



DIESEL GENERATOR SET

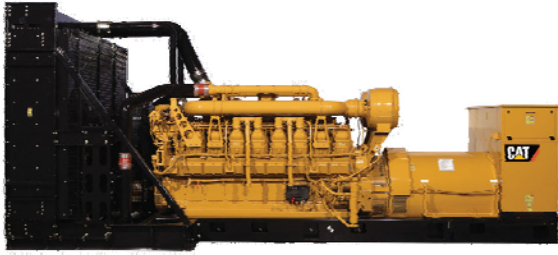


Image shown may not reflect actual package

PRIME **2000 ekW 2500 kVA** **50 Hz 1500 rpm 400 Volts**

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

FUEL/EMISSIONS STRATEGY

- Low fuel consumption

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 1,800 dealer branch stores operating in 200 countries.
- The Cat S•O•SSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

CAT[®] 3516C-HD TA DIESEL ENGINE

- Reliable, rugged, durable design
- Four-stroke 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
- High efficiency

CAT EMCP 4 CONTROL PANELS

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

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> • Single element canister type air cleaner with service indicator 	<input type="checkbox"/> Dual element air cleaners
Cooling	<ul style="list-style-type: none"> • Package mounted radiator 	
Exhaust	<ul style="list-style-type: none"> • Exhaust flange outlet 	<input type="checkbox"/> Mufflers
Fuel	<ul style="list-style-type: none"> • Secondary fuel filters • Fuel cooler • Fuel priming pump 	
Generator	<ul style="list-style-type: none"> • Matched to the performance and output characteristics of Cat engines 	<input type="checkbox"/> Oversize & premium generators <input type="checkbox"/> Permanent magnet excitation (PMG) <input type="checkbox"/> Winding temperature detectors <input type="checkbox"/> Anti-condensation space heaters
Power Termination	<ul style="list-style-type: none"> • Bus bar 	<input type="checkbox"/> Circuit breakers, UL listed <input type="checkbox"/> Bottom cable entry <input type="checkbox"/> Right, left, and/or rear power termination
Governor	<ul style="list-style-type: none"> • ADEM™ A3 	<input type="checkbox"/> Load share module
Control Panel	<ul style="list-style-type: none"> • EMCP 4 	<input type="checkbox"/> EMCP 4.2 <input type="checkbox"/> EMCP 4.3 <input type="checkbox"/> EMCP 4.4 <input type="checkbox"/> Local & remote annunciator modules <input type="checkbox"/> Digital I/O Module <input type="checkbox"/> Generator temperature monitoring & protection
Mounting		<input type="checkbox"/> Spring type vibration isolator <input type="checkbox"/> IBC 2006 seismic certification
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 (10 & 20 Amp) <input type="checkbox"/> 45A 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) <input type="checkbox"/> Air starting motor with control & silencer <input type="checkbox"/> Jacket water heater
General	<ul style="list-style-type: none"> • Paint – Caterpillar Yellow except rails and radiators gloss black 	<input type="checkbox"/> UL 2200 listed <input type="checkbox"/> CSA Certification

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SPECIFICATIONS

CAT GENERATOR

Frame 1844
Excitation PM
Pitch..... 0.6667
Number of poles.....4
Number of bearings2
Insulation.. Class H w/tropicalization and antiabrasion
IP ratingDrip proof IP23
Over speed capability - % of rated.....125%
Wave form deviation..... 3 %
Voltage regulator..... 3 phase sensing

CAT DIESEL ENGINE

3516C-HD, ATAAC, V-16, 4-Stroke Water-cooled Diesel
Bore170.00 mm (6.69 in)
Stroke215.00 mm (8.46 in)
Displacement78.08 L (4764.73 in³)
Compression ratio.....14.0:1
Aspiration.....TA
Fuel system.....Electronic unit injection
Governor Type.....ADEM3

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- ekW, kVA, kVAR, kW-hr, %kW, PF

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse reactive power (kVAR) (32RV)
- Overcurrent (50/51)

Communications:

- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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Technical Data

Open Generator Set - 1500 rpm/50 Hz	DM8445	
Optimized for low fuel consumption		
Generator Set Package Performance		
Genset Power Rating @ 0.8 pf	2500 kVA	
Genset Power Rating	2000 ekW	
Fuel Consumption		
100% Load with fan	521.5 L/hr	137.8 Gal/hr
75% Load with fan	397.8 L/hr	105.1 Gal/hr
50% Load with fan	279.3 L/hr	73.8 Gal/hr
Inlet Air		
Combustion air inlet flow rate	171.2 m ³ /min	6045.9 cfm
Exhaust System		
Exhaust stack gas temperature (engine out)	465.8 °C	870.4 °F
Exhaust gas flow rate	444.2 m ³ /min	15686.8 cfm
Exhaust system backpressure (maximum allowable)	6.7 kPA	26.9 in water
Heat Rejection		
Heat rejection to jacket water	721 kW	41002 Btu/min
Heat rejection to exhaust	1964 kW	111690 Btu/min
Heat rejection to aftercooler	514 kW	29230 Btu/min
Heat rejection to atmosphere from engine	142 kW	8075 Btu/min
Heat rejection to atmosphere from generator	93.8 kW	5336 Btu/min
Alternator		
Motor starting capability @30% voltage dip	6537 skVA	
Frame	1844	
Temperature Rise	125 °C	225 °F
Lube System		
Sump refill with filter	675 L	123.1 gal
Emissions (Nominal)²		
NO _x g/hp-hr	4.91 g/hp-hr	
CO g/hp-hr	0.41 g/hp-hr	
HC g/hp-hr	0.02 g/hp-hr	
PM g/hp-hr	0.01 g/hp-hr	

¹ Some 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

² Emissions data measurement procedures are consistent with those described in EPA CFR 40 Part 89, Subpart D & E and ISO8179-1 for measuring HC, CO, PM, NO_x

Data shown is based on steady state operating conditions of 177°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.

Values shown as zero may be greater than zero but were below the detection level of the equipment used at the time of measurement.

Emissions values are tailpipe out with aftertreatment installed.

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RATING DEFINITIONS AND CONDITIONS

Applicable Codes and Standards: AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 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.

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.

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DIMENSIONS

Package Dimensions		
Length	7542 mm	296.9 in
Width	2569 mm	101.1 in
Height	3096 mm	121.9 in

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions.

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Feature Code: 516DE9D
Generator Arrangement: 372-3056
Source: U.S. Sourced
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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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