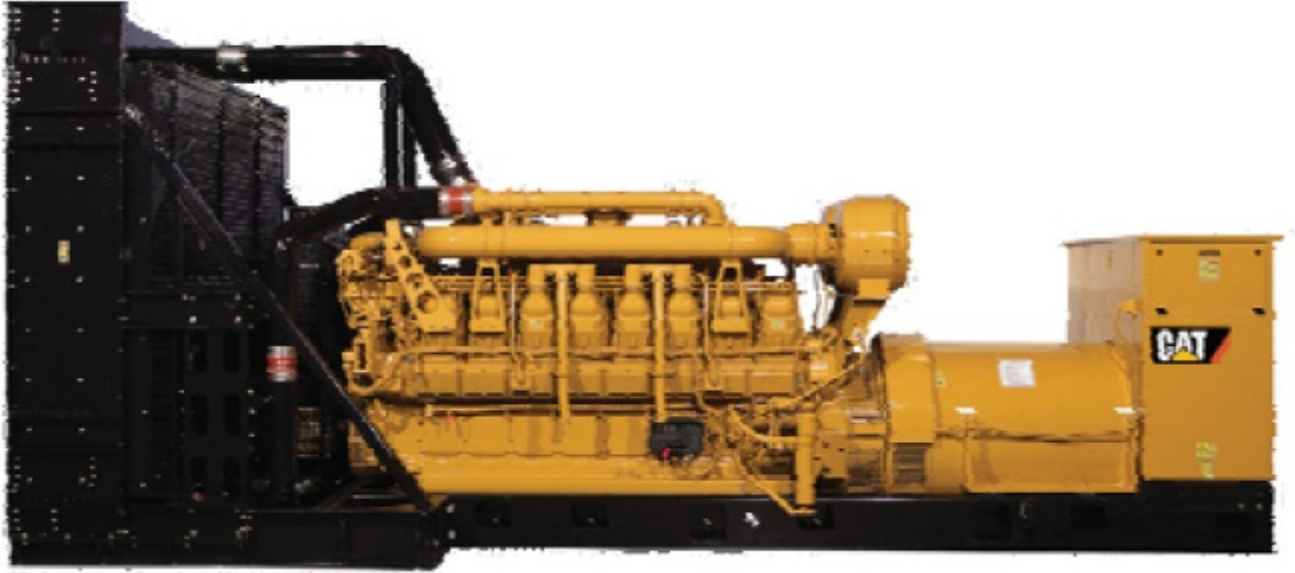


ﺋﯩﺮﺍﺗﻮﺭ : Caterpillar

ﻣﻮﺗﻮﺭ ﺩﯨﺰﯨﻞ : Caterpillar

Standby		Prime		ﺩﯨﺰﯨﻞ ﺋﯩﺮﺍﺗﻮﺭ
KVA	KW	KVA	KW	
2750	2200	2500	2000	



موتور دیزل		
Manufacturer	Caterpillar	تولید کننده
Model	3516C-HD TA	مدل
Number of cylinders	12	تعداد سیلندر ها
Cylinder arrangement	vertical	آرایش سیلندر ها
Displacement , Liters	78.08	جا به جایی
Bore × Stroke , mm	170× 215	قطر سیلندر × کورس پیستون
Compression Ratio	14.0:1	نسبت تراکم
Aspiration	Turbocharged Aftercooled	سیستم تنفس
Gross engine power, kWb	2000	قدرت نافالص موتور
Fan Power, kWm	2200	قدرت فن
Combustion air flow, m <sup>3</sup> /min	183.7	جریان هوای احتراق
Exhaust gas temp.(after turbo) , °C	477.8 °	دمای گاز خروجی از اگزوز
Exhaust gas flow (after turbo) , m <sup>3</sup> /min	484.2	جریان هوای خروجی از اگزوز

### ژنراتور

Manufacturer	Caterpillar	تولید کننده
Standby power at rated voltage ,KVA	2750	توان standby در ولتاژ نامی
Efficiency, %	90.3	راندمان
Power factor	0.8	ضریب قدرت
Phase	3	فاز
Frequency, Hz	50	فرکانس
Speed, Rpm	1500	سرعت
Voltage, V	380	ولتاژ
Excitation	PM	سیستم تمریک
Voltage Regulator	Three phase sensing	رگولاتور ولتاژ
Voltage Regulation, %	Less than +/- 1/2%	تنظیم ولتاژ
Over speed, Rpm	2250	مداکثر سرعت مجاز
Insulation class	H	کلاس عایق
Connection	Terminal strip connection	اتصال
Protection class	IP23	کلاس حفاظتی



## DIESEL GENERATOR SET

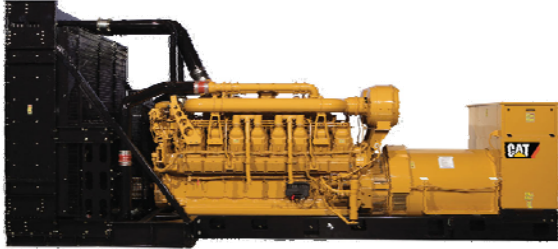


Image shown may not reflect actual package

### Standby 2200 ekW 2750 kVA 50 Hz 1500 rpm 11000 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<sup>®</sup> 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•S<sup>SM</sup> program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

#### CAT<sup>®</sup> 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

# STANDBY 2200 eKW 2750 kVA

50 Hz 1500 rpm 11000 Volts



## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> <li>• Single element canister type air cleaner with service indicator</li> </ul>	<input type="checkbox"/> Dual element air cleaners
Cooling	<ul style="list-style-type: none"> <li>• Package mounted radiator</li> </ul>	
Exhaust	<ul style="list-style-type: none"> <li>• Exhaust flange outlet</li> </ul>	<input type="checkbox"/> Mufflers
Fuel	<ul style="list-style-type: none"> <li>• Secondary fuel filters</li> <li>• Fuel cooler</li> <li>• Fuel priming pump</li> </ul>	
Generator	<ul style="list-style-type: none"> <li>• Matched to the performance and output characteristics of Cat engines</li> </ul>	<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"> <li>• Bus bar</li> </ul>	<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"> <li>• ADEM™ A3</li> </ul>	<input type="checkbox"/> Load share module
Control Panel	<ul style="list-style-type: none"> <li>• EMCP 4</li> </ul>	<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"> <li>• 24 volt starting motor(s)</li> <li>• Batteries with rack and cables</li> <li>• Battery disconnect switch</li> </ul>	<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"> <li>• Paint – Caterpillar Yellow except rails and radiators gloss black</li> </ul>	<input type="checkbox"/> UL 2200 listed <input type="checkbox"/> CSA Certification

# STANDBY 2200 eKW 2750 kVA

50 Hz 1500 rpm 11000 Volts



## SPECIFICATIONS

### CAT GENERATOR

Frame ..... 3010  
Excitation ..... PM  
Pitch..... 0.6667  
Number of poles.....4  
Number of bearings .....2  
Insulation.. Class H w/tropicalization and antiabrasion  
IP rating .....Drip 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  
Bore .....170.00 mm (6.69 in)  
Stroke .....215.00 mm (8.46 in)  
Displacement .....78.08 L (4764.73 in<sup>3</sup>)  
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

# STANDBY 2200 ekW 2750 kVA

50 Hz 1500 rpm 11000 Volts



## Technical Data

Open Generator Set - 1500 rpm/50 Hz	DM8444	
<b>Optimized for low fuel consumption</b>		
<b>Generator Set Package Performance</b>		
Genset Power rating @ 0.8 pf	2750 kVA	
Genset Power Rating	2200 ekW	
<b>Fuel Consumption</b>		
100% Load with fan	572.3 L/hr	151.2 Gal/hr
75% Load with fan	437.1 L/hr	115.5 Gal/hr
50% Load with fan	300.9 L/hr	79.5 Gal/hr
<b>Inlet Air</b>		
Combustion air inlet flow rate	183.7 m <sup>3</sup> /min	6487 cfm
<b>Exhaust System</b>		
Exhaust stack gas temperature (engine out)	477.8 °C	892 °F
Exhaust gas flow rate	484.2 m <sup>3</sup> /min	17097.8 cfm
Exhaust system backpressure (maximum allowable)	6.7 kPA	26.9 in water
<b>Heat Rejection</b>		
Heat rejection to jacket water	757 kW	43050 Btu/min
Heat rejection to exhaust	218 kW	12394 Btu/min
Heat rejection to aftercooler	594 kW	33781 Btu/min
Heat rejection to atmosphere from engine	147 kW	8360 Btu/min
Heat rejection to atmosphere from generator	93.75 kW	5336 Btu/min
<b>Alternator</b>		
Motor starting capability @30% voltage dip	5668 skVA	
Frame	3010	
Temperature Rise	130 °C	234 °F
<b>Lube System</b>		
Sump refill with filter	675 L	123.1 gal
<b>Emissions (Nominal)<sup>2</sup></b>		
NO <sub>x</sub> g/hp-hr	5.25 g/hp-hr	
CO g/hp-hr	0.38 g/hp-hr	
HC g/hp-hr	0.02 g/hp-hr	
PM g/hp-hr	0.02 g/hp-hr	

<sup>1</sup> 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

<sup>2</sup> 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<sub>x</sub>

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.

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.

# STANDBY 2200 eKW 2750 kVA

50 Hz 1500 rpm 11000 Volts



## 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

**Standby** - Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby power rating. 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.



# STANDBY 2200 eKW 2750 kVA

50 Hz 1500 rpm 11000 Volts



## DIMENSIONS

---

Package Dimensions		
Length	6951 mm	273.7 in
Width	2569 mm	101.1 in
Height	3095 mm	121.9 in

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

[www.Cat-ElectricPower.com](http://www.Cat-ElectricPower.com)

©2013 Caterpillar  
All rights reserved.

Feature Code: 516DE9E  
Generator Arrangement: 362-2844  
Source: U.S. Sourced  
December 2013

EPD0250-A

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

CAT, CATERPILLAR, their respective logos, "Caterpillar Yellow," 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.