



Image shown may not reflect actual package.

## STANDBY 400 e kW 500 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.

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## FEATURES

### FUEL/EMISSIONS STRATEGY

- Low fuel consumption

### DESIGN CRITERIA

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

### FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested

### SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

### WORLDWIDE PRODUCT SUPPORT

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

### CAT® C15 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke diesel engine combines consistent performance and excellent fuel economy with minimum weight
- Electronic engine control

### CAT GENERATOR

- Matched to the performance and output characteristics of Caterpillar engines
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- UL 1446 Recognized Class H insulation

### CAT EMCP 3 SERIES 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"> <li>• Light Duty Air filter</li> </ul>	<ul style="list-style-type: none"> <li>• Canister Style Air Cleaners</li> <li>• Air Cleaner - single stage</li> <li>• Dual element</li> <li>• Heavy duty</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Radiator package mounted(50°C)</li> <li>• Coolant drain line with valve terminated at edge of base</li> <li>• Fan and belt guards</li> <li>• Coolant level sight gauge</li> <li>• Caterpillar Extended Life Coolant</li> </ul>	<ul style="list-style-type: none"> <li>• Radiator removal</li> <li>• Radiator duct flange &amp; guard</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Dry exhaust manifold</li> <li>• Flanged faced outlets</li> <li>• Stainless Steel Flex with split-cuff connection</li> </ul>	<ul style="list-style-type: none"> <li>• Mufflers</li> <li>• Manifold &amp; Turbocharger guards</li> <li>• Elbows</li> </ul>
Fuel	<ul style="list-style-type: none"> <li>• Primary fuel filter with integral water separator</li> <li>• Secondary fuel filters</li> <li>• Fuel priming pump</li> <li>• Engine fuel transfer pump</li> <li>• Flex fuel lines</li> <li>• Fuel cooler*</li> <li>• Base, formed steel with integral 8 hour fuel tank</li> <li>*Not included with packages without radiators</li> </ul>	<ul style="list-style-type: none"> <li>• Integral single wall and dual wall fuel tank bases</li> <li>• Manual transfer pump</li> <li>• Fuel level switch</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• R448 voltage regulator with load adjustment module</li> <li>• IP23 Protection</li> </ul>	<ul style="list-style-type: none"> <li>• CDVR with KVAR/PF control</li> <li>• Oversize and premium generators</li> <li>• Bearing/Stator temperature detection (premium generator)</li> <li>• 3 phase sensing</li> <li>• Anti-condensation space heaters</li> <li>• Cable access box</li> <li>• Reactive droop</li> </ul>
Power Termination	<ul style="list-style-type: none"> <li>• Rear mounted circuit breaker, IEC 3 pole</li> <li>• Segregated low voltage wiring panel</li> </ul>	<ul style="list-style-type: none"> <li>• Circuit breakers, IEC compliant, 3 pole, 4 pole</li> <li>• Circuit breaker Shunt trip</li> <li>• Circuit breaker Auxillary contact</li> <li>• Floor standing IEC breakers</li> </ul>
Governor	<ul style="list-style-type: none"> <li>• ADEM™A4</li> </ul>	<ul style="list-style-type: none"> <li>• Load share module</li> </ul>
Control Panels	<ul style="list-style-type: none"> <li>• EMCP 3.1 (rear mounted)</li> <li>• Speed adjust</li> <li>• Emergency stop pushbutton</li> <li>• Voltage adjust</li> </ul>	<ul style="list-style-type: none"> <li>• EMCP 3.2 (can be RH mounted)</li> <li>• Local annunciator modules (NFPA 99/110)</li> <li>• Remote annunciator modules (NFPA 99/110)</li> <li>• Discrete I/O module</li> </ul>
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil and filter</li> <li>• Oil drain line with valves</li> <li>• Fumes disposal</li> <li>• Gear type lube oil pump</li> </ul>	<ul style="list-style-type: none"> <li>• Manual sump pump</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Linear vibration isolation-seismic zone 4</li> </ul>	<ul style="list-style-type: none"> <li>• Formed steel wide base frame</li> <li>• Formed steel narrow base</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor</li> <li>• Battery with rack and cables</li> </ul>	<ul style="list-style-type: none"> <li>• Jacket water heater with shut off valves</li> <li>• Block heater</li> <li>• Ether starting aids</li> <li>• Battery disconnect switch</li> <li>• Battery chargers ( 5 &amp; 10 amp)</li> <li>• Oversized batteries</li> <li>• 45 amp charging alternator</li> </ul>
General	<ul style="list-style-type: none"> <li>• Paint - Caterpillar yellow except rails and radiators gloss black</li> <li>• Flywheel and flywheel housing - SAE No.1</li> </ul>	

