



Image shown may not reflect actual package.

PRIME

**1820 e kW 2275 kVA
50 Hz 1500 rpm 400 Volts**

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

FEATURES

FUEL/EMISSIONS STRATEGY

- Low Emissions

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Cat dealers provide extensive post sale support including maintenance and repair agreements
- Cat dealers have over 1,600 dealer branch stores operating in 200 countries
- The Cat® S•O•SSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT 3516B-HD TA 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

CAT 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 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway•

PRIME 1820 kW 2275 kVA

50 Hz 1500 rpm 400 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> • Single element canister type air cleaner • Service indicator 	<input type="checkbox"/> Dual element & heavy duty air cleaners <input type="checkbox"/> Air inlet adapters & shutoff
Cooling	<ul style="list-style-type: none"> • Radiator with guard (43°C) • Coolant drain line with valve • Fan and belt guards • Caterpillar Extended Life Coolant • Low coolant level & high temperature alarm or shutdown 	<input type="checkbox"/> Radiator with 50°C ambient capability <input type="checkbox"/> Radiator removal <input type="checkbox"/> Heat exchanger and expansion tank <input type="checkbox"/> Radiator duct flange <input type="checkbox"/> Coolant level switch gauge <input type="checkbox"/> Jacket water heater
Exhaust	<ul style="list-style-type: none"> • Dry exhaust manifold • Flanged faced outlets 	<input type="checkbox"/> Mufflers and Silencers <input type="checkbox"/> Stainless steel exhaust flex fittings <input type="checkbox"/> Elbows, flanges, expanders & Y adapters
Fuel	<ul style="list-style-type: none"> • Primary & secondary fuel filters • Fuel priming pump • Flexible fuel lines 	<input type="checkbox"/> Fuel cooler <input type="checkbox"/> Water separator
Generator	<ul style="list-style-type: none"> • Class H insulation • Cat digital voltage regulator (CDVR) with KVAR/PF control, 3-phase sensing • Reactive droop 	<input type="checkbox"/> Oversize & premium generators <input type="checkbox"/> Winding temperature detectors <input type="checkbox"/> Anti-condensation heaters
Power Termination	<ul style="list-style-type: none"> • Bus bar (IEC mechanical lug holes) • Top cable entry 	<input type="checkbox"/> Circuit breakers, IEC compliant, 3 or 4 pole with shunt trip (low voltage only), choice of trip units, manual or electrically operated <input type="checkbox"/> Bottom cable entry <input type="checkbox"/> Power terminations can be located on the right, left and/or rear as an option.
Governor	<ul style="list-style-type: none"> • ADEM™ 3 	<input type="checkbox"/> Load share module
Control Panels	<ul style="list-style-type: none"> • EMCP 3.1 • User Interface panel (UIP) - rear mount • AC & DC customer wiring area (right side) • Emergency stop pushbutton 	<input type="checkbox"/> EMCP 3.2 ... <input type="checkbox"/> EMCP 3.3 <input type="checkbox"/> Option for right or left mount UIP <input type="checkbox"/> Local & remote annunciator modules <input type="checkbox"/> Digital I/O Module <input type="checkbox"/> Generator temperature monitoring & protection <input type="checkbox"/> Remote monitoring software
Lube	<ul style="list-style-type: none"> • Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump 	<input type="checkbox"/> Oil level regulator <input type="checkbox"/> Deep sump oil pan <input type="checkbox"/> Electric & air prelube pumps <input type="checkbox"/> Manual prelube with sump pump <input type="checkbox"/> Duplex oil filter
Mounting	<ul style="list-style-type: none"> • Rails - Engine / generator / radiator mounting • Rubber anti-vibration mounts (shipped loose) 	<input type="checkbox"/> Isolator removal <input type="checkbox"/> Spring-type vibration isolator (shipped loose)
Starting/Charging	<ul style="list-style-type: none"> • 24 volt starting motor(s) • Batteries with rack and cables • Battery disconnect switch 	<input type="checkbox"/> Battery chargers (5 or 10 Amp) <input type="checkbox"/> 45 amp charging alternator <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Ether starting aids <input type="checkbox"/> Heavy duty starting motors <input type="checkbox"/> Barring device (manual)
General	<ul style="list-style-type: none"> • Right-hand service • Paint - Caterpillar Yellow except rails and radiators are gloss black • SAE standard rotation • Flywheel and flywheel housing - SAE No. 00 	<input type="checkbox"/> Front stub shaft <input type="checkbox"/> CSA certification <input type="checkbox"/> CE Certificate of Conformance *Not included with packages without radiators

