

Cat® 3516B

Diesel Generator Sets

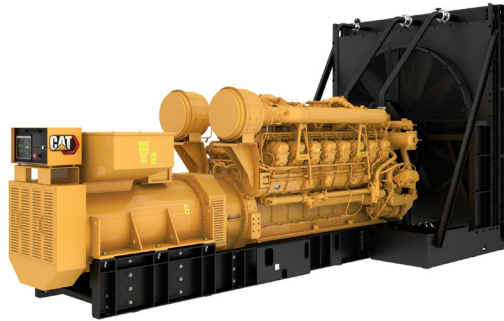


Image shown is for radiator version.
Images shown might not reflect actual configuration.

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

| | |
|-------------------|---|
| Engine Model | 3516B TA, V16, 4-stroke Water-cooled Diesel |
| Bore | 170 mm |
| Displacement | 69L |
| Stroke | 190 mm |
| Compression Ratio | 14.0:1 |
| Aspiration | Turbocharged Aftercooled |
| Governor Type | ADEM™ A3 |
| Fuel System | Electronic Unit Injection |

| Prime Ratings 50 Hz kVA (ekW) | Emissions / Fuel Performance |
|----------------------------------|------------------------------|
| 2000 (1600) | Low Fuel Consumption |

Features

Cat® Diesel Engine

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight

Generator

- Matched to the performance and output characteristics of Cat engines
- Industry-leading mechanical and electrical design
- Industry-leading motor starting capabilities
- High efficiency

Cat EMCP Control Panel

- The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 systems can be further customized to meet your needs through programming and expansion modules

Design Criteria

- The Generator set meets transient response and Block loading step as per ISO 8528-5
- Conforms to ISO 8528-5 G3 load acceptance requirements

Single-source Supplier

- Fully Prototype tested with certified torsional vibration analysis

Worldwide Product Support

- Cat dealers provide extensive post-sale support including maintenance and repair agreements. Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- The Caterpillar S•O•S program cost-effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

Standard and Optional Equipment

Standard Equipment

Air Cleaner

- Single element canister type air cleaner
- Service indicator

Cooling

- Package-mounted SCAC radiator/heat exchanger
- Radiator fan and belt drive*
- Fan and belt guard*
- Coolant drain valve

Exhaust

- Dry exhaust manifold
- Flange faced outlets
- Mufflers
- Stainless steel exhaust flex fitting
- Flanges

Fuel

- Primary fuel filter with integral water separator
- Secondary fuel filter
- Fuel priming pump
- Flexible fuel lines
- Fuel cooler

Generator

- Matched to the performance and output characteristics of Cat engines
- IP23 Protection
- AREP Excitation
- Class H Insulation, Class H temperature rise
- Form wound
- Regulator D550 – Grid code
- Load Acceptance Module (LAM)
- Droop kit
- Winding temperature detector
- Bearing temperature detector
- Anticondensation heater

Power Termination

- Bus bar
- Right side standard
- Top and bottom cable entry

Control Panel

- EMCP 4.2 genset controller
- Voltage and speed adjust
- Emergency stop button
- User interface panel (UIP) – Rear mount

Mounting

- Anti-vibration mounts
- To be used with radiator package

Starting/Charging

- Batteries with mounting rack and cables (standard)
- Charging alternator – 45 Amps, 24 Volts
- Heavy duty starting system – 24 Volts

General

- 990 liters fuel tank
- Paint – Caterpillar yellow except rails and heat exchanger in gloss black

Optional Equipment

- Air starting motor with control and silencer
- Jacket water heater
- Barring tool device
- Air inlet shutoff
- Duplex fuel filter
- Heavy-duty air cleaner
- Option for remote mounting of UIP
- Over size generator
- Duplex oil filter
- Electric pre-lube pump
- Remote mounted radiator

