



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

Specifications

Generator Set Specifications	
Minimum Rating	1750 kVA
Maximum Rating	2500 kVA
Emissions/Fuel Strategy	Low Fuel Consumption, Low Emissions
Voltage	220 to 13800 Volts
Frequency	50 Hz
Speed	1500 rpm
Duty Cycle	Standby, Mission Critical, Prime, Continuous

Engine Specifications		
Engine Model	3516B TA, V-16, 4-Stroke Water-Cooled Diesel	
Bore	170 mm	6.69 in
Stroke	190 mm	7.48 in
Stroke - HD	215 mm	0
Displacement	4210.64 l	69 in
Displacement - HD	78.08 l	4764.73 in ³
Compression Ratio	14.0:1 Std 15.5:1 HD	
Aspiration	TA	
Fuel System	Electronic unit injection	
Governor Type	Adem™3	

Generator Set Dimensions		
Length - Minimum	5928 mm	233.4 in
Length - Maximum	251.7 mm	6377 in
Width - Maximum	2286 mm	90 in
Height - Maximum	2367 mm	93.2 in



Dry Weight - Genset (minimum)	14470 kg	31900 lb
Dry Weight - Genset (maximum)	18290 kg	40320 lb

Benefits and Features

Cat Generator Set Package

- Cat generator set packages have been fully prototype tested
- Accepts 100% block load in one step and meets other NFPA 110 loading requirements
- Conform to ISO 8528-5 steady state and transient response requirements

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

Alternator

- SR5
- Superior motor starting capability minimizes need for oversizing alternator
- Designed to match performance and output characteristics of Cat diesel engines
- Robust Class H insulation

EMCP 4 Control Panel

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirement
- Expansion modules and site-specific programming for specific customer requirements

Cooling System

- Designed to operate in standard ambient temperatures up to 50°C (122°F)
- Contact your Cat Dealer for specific ambient and altitude capabilities

Certifications

- IBC Seismic Certification
- EU Certification of Conformance (CE)
- EEC Declaration of Conformity

One Safe Source

- Components used in the generator set are selected based on seamless design integration to provide the optimum performance
- The generator set is fully assembled at a Caterpillar facility following our quality guidelines
- Each generator set package is tested before leaving the Caterpillar facility
- Cat product support, including dealer service, parts and warranty covers the entire Cat power system

World Wide 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

Standard Equipment

Air Inlet System

- Air Cleaner; single element canister type

Control Panels

- EMCP 4.2B
- Emergency stop pushbutton
- 24 Volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions
- Generator mounted - rear facing
- Generator set packages include Caterpillar's Voltage Regulator
- IVR includes:
 - Reactive droop capability
 - 3-phase voltage sensing
 - KVAR/PF modes
 - RFI suppression
 - Min / max exciter
 - Limiter and exciter diode monitor
- Controls:
 - Speed adjust
 - Auto/start/stop control
 - Engine cool-down timer
 - Engine cycle crank
 - Alarm acknowledge
 - Lamp test
 - Load histogram feature
 - PLC functionality
 - Customizable screens
 - 0 True RMS AC metering, 3-phase, +/-2% accuracy
 - Digital indication for:
 - RPM - DC volts
 - DC volts
 - Operating hours
 - Oil pressure (psi, kPa or bar)
 - Coolant temperature
 - Volts (L-L & L-N)
 - Frequency (Hz)
 - Amps (per phase & average)
 - Power Factor (per phase & average)
 - kW (per phase, average & percent)
 - kVA (per phase, average & percent)

- kW-hr (total) - kVAr-hr (total)
- Warning / shutdown with common LED indication of shutdowns for:
 - Low oil pressure
 - High coolant temperature
 - Overspeed - Emergency stop
 - Emergency stop - Failure to start (overcrank)
 - Failure to start (overcrank)
 - Low coolant temperature
 - Low coolant level
- Programmable protective relaying functions:
 - Over / under voltage (2 7/ 59)
 - Over / under frequency (81 o/u)
 - Reverse power (kW) (32)
 - Reverse reactive power (kVAr) (32RV)
 - Overcurrent (50 / 51)
- Communications:
 - Customer data link (Modbus RTU)
 - Accessory module data link
 - Serial annunciator module data link
 - Cat Connect
- 3 Analog inputs
- 6 Customer programmable digital inputs
- Number of I/O varies on options selected:
 - 4 Programmable relay outputs (Form A)
 - 4 Programmable relay outputs (Form A)
 - 1 Programmable relay outputs (Form C)
 - 1 Programmable digital outputs

Cooling System

- Certified standard PGS provided
- ATAAC - 3516E Package Radiators shipped installed

Exhaust System

- Dry exhaust manifold
- Flanged faced outlet(s)

Fuel System

- Secondary fuel filters
- Fuel cooler; not included with packages without radiator
- Flexible fuel lines - shipped loose
- Fuel priming pump

General

- Caterpillar yellow with high gloss black rails and radiator
- Right hand servicing
- Flywheel and flywheel housing - SAE No. 00
- SAE Standard rotation

