



## PRIME

**400 e kW 500 kVA  
50 Hz 1500 rpm 415 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

### COMPLETE, READY-TO-RUN SYSTEM

- Fully configured generator set
- Fully operational upon delivery - just add fuel and power cables

### ENCLOSURES (optional)

- Sound attenuated

### 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
- Factory-designed systems built at Caterpillar ISO 9001:2000 certified facilities

### WORLDWIDE PRODUCT SUPPORT

- Caterpillar® dealers provide extensive post sale support including maintenance and repair agreements
- Caterpillar dealers fill 99.7% of parts orders within 24 hours
- Caterpillar dealers have over 1,844 dealer branch stores operating in 166 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 C18 ATAAC 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
- Electronic controlled governor

### CAT® GENERATOR

- Matched to the performance and output characteristics of Caterpillar engines
- 2/3 pitch minimizes harmonic distortion and facilitates parallel operation
- Load adjustment module provides engine relief upon load impact and improves load acceptance and recovery time
- UL 1446 Recognized Class H Insulation

### CAT CONTROL PANELS

- Three levels of controls to meet individual customer needs:
  - EMCP 3.1 offers digital monitoring, metering, and protection
  - EMCP 3.2 offers EMCP II features plus full-featured power metering
  - EMCP 3.3 provides EMCP 3.2 features plus protective relaying
- Segregated low voltage (AC/DC) accessory box provides single point access to accessory connections

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## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	<ul style="list-style-type: none"> <li>• Single element canister type air cleaner</li> <li>• Service indicator</li> </ul>	<ul style="list-style-type: none"> <li>• Dual element air cleaner</li> <li>• Heavy-duty air cleaner with precleaner</li> <li>• Air inlet shutoff</li> </ul>
Cooling	<ul style="list-style-type: none"> <li>• Radiator with guard sized for 50° C</li> <li>• Coolant level sight gauge</li> <li>• Coolant drain line with valve</li> <li>• Fan and belt guards</li> <li>• Caterpillar® Extended Life Coolant</li> </ul>	<ul style="list-style-type: none"> <li>• Radiator duct flange</li> <li>• Low Coolant Level Sensor</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Stainless steel exhaust flex and ANSI weld flange</li> <li>• Turbo outlet elbow</li> </ul>	<ul style="list-style-type: none"> <li>• 15 dBA muffler</li> <li>• 25 dBA muffler</li> <li>• 35 dBA muffler</li> <li>• Engine mounted muffler</li> <li>• Mounting and through-wall installation kits</li> <li>• Manifold and turbocharger guards</li> </ul>
Exhaust	<ul style="list-style-type: none"> <li>• Stainless steel exhaust flex and ANSI weld flange</li> <li>• Turbo outlet elbow</li> </ul>	<ul style="list-style-type: none"> <li>• 20 dBA muffler</li> <li>• 30 dBA muffler</li> <li>• 15 dBA muffler</li> <li>• Engine mounted muffler with HD air cleaner</li> <li>• Engine mounted muffler with HD air cleaner</li> <li>• Elbow mounting and through-wall installation kits</li> <li>• Manifold and turbocharger guards</li> </ul>
Fuel	<ul style="list-style-type: none"> <li>• Primary and secondary fuel filters</li> <li>• Water separator</li> <li>• Fuel priming pump</li> <li>• Fuel pressure gauge</li> <li>• Flexible fuel lines</li> </ul>	<ul style="list-style-type: none"> <li>• Integral single wall fuel tank</li> <li>• 8 hour narrow tank base</li> <li>• 16 hour wide tank base</li> </ul>
Generator	<ul style="list-style-type: none"> <li>• Self excited or AREP excitation</li> <li>• Class H insulation</li> <li>• Class H Temperature Rise (50 Hz 163° C standby/127° C prime)</li> <li>• Random wound</li> <li>• R448 Voltage Regulator with Load Adjustment Module</li> <li>• Power center power terminal strip connections</li> <li>• Segregated low voltage wiring panel</li> <li>• IP23 Protection</li> </ul>	<ul style="list-style-type: none"> <li>• Permanent magnet conversion for self-excited and AREP generators</li> <li>• Oversize and premium generators</li> <li>• Three phase sensing</li> <li>• Quadrature droop kit</li> <li>• Space heaters</li> <li>• RFI filter</li> <li>• Circuit breaker, IEC compliant 3 or 4-pole (100% rated)</li> <li>• Floor standing circuit breakers with auxiliary contacts &amp; cabling kits</li> </ul>
Governor	<ul style="list-style-type: none"> <li>• Electronic isochronous</li> </ul>	<ul style="list-style-type: none"> <li>• Electronic load sharing</li> </ul>
Control Panels	<ul style="list-style-type: none"> <li>• EMCP 3.1</li> </ul>	<ul style="list-style-type: none"> <li>• EMCP 3.2</li> <li>• EMCP 3.3</li> <li>• Local alarm and remote annunciator modules</li> <li>• Protective devices</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>• Lube oil level indicator</li> </ul>	<ul style="list-style-type: none"> <li>• Oil temperature sensor</li> <li>• Manual sump pump</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>• Formed steel narrow base frame</li> <li>• Linear vibration isolators between base and engine generator</li> </ul>	<ul style="list-style-type: none"> <li>• Formed steel wide base frame</li> <li>• Oil field skid base</li> </ul>
Starting/Charging	<ul style="list-style-type: none"> <li>• 45 amp charging alternator</li> <li>• 24 volt starting motor</li> <li>• Batteries with rack and cables</li> <li>• Safety shutoff protection</li> </ul>	<ul style="list-style-type: none"> <li>• Jacket water heater</li> <li>• Integral 5 and 10 amp battery chargers</li> <li>• Oversize batteries</li> <li>• Ether starting aid</li> <li>• Battery disconnect switch</li> <li>• Battery removal</li> </ul>
Other	<ul style="list-style-type: none"> <li>• Paint - Caterpillar yellow except rails and radiators gloss black</li> <li>• SAE standard rotation</li> <li>• Flywheel and flywheel housing - SAE No. 0/18</li> </ul>	<ul style="list-style-type: none"> <li>• Enclosures - sound attenuated (yellow or white)</li> <li>• CE certification</li> </ul>

## SPECIFICATIONS

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### CAT GENERATOR

Frame size.....LC6114F  
Pitch.....0.6667  
Number of poles.....4  
Number of bearings.....1  
Number of leads.....12  
Overspeed capability.....125% of rated  
Wave form deviation (Line to Line).....002.00  
Voltage Regulator.3 phase sensing with adjustable 1:1 or  
2:1 Volts/Hz, UL508A Listed  
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 ENGINE

C18 ATAAC, 4-stroke-cycle watercooled diesel  
Bore - mm.....145.00 mm (5.71 in)  
Stroke - mm.....183.00 mm (7.2 in)  
Displacement - L.....18.13 L (1106.36 in<sup>3</sup>)  
Compression ratio.....14.5:1  
Aspiration.....Air-to-Air Aftercooled  
Fuel system.....Electronic unit injection  
Governor type.....Caterpillar ADEM control system

### CAT CONTROL PANEL

24 Volt DC Control  
NEMA 1, IP22 enclosure  
Electrically dead front  
Generator instruments meet ANSI C-39-1  
Terminal box mounted  
Single location customer connector point  
EC Compliant - segregated AC/DC connections and  
wiring  
Consult your Caterpillar dealer for available voltages.

**TECHNICAL DATA**

Open Generator Set - - 1500 rpm/50 Hz/415 Volts	DM7671	
<b>Low Fuel Consumption</b>		
<b>Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	500 kVA 400 kW	
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	102.9 L/hr 78.6 L/hr 56.4 L/hr	27.2 Gal/hr 20.8 Gal/hr 14.9 Gal/hr
<b>Cooling System</b> Ambient air temperature 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	57 ° C 0.12 kPa 660 m <sup>3</sup> /min 71.3 L 20.8 L 50.5 L	135 ° F 0.48 in. water 23308 cfm 18.8 gal 5.5 gal 13.3 gal
<b>Exhaust System</b> Combustion air inlet flow rate Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	30.5 m <sup>3</sup> /min 511.4 ° C 84.7 m <sup>3</sup> /min 203 mm 10.0 kPa	1077.1 cfm 952.5 ° F 2991.2 cfm 8 in 40.2 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	141 kW 376 kW 69 kW 19.7 kW	8019 Btu/min 21383 Btu/min 3924 Btu/min 1120.3 Btu/min
<b>Alternator</b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	0 skVA LC6114F 125 ° C	257 ° F
<b>Lube System</b> Sump refill with filter	38.0 L	10.0 gal

Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory. Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

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## RATING DEFINITIONS AND CONDITIONS

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**Meets or Exceeds International Specifications:** ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG 1-22, VDE0530, 89/392/EEC, 89/336/EEC

**Prime** - Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514 available on request. Prime power ambients shown indicate ambient at 100 percent 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 ISO3046/1, DIN6271, and BS5514 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. Consult your Caterpillar representative for details.

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## DIMENSIONS

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Package Dimensions		
Length	4237.4 mm	166.83 in
Width	1536.0 mm	60.47 in
Height	2165.8 mm	85.27 in
Weight	3669 kg	8,089 lb

Note: Do not use for installation design.  
See general dimension drawings for detail (Drawing #2551279).

Performance No.: DM7671

Feature Code:: C18DE00

Source:: European Sourced

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The International System of Units (SI) is used in this publication.