284       | (146708)  |
| <b>Cooling System</b>  |           |           |            |           |
| Radiator air flow restriction (system) – kPa (in. water)                             | 0.12      | (0.48)    | 0.12       | (0.48)    |
| Radiator air flow – m <sup>3</sup> /min (cfm)  | 2254      | (79599)   | 2254       | (79599)   |
| Engine coolant capacity – L (gal)  | 233       | (61.6)    | 233        | (61.6)    |
| Radiator coolant capacity – L (gal)  | 131       | (34.6)    | 131        | (34.6)    |
| Total coolant capacity – L (gal)   | 364       | (96.2)    | 364        | (96.2)    |
| <b>Inlet Air</b>   |           |           |            |           |
| Combustion air inlet flow rate – m <sup>3</sup> /min (cfm)                           | 147.5     | (5208.3)  | 133.7      | (4721.1)  |
| <b>Exhaust System</b>  |           |           |            |           |
| Exhaust stack gas temperature – °C (°F)  | 489.0     | (912.2)   | 467.8      | (874.0)   |
| Exhaust gas flow rate – m <sup>3</sup> /min (cfm)                                    | 395.4     | (13961.6) | 348.1      | (12291.9) |
| Exhaust system backpressure (maximum allowable) – kPa (in. water)                    | 6.7       | (27.0)    | 6.7        | (27.0)    |
| <b>Heat Rejection</b>  |           |           |            |           |
| Heat rejection to jacket water – kW (Btu/min)  | 639       | (36339)   | 583        | (33155)   |
| Heat rejection to exhaust (total) – kW (Btu/min)                                     | 1775      | (100941)  | 1548       | (88035)   |
| Heat rejection to aftercooler – kW (Btu/min)   | 388       | (22065)   | 309        | (17573)   |
| Heat rejection to atmosphere from engine – kW (Btu/min)                              | 144       | (8189)    | 135        | (7677)    |
| Heat rejection from alternator – kW (Btu/min)  | 83        | (4713)    | 72         | (4093)    |
| <b>Emissions (Nominal)</b>   |           |           |            |           |
| NOx mg/Nm <sup>3</sup> (g/hp-h)  | 3066.9    | (6.28)    | 3249.6     | (6.57)    |
| CO mg/Nm <sup>3</sup> (g/hp-h)   | 209.8     | (0.43)    | 109.1      | (0.22)    |
| HC mg/Nm <sup>3</sup> (g/hp-h)   | 67.7      | (0.14)    | 74.2       | (0.15)    |
| PM mg/Nm <sup>3</sup> (g/hp-h)   | 19.5      | (0.04)    | 13.1       | (0.03)    |
| <b>Emissions (Potential Site Variation)</b>  |           |           |            |           |
| NOx mg/Nm <sup>3</sup> (g/hp-h)  | 3680.3    | (7.54)    | 3899.6     | (7.88)    |
| CO mg/Nm <sup>3</sup> (g/hp-h)   | 377.6     | (0.77)    | 196.4      | (0.40)    |
| HC mg/Nm <sup>3</sup> (g/hp-h)   | 90.0      | (0.18)    | 98.7       | (0.20)    |
| PM mg/Nm <sup>3</sup> (g/hp-h)   | 27.3      | (0.06)    | 18.3       | (0.04)    |

## Weights and Dimensions



| Dim "A"<br>mm (in) | Dim "B"<br>mm (in) | Dim "C"<br>mm (in) | Dry Weight<br>kg (lb) |
|--------------------|--------------------|--------------------|-----------------------|
| 7416 (292.0)       | 2286 (90.0)        | 2360 (92.9)        | 16 490 (36,280)       |

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

## Ratings Definitions

### Prime

Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime 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.

### Continuous

Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated kW for 100% of the operating hours.

### Applicable Codes and Standards

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528, 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

Tier III/Tier IV compliant per Uptime Institute requirements. ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

### Fuel Rates

Diesel 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](http://www.cat.com/electricpower)

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