Generator and Attachments

- 3 Phase brushless, salient pole
- 6 Leads
- Low Voltage:
 - Random wound
 - Internal excitation
 - Winding temperature detectors
 - NEMA Class H insulation
 - Class H temperature rise at 40C ambient (125C prime / 150C standby)
 - Busbar connections, top center mounted, top cable entry
 - NEMA standard hole pattern
- Medium Voltage:
 - Form wound
 - Permanent magnet
 - Winding temperature detectors
 - NEMA Class H insulation, Class H temperature rise at 40C ambient (125C prime / 150C standby)
 - Busbar connections, right side extension box, bottom cable entry
 - NEMA standard hole pattern
- High Voltage:
 - Form wound - Permanent magnet
 - Permanent magnet
 - Winding temperature detectors
 - Anti Condensation Space Heater
 - Class H insulation, Class F temperature rise at 40C ambient (105C prime / 130C standby)

Governing System

- ADEM A3

Literature

- English

Lubrication System

- Lubricating oil
- Gear type lube oil pump
- Integral lube oil cool
- Oil filter, filler and dipstick

- Oil drain lines and valve
- Fumes disposal

Mounting System

- Rails - engine / generator / radiator mounting
- Anti-vibration mounts (shipped loose)
- Rubber anti-vibration mounts (shipped loose)

Starting System

- 24 Volt electric starting motor
- 45 Amp charging alternator
- Battery and battery rack w/cables
- Battery disconnect switch

Optional Equipment

Control System

- EMCP 4.3, EMCP 4.4

Air Inlet System

- Single element filter
- Dual element air cleaner

Cooling System

- Standard ambient radiators
- Standard ambient ATAAC radiators
- Optional installed radiators
- Optional installed ATAAC radiators
- Water level switch gauges
- Coolant

Crankcase System

- No explosion relief valves
- Explosion relief valves
- Ventilation system

Exhaust System

- Elbows
- Flange and exhaust expanders
- Flanges
- Flexible fittings
- Y-Adapters
- Mufflers
- Exhaust offset
- Tier 4 clean emissions module

- Tier 4 dosing cabinet
- Tier 4 clean emission MOD Kits
- Clean emission parts

Fuel System

- Primary Fuel Filter
- Fuel Priming Pumps (Tier 4) - Manual or electric

General

- US aid emblem
- Special paint (Colors other than Caterpillar yellow or high performance paints)

Generators and Attachments

- Low / Medium voltage: 380/400/415 volts, 3 phase 1500 rpm. RW, IE, No. of Leads = 6, Pitch = .6667: 1600 Frame
- Low / Medium voltage: 380/400/415 volts, 3 phase 1500 rpm. RW, PM, No. of Leads = 6, Pitch = .6667: 1600 and 1800 Frames
- Space heater
- Generator conversion
- Thermostate for space heater
- Alternator air cleaner
- Differential current transformers (DCT)
- Differential current transformers (DCT) 8.7 kV and 15 kV classes

Instrumentation

- Pyrometer and thermocouples

Lubrication System

- Lube oil in standard sump
- Oil level regulator
- Prelube pumps

Mounting System

- Puck style low efficiency isolators
- Spring type vibration isolators
- IBC vibration isolators

Power Connections

- Ground cables between generator and terminal box
- Neutral ground connections
- Center post busbar
- Right side power connections
- Left side power connections
- Rear power connections
- 2700 Frame, four lead, four terminal

- Low voltage circuit breakers

Special Tests / Reports

- Canadian Standards Association certification
- IBC certification
- OSHPD certification
- PGS test report @ 1.0 power factor
- PGS test report @ 0.8 power factor
- Standard engine test charge
- generator test report
- Fuel consumption test
- Generator set fuel consumption test
- Torsional vibration analysis reports

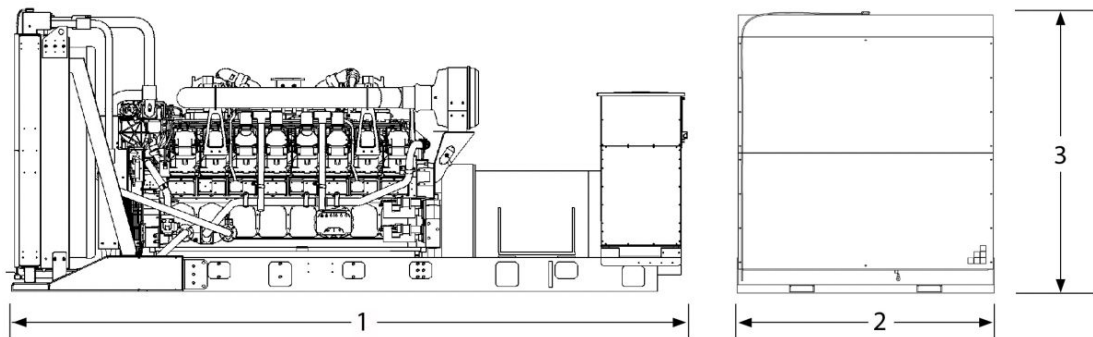
Starting and Charging

- Engine barring device
- 24 Volt battery set - Dry
- 10, 20, 35 and 50 amp battery chargers
- Electric starting motors
- Air starting motors
- Starter cover
- Air pressure regulator
- Jacket water heaters