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

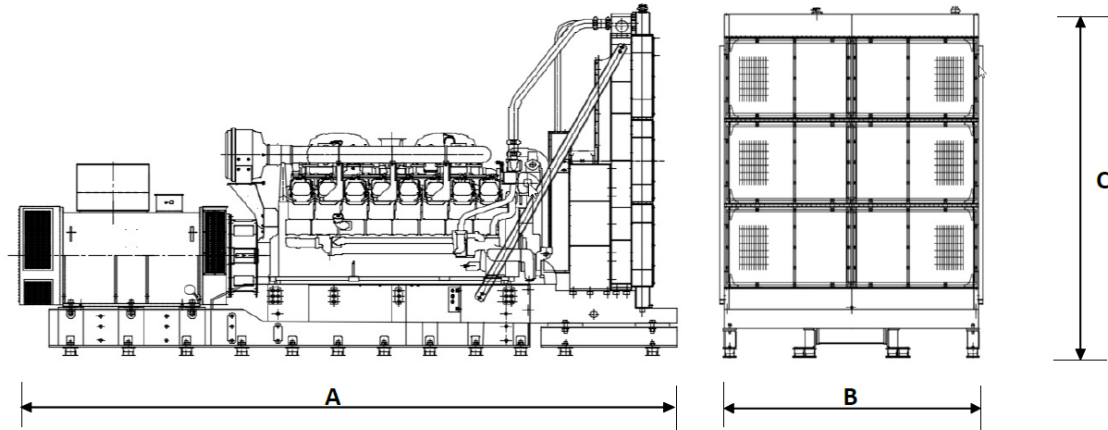
Package Performance

Low Fuel Consumption

| Performance | Prime | |
|---|---------------------------|---------------------------|
| | Radiator | Heat exchanger |
| Generator set power rating with Fan @ 0.8 power factor | 1600 ekW | |
| Generator set power rating | 2000 kVA | |
| Aftercooler (separate circuit) | 90°C | 60°C (Hex) |
| Fuel Consumption | | |
| 100% load | 402.5 L/hr | 390 L /hr |
| 75% load | 304.5 L/hr | 294.4 L /hr |
| 50% load | 213.4 L/hr | 210 L /hr |
| Cooling System | | |
| Engine coolant capacity | 275L | |
| Coolant capacity with radiator | 590L | |
| Inlet Air System | | |
| Combustion air inlet flow rate | 119.1 m ³ /min | 122.1m ³ /min |
| Max. allowable combustion air inlet temp | 49°C | |
| Exhaust System | | |
| Exhaust stack gas temperature | 509°C | 476°C |
| Exhaust gas flow rate | 327.2 m ³ /min | 320.5 m ³ /min |
| Exhaust system backpressure (maximum allowable) | 6.7 kPa | 6.7 kPa |
| Heat Rejection | | |
| Heat rejection to jacket water – kW (Btu/min) | 661 kW | 623 kW |
| Heat rejection to exhaust (total) – kW (Btu/min) | 1511 kW | 1433 kW |
| Heat rejection to aftercooler – kW (Btu/min) | 245 kW | 298 kW |
| Heat rejection to atmosphere from engine – kW (Btu/min) | 150 kW | 130 kW |
| Heat rejection to atmosphere from generator | 69 kW | 69 kW |
| Alternator | | |
| Motor starting capability @ 30% voltage dip at 0.4 PF | 3780 skVA | |
| Current | 2783 Amps | |
| Frame size | DSG 74L1 | |
| Excitation | AREP | |
| Temperature rise | 125°C | |

- For ambient and altitude capabilities consult your Cat dealer.
- Air flow restriction (system) is added to existing restriction from factory.
- Generator temperature rise is based on a 40°C (104°F) ambient.

Weights and Dimensions



| Length "A" mm (in) | Width "B" mm (in) | Height "C" mm (in) | Dry Weight kg (lb) |
|-----------------------|----------------------|-----------------------|-----------------------|
| 6562 (258.35) | 2850 (112.20) | 3397.7 (133.71) | 16 080 (34,450) |

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

Definitions and Conditions

Prime: Output available with varying load for unlimited time. Prime power in accordance with ISO 8528. 10% overload power in accordance with ISO 3046.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

Applicable Codes and Standards

ISO 3046, ISO 8528, IEC60034-1, IS4722.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer representative for availability.

Fuel Rates

Fuel Rates are based on fuel oil of 35° API [16°C] gravity having a LHV of 42,780 kJ/kg when used at 29°C and weighing 838.9 g/liter (7.001 lbs/U.S.gal.)

Additional ratings may be available for specific customer requirements, contact your Cat representative for details. For information regarding low sulfur fuel and biodiesel capability, please consult your Cat dealer.

www.cat.com/electricpower

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