PRIME 1820 eKW 2275 kVA

50 Hz 1500 rpm 400 Volts



SPECIFICATIONS

CAT GENERATOR

Caterpillar Generator	
Frame size.....	1844
Excitation.....	Permanent Magnet
Pitch.....	0.6667
Number of poles.....	4
Number of bearings.....	2
Number of leads.....	6
Insulation.....	UL 1446 Recognized Class H with tropicalization and antiabrasion
Alignment.....	Closed Coupled
Overspeed capability - % of rated.....	150
Wave form.....	.003.00
Paralleling kit/Droop transformer.....	Standard
Voltage regulator.3 Phase sensing with selectable volts/Hz	
Voltage regulation.....	Less than +/- 1/2% (steady state) Less than +/- 1% (no load to full load)
Telephone Influence Factor.....	Less than 50
Harmonic Distortion.....	Less than 5%

CAT DIESEL ENGINE

3516B-HD, V-16, 4-stroke-cycle watercooled diesel	
Bore - mm.....	170.00 mm (6.69 in)
Stroke - mm.....	215.00 mm (8.46 in)
Displacement - L.....	78.08 L (4764.73 in ³)
Compression ratio.....	15.5:1
Aspiration.....	TA
Fuel system.....	Electronic unit injection
Governor type.....	ADEM3

CAT EMCP CONTROL PANEL

- EMCP 3.1 (Standard)
- EMCP 3.2 / EMCP 3.3 (Option)
- Single location customer connector point
- True RMS AC metering, 3-phase
- Controls
 - Run / Auto / Stop control
 - Speed adjust
 - Voltage Adjust
 - Emergency Stop Pushbutton
 - Engine cycle crank
- Digital Indication for:
 - RPM
 - Operating hours
 - Oil pressure
 - Coolant temperature
 - System DC volts
 - L-L volts, L-N volts, Phase amps, Hz
 - eKW, kVA, kVAR, kWhr, %kW, PF (EMCP 3.2 / 3.3)
- Shutdowns with common indicating light for:
 - Low oil pressure
 - High coolant temperature
 - Low coolant level
 - Overspeed
 - Emergency stop
 - Failure to start (overcrank)
- Programmable protective relaying functions: (EMCP 3.2 & 3.3)
 - Under and over voltage
 - Under and over frequency
 - Overcurrent (time and inverse time)
 - Reverse power (EMCP 3.3)
- MODBUS isolated data link, RS-485 half-duplex (EMCP 3.2 & 3.3)
- Options
 - Vandal door
 - Local annunciator module
 - Remote annunciator module
 - Input / Output module
 - RTD / Thermocouple modules
 - Monitoring software

PRIME 1820 ekW 2275 kVA

50 Hz 1500 rpm 400 Volts



TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8383	
Low Emissions		
Coolant to aftercooler Coolant to aftercooler temp max	90 ° C	194 ° F
Generator Set Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	2275 kVA 1820 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	478.2 L/hr 359.3 L/hr 246.9 L/hr	126.3 Gal/hr 94.9 Gal/hr 65.2 Gal/hr
Cooling System¹ Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	382.0 L 233.0 L 149.0 L	100.9 gal 61.6 gal 39.4 gal
Inlet Air Combustion air inlet flow rate	150.7 m ³ /min	5321.9 cfm
Exhaust System Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	519.1 ° C 420.2 m ³ /min 203.2 mm 6.7 kPa	966.4 ° F 14839.2 cfm 8.0 in 26.9 in. water
Heat Rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to aftercooler Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	711 kW 1923 kW 347 kW 164 kW 79.8 kW	40434 Btu/min 109361 Btu/min 19734 Btu/min 9327 Btu/min 4538.2 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	6537 skVA 1844 105 ° C	189 ° F
Lube System Sump refill with filter	401.3 L	106.0 gal
Emissions (Nominal)³ NOx mg/nm ³ CO mg/nm ³ HC mg/nm ³ PM mg/nm ³	2891.2 mg/nm ³ 359.7 mg/nm ³ 64.1 mg/nm ³ 13.8 mg/nm ³	

¹ For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

² Generator temperature rise is based on a 40° C (104° F) 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.

PRIME 1820 ekW 2275 kVA

50 Hz 1500 rpm 400 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 72/23/EEC, 98/37/EC, 2004/108/EC

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 ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year. Prime power in accordance with ISO3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm temperature.

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 Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Caterpillar dealer.

PRIME 1820 ekW 2275 kVA

50 Hz 1500 rpm 400 Volts



DIMENSIONS

Package Dimensions		
Length	Information not available at this time.	
Width		
Height		
Weight	9072 kg	20,000 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #).

Performance No.: DM8383

Feature Code: 516DE92

Gen. Arr. Number: 3111142

Source: European Sourced

May 06 2010

16298243

www.CAT-ElectricPower.com

© 2010 Caterpillar
All rights reserved.

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

CAT, CATERPILLAR, SAFETY.CAT.COM their respective logos, "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.