Extended Service Coverage

- Platinum, Gold and Silver coverage

Dimensional Art



Dimensions	Dimension 1	Dimension 2	Dimension 3
Genset dimensions	6377 mm (251.7 in)	2286 mm (90.0 in)	2367 mm (93.2 in)



The International System of Units (SI) is used in this publication. CAT, CATERPILLAR, their respective logos, ADEM, EUI, S-O-S, "Caterpillar Yellow" and the "Power Edge" trade dress, as well as corporate and product identity used herein, are trademarks of Caterpillar and may not be used without permission.

3516B

1800 ekW/ 2250 kVA/ 50 Hz/ 1500 rpm/ 400 V/ 0.8 Power Factor

Rating Type: MISSION CRITICAL STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

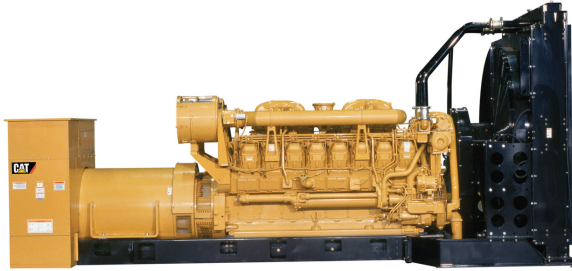


Image shown may not reflect actual configuration

3516B

1800 ekW/ 2250 kVA
50 Hz/ 1500 rpm/ 400 V

Metric English

Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	1800 ekW	
Genset Power Rating	2250 kVA	
Aftercooler (Separate Circuit)	30.0 ° C	86.0 ° F

Fuel Consumption		
100% Load with Fan	447.0 L/hr	118.1 gal/hr
75% Load with Fan	335.7 L/hr	88.7 gal/hr
50% Load with Fan	233.6 L/hr	61.7 gal/hr
25% Load with Fan	137.6 L/hr	36.3 gal/hr

Cooling System ¹		
Engine Coolant Capacity	233.0 L	61.6 gal
Radiator Water Capacity High Temp Circuit	N/A	N/A
Radiator Water Capacity Low Temp Circuit	N/A	N/A
Radiator Total Capacity	N/A	N/A

Inlet Air		
Combustion Air Inlet Flow Rate	137.0 m ³ /min	4837.6 cfm
Max. Allowable Combustion Air Inlet Temp	48 ° C	118 ° F

Exhaust System		
Exhaust Stack Gas Temperature	463.0 ° C	865.4 ° F
Exhaust Gas Flow Rate	353.2 m ³ /min	12471.8 cfm
Exhaust System Backpressure (Maximum Allowable)	6.7 kPa	27.0 in. water



3516B

1800 ekW/ 2250 kVA/ 50 Hz/ 1500 rpm/ 400 V/ 0.8 Power Factor

Rating Type: MISSION CRITICAL STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Heat Rejection		
Heat Rejection to Jacket Water	654 kW	37192 Btu/min
Heat Rejection to Exhaust (Total)	1579 kW	89796 Btu/min
Heat Rejection to Aftercooler	444 kW	25250 Btu/min
Heat Rejection to Atmosphere from Engine	138 kW	7848 Btu/min
Heat Rejection to Atmosphere from Generator	87 kW	4936 Btu/min

Alternator ²	
Motor Starting Capability @ 30% Voltage Dip	6134 skVA
Current	3248 amps
Frame Size	1667
Excitation	PM
Temperature Rise	150 ° C

Emissions (Nominal) ³		
NOx	3649.2 mg/Nm ³	7.2 g/hp-hr
CO	174.2 mg/Nm ³	0.3 g/hp-hr
HC	55.8 mg/Nm ³	0.1 g/hp-hr
PM	23.0 mg/Nm ³	0.0 g/hp-hr

DEFINITIONS AND CONDITIONS

1. For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.
2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.
3. Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NOx. Data shown is based on steady state operating conditions of 77° F, 28.42 in HG and number 2 diesel fuel with 35° API and LHV of 18,390 btu/lb. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% load and thus cannot be used to compare to EPA regulations which use values based on a weighted cycle.

3516B

1800 ekW/ 2250 kVA/ 50 Hz/ 1500 rpm/ 400 V/ 0.8 Power Factor

Rating Type: MISSION CRITICAL STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

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, 2006/95/EC, 2006/42/EC, 2004/108/EC.

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

MISSION CRITICAL STANDBY:Output available with varying load for the duration of the interruption of the normal source power. Average power output is 85% of the standby power rating. Typical peak demand up to 100% of standby rated ekW for 5% of the operating time. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046 standard conditions

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.). 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.

Performance No.: EM0614-01

Feature Code: 516DE9G

Generator Arrangement: 2523940

Date: 03/08/2019

Source Country: U.K.

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