



Image shown may not reflect actual package.

## STANDBY 484 kW 605 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

#### 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® C18 ATAAC DIESEL ENGINE

- Utilizes ACERT™ Technology
- 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 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	<ul style="list-style-type: none"> <li>• Light Duty Air Filter</li> <li>• Service indicator</li> </ul>	<input type="checkbox"/> Single element air filter <input type="checkbox"/> Dual element air filter <input type="checkbox"/> Heavy-duty dual element air filter with precleaner <input type="checkbox"/> Air inlet shut-off
Cooling	<ul style="list-style-type: none"> <li>• Radiator package mounted</li> <li>• Coolant level sight gauge</li> <li>• Coolant drain line with valve</li> <li>• Fan and belt guards</li> <li>• Cat® Extended Life Coolant*</li> </ul>	<input type="checkbox"/> Radiator duct flange <input type="checkbox"/> Low coolant level sensor
Exhaust	<ul style="list-style-type: none"> <li>• Dry exhaust manifold</li> <li>• Stainless steel exhaust flex fittings with split-cuff</li> <li>• Exhaust flange outlets</li> </ul>	<input type="checkbox"/> Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Critical Mufflers <input type="checkbox"/> Manifold and turbocharger guards <input type="checkbox"/> Elbows and through-wall kits
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>• Flexible fuel lines</li> <li>• Fuel cooler*</li> <li>*Not included with packages without radiators</li> </ul>	<input type="checkbox"/> Integral single wall fuel tank base <input type="checkbox"/> Integral dual wall UL fuel tankbase <input type="checkbox"/> Sub-base dual wall UL listed fuel tank base <input type="checkbox"/> Manual transfer pump <input type="checkbox"/> Fuel level switch
Generator	<ul style="list-style-type: none"> <li>• Class H insulation</li> <li>• Class H temperature rise</li> <li>• VR6 voltage regulator with 3-phase sensing with load adjustment</li> <li>• IP23 Protection</li> </ul>	<input type="checkbox"/> Oversize generators <input type="checkbox"/> Internal excited (IE) <input type="checkbox"/> Permanent magnet excitation(PMG) <input type="checkbox"/> Cat digital voltage regulator (CDVR) with KVAR/PF control <input type="checkbox"/> Anti-condensation space heaters <input type="checkbox"/> Coastal Insulation Protection (CIP) <input type="checkbox"/> Reactive droop
Power Termination	<ul style="list-style-type: none"> <li>• Power Center houses EMCP controller and power/control terminations (rear mounted)</li> <li>• Circuit breaker, UL listed, 3 pole (80% &amp; 100% Rated)</li> <li>• Circuit breaker, IEC compliant, 3-4 pole (100% Rated)</li> <li>• Segregated low voltage wiring termination panel</li> <li>• IP22 protection</li> <li>• Bottom cable entry</li> </ul>	<input type="checkbox"/> Power Center mounting option (right side) <input type="checkbox"/> Multiple circuit breaker options <input type="checkbox"/> C.B. Shunt trips <input type="checkbox"/> C.B. Auxiliary contacts
Governor	<ul style="list-style-type: none"> <li>• ADEM™ A4</li> </ul>	<input type="checkbox"/> Load Share Module
Control Panels	<ul style="list-style-type: none"> <li>• EMCP 4.1 (mounted in Power Center)</li> <li>• Speed adjustment</li> <li>• Voltage adjustment</li> <li>• Emergency stop pushbutton</li> </ul>	<input type="checkbox"/> EMCP 4.2 <input type="checkbox"/> Right-hand mounted Power Center <input type="checkbox"/> Local annunciator module (NFPA 99/110) <input type="checkbox"/> Remote annunciator module (NFPA 99/110) <input type="checkbox"/> Digital I/O module
Lube	<ul style="list-style-type: none"> <li>• Lubricating oil</li> <li>• Oil drain line with valves</li> <li>• Oil filter and dipstick</li> <li>• Fumes disposal</li> <li>• Lube oil level indicator</li> <li>• Oil cooler</li> </ul>	<input type="checkbox"/> Oil temperature sensor <input type="checkbox"/> Manual sump pump
Mounting	<ul style="list-style-type: none"> <li>• Formed steel narrow base frame</li> <li>• Linear vibration isolation-seismic zone 4</li> </ul>	<input type="checkbox"/> Oil skid base <input type="checkbox"/> Formed steel wide base frame
Starting/Charging	<ul style="list-style-type: none"> <li>• 24 volt starting motor</li> <li>• 24 volt, 45 amp charging alternator</li> </ul>	<input type="checkbox"/> Jacket water heater with shut-off valves <input type="checkbox"/> Engine block heater <input type="checkbox"/> Ether starting aid <input type="checkbox"/> Battery disconnect switch <input type="checkbox"/> Battery chargers (5 or 10 amp) <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Batteries with rack and cables

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## SPECIFICATIONS

### CAT GENERATOR

Frame size.....LC7024F  
Excitation..... Internal 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

C18 ATAAC, I-6, 4-Stroke Water-cooled Diesel  
Bore..... 145.00 mm (5.71 in)  
Stroke..... 183.00 mm (7.2 in)  
Displacement.....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 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)
- ekW, 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	DM9820	
<b>Low Fuel Consumption</b>		
<b>Generator Set Package Performance</b>		
Genset Power rating @ 0.8 pf	605 kVA	
Genset Power rating with fan	484 ekW	
<b>Fuel Consumption</b>		
100% load with fan	122.7 L/hr	32.4 Gal/hr
75% load with fan	92.0 L/hr	24.3 Gal/hr
50% load with fan	64.0 L/hr	16.9 Gal/hr
<b>Cooling System<sup>1</sup></b>		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	373 m <sup>3</sup> /min	13172 cfm
Engine Coolant capacity with radiator/exp. tank	54.8 L	14.5 gal
Engine coolant capacity	20.8 L	5.5 gal
Radiator coolant capacity	34.0 L	9.0 gal
<b>Inlet Air</b>		
Combustion air inlet flow rate	31.6 m <sup>3</sup> /min	1115.9 cfm
<b>Exhaust System</b>		
Exhaust stack gas temperature	553.8 ° C	1028.8 ° F
Exhaust gas flow rate	92.1 m <sup>3</sup> /min	3252.5 cfm
Exhaust flange size (internal diameter)	203 mm	8 in
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water
<b>Heat Rejection</b>		
Heat rejection to coolant (total)	157 kW	8929 Btu/min
Heat rejection to exhaust (total)	449 kW	25535 Btu/min
Heat rejection to aftercooler	76 kW	4322 Btu/min
Heat rejection to atmosphere from engine	84 kW	4777 Btu/min
Heat rejection to atmosphere from generator	34.2 kW	1944.9 Btu/min
<b>Alternator<sup>2</sup></b>		
Motor starting capability @ 30% voltage dip	1376 skVA	
Frame	LC7024F	
Temperature Rise	