



Image shown may not reflect actual package.

## PRIME

**400 ekW 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.

## FEATURES

### FUEL/EMISSIONS STRATEGY

- Low Fuel consumption

### 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•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 Cat 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 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         | • Air cleaner                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Cooling           | • Package mounted radiator                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Exhaust           | • Exhaust flange outlet                                                                                                                                                                                        | <input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Critical Mufflers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Fuel              | • Primary fuel filter with integral water separator<br>• Secondary fuel filters<br>• Fuel priming pump                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Generator         | • Matched to the performance and output characteristics of Cat engines<br>• Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time<br>• IP23 protection | <input type="checkbox"/> Oversize and premium generators<br><input type="checkbox"/> Permanent magnet excitation (PMG)<br><input type="checkbox"/> Internal excited (IE)<br><input type="checkbox"/> Anti-condensation space heaters                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Power Termination | • Bus bar                                                                                                                                                                                                      | <input type="checkbox"/> Circuit breakers, UL listed<br><input type="checkbox"/> Circuit breakers, IEC compliant                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Control Panel     | • EMCP 4 Genset Controller                                                                                                                                                                                     | <input type="checkbox"/> EMCP 4.2<br><input type="checkbox"/> EMCP 4.3<br><input type="checkbox"/> EMCP 4.4<br><input type="checkbox"/> Local and remote annunciator modules<br><input type="checkbox"/> Load share module<br><input type="checkbox"/> Digital I/O module<br><input type="checkbox"/> Remote monitoring software                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Mounting          | • Rubber vibration isolators                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Starting/Charging | • 24 volt starting motor<br>• Batteries                                                                                                                                                                        | <input type="checkbox"/> Battery chargers<br><input type="checkbox"/> Oversize batteries<br><input type="checkbox"/> Jacket water heater<br><input type="checkbox"/> Heavy duty starting system<br><input type="checkbox"/> Charging alternator                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| General           | • Paint - Caterpillar Yellow except rails and radiators gloss black                                                                                                                                            | The following options are based on regional and product configuration:<br><input type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007<br><input type="checkbox"/> UL 2200 package<br><input type="checkbox"/> EU Certificate of Conformance (CE)<br><input type="checkbox"/> CSA Certification<br><input type="checkbox"/> EEC Declaration of Conformity<br><input type="checkbox"/> Narrow, wide or skid base<br><input type="checkbox"/> Sound attenuated, weather protective or high ambient weather protective enclosures<br><input type="checkbox"/> Single or dual wall integral fuel tanks<br><input type="checkbox"/> Single or dual wall sub-base fuel tanks<br><input type="checkbox"/> Integral & sub-base UL listed dual wall fuel tanks<br><input type="checkbox"/> Automatic transfer switches (ATS) |

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## SPECIFICATIONS

### CAT GENERATOR

Frame size.....LC6114F  
Excitation..... Self Excitation  
Pitch..... 0.6667  
Number of poles..... 4  
Number of bearings..... Single bearing  
Number of Leads..... 012  
Insulation..... UL 1446 Recognized Class H with  
tropicalization and antiabrasion  
- Consult your Caterpillar dealer for available voltages  
IP Rating..... Drip Proof IP23  
Alignment..... Pilot Shaft  
Overspeed capability..... 150  
Wave form Deviation (Line to Line)..... 2%  
Voltage regulator..... Three phase sensing  
Voltage regulation..... Less than +/- 1/2% (steady state)  
Less than +/- 1/2% (w/ 3% speed change)

### CAT DIESEL ENGINE

C15 ATAAC, I-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..... Air-to-Air Aftercooled  
Fuel System..... MEUI  
Governor Type..... Caterpillar ADEM control system

### CAT EMCP 4 SERIES CONTROLS

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)
- kW, kVA, kVAR, kW-hr, %kW, PF (4.2 only)

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) (4.2 only)
- Reverse reactive power (kVAr) (32RV)
- Overcurrent (50/51)

Communications:

- Four digital inputs (4.1)
- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU) (4.2 only)
- Accessory module data link (4.2 only)
- Serial annunciator module data link (4.2 only)
- 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/400 Volts                                                                                                                                                                                        | DM8494                                                                                                    |                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Low BSFC                                                                                                                                                                                                                               |                                                                                                           |                                                                 |
| <b>Generator Set Package Performance</b><br>Genset Power rating @ 0.8 pf<br>Genset Power rating with fan                                                                                                                               | 500 kVA<br>400 ekW                                                                                        |                                                                 |
| <b>Fuel Consumption</b><br>100% load with fan<br>75% load with fan<br>50% load with fan                                                                                                                                                | 102.0 L/hr<br>76.2 L/hr<br>54.0 L/hr                                                                      | 26.9 Gal/hr<br>20.1 Gal/hr<br>14.3 Gal/hr                       |
| <b>Cooling System<sup>1</sup></b><br>Air flow restriction (system)<br>Air flow (max @ rated speed for radiator arrangement)<br>Engine Coolant capacity with radiator/exp. tank<br>Engine coolant capacity<br>Radiator coolant capacity | 0.12 kPa<br>476 m <sup>3</sup> /min<br>47.8 L<br>20.8 L<br>27.0 L                                         | 0.48 in. water<br>16810 cfm<br>12.6 gal<br>5.5 gal<br>7.1 gal   |
| <b>Inlet Air</b><br>Combustion air inlet flow rate                                                                                                                                                                                     | 28.1 m <sup>3</sup> /min                                                                                  | 992.3 cfm                                                       |
| <b>Exhaust System</b><br>Exhaust stack gas temperature<br>Exhaust gas flow rate<br>Exhaust flange size (internal diameter)<br>Exhaust system backpressure (maximum allowable)                                                          | 511.3 °C<br>79.2 m <sup>3</sup> /min<br>152.4 mm<br>10.0 kPa                                              | 952.3 °F<br>2796.9 cfm<br>6.0 in<br>40.2 in. water              |
| <b>Heat Rejection</b><br>Heat rejection to coolant (total)<br>Heat rejection to exhaust (total)<br>Heat rejection to atmosphere from engine<br>Heat rejection to atmosphere from generator                                             | 149 kW<br>360 kW<br>46 kW<br>23.3 kW                                                                      | 8474 Btu/min<br>20473 Btu/min<br>2616 Btu/min<br>1325.1 Btu/min |
| <b>Alternator<sup>2</sup></b><br>Motor starting capability @ 30% voltage dip<br>Frame<br>Temperature Rise                                                                                                                              | 1213 skVA<br>LC6114F<br>125 °C                                                                            | 225 °F                                                          |
| <b>Emissions (Nominal)<sup>3</sup></b><br>NOx mg/nm <sup>3</sup><br>CO mg/nm <sup>3</sup><br>HC mg/nm <sup>3</sup><br>PM mg/nm <sup>3</sup>                                                                                            | 3438.4 mg/nm <sup>3</sup><br>170.2 mg/nm <sup>3</sup><br>5.3 mg/nm <sup>3</sup><br>7.9 mg/nm <sup>3</sup> |                                                                 |

<sup>1</sup> For ambient and altitude capabilities consult your Cat 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. Some packages may have oversized generators with a different temperature rise and motor starting characteristics.

<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, IEC60034-1, 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.

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

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## DIMENSIONS

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| Package Dimensions |                                         |
|--------------------|-----------------------------------------|
| Length             | Information not available at this time. |
| Width              |                                         |
| Height             |                                         |

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #3619111).

Performance No.: DM8494

Feature Code: C15DF3F

Gen. Arr. Number: 3921379

Source: Brasil

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