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## SPECIFICATIONS

### CAT GENERATOR

Frame size..... LC6114D  
Excitation..... Self Excitation  
Pitch..... 0.6667  
Number of poles..... 4  
Number of bearings..... Single Bearing  
Number of Leads..... 12  
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion  
- Consult your Caterpillar dealer for available voltages  
IP Rating..... IP23  
Alignment..... Pilot Shaft  
Overspeed capability..... 125% of rated  
Wave form Deviation (Line to Line)..... 2%  
Voltage regulator..... Single phase sensing with selectable volts/Hz  
Voltage regulation..... Less than +/- 1/2% (steady state)  
Less than +/- 1/2% (w/ 3% speed change)  
Telephone influence factor..... Less than 50  
Harmonic Distortion..... Less than 5%

### CAT DIESEL ENGINE

C15 ATAAC, L-6, 4-stroke water-cooled diesel  
Bore..... 137.20 mm (5.4 in)  
Stroke..... 171.40 mm (6.75 in)  
Displacement..... 15.20 L (927.56 in<sup>3</sup>)  
Compression Ratio..... 16.1:1  
Aspiration..... ATAAC  
Fuel System..... MEUI  
Governor Type..... Caterpillar ADEM control system

### CAT EMCP 3 CONTROL PANELS

- EMCP 3.1 (Standard)
- UL/CSA/CE
- NEMA 1, IP22 enclosure
- Run/Auto/Stop control
- True RMS metering, 3-phase
- Speed Adjust
- Vandal cover (option)
- Voltage adjust
- 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, kW-hr, %kW, PF, (EMCP3.2/3.3)
- 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)
  - Under and over voltage
  - Under and over frequency
  - Reverse power
  - Overcurrent
- MODBUS isolated data link (RS-485 half-duplex EMCP 3.2)

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## TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8491	
<b>Low BSFC</b>		
<b>Generator Set Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	500 kVA 400 ekW	
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	106.6 L/hr 81.2 L/hr 57.2 L/hr	28.2 Gal/hr 21.5 Gal/hr 15.1 Gal/hr
<b>Cooling System<sup>1</sup></b> Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine Coolant capacity with radiator/exp. tank Engine coolant capacity Radiator coolant capacity	0.12 kPa 660 m <sup>3</sup> /min 57.8 L 20.8 L 37.0 L	0.48 in. water 23308 cfm 15.3 gal 5.5 gal 9.8 gal
<b>Inlet Air</b> Combustion air inlet flow rate	28.2 m <sup>3</sup> /min	995.9 cfm
<b>Exhaust System</b> Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	508.2 ° C 78.1 m <sup>3</sup> /min 152.4 mm 6.8 kPa	946.8 ° F 2758.1 cfm 6.0 in 27.3 in. water
<b>Heat Rejection</b> Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	157 kW 355 kW 97 kW 27.8 kW	8929 Btu/min 20189 Btu/min 5516 Btu/min 1581.0 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	923 skVA LC6114D 163 ° C	293 ° F
<b>Emissions (Nominal)<sup>3</sup></b> NOx mg/nm <sup>3</sup> CO mg/nm <sup>3</sup> HC mg/nm <sup>3</sup> PM mg/nm <sup>3</sup>	3334.5 mg/nm <sup>3</sup> 181.9 mg/nm <sup>3</sup> 3.1 mg/nm <sup>3</sup> 6.5 mg/nm <sup>3</sup>	

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

<sup>2</sup> Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

<sup>3</sup> 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.

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## RATING DEFINITIONS AND CONDITIONS

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**Meets or Exceeds International Specifications:** AS1359, CSA, IEC60034, ISO3046, ISO8528, NEMA MG 1-33, UL508A, 98/37/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. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown temperature.

**Ratings** are based on SAE J1995 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.

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## DIMENSIONS

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Package Dimensions		
Length	3822.7 mm	150.5 in
Width	1110.0 mm	43.7 in
Height	2166.0 mm	85.28 in
Weight	4032 kg	8,889 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2781056).

Performance No.: DM8491

Feature Code: C15DEM6

Gen. Arr. Number: 2351207

Source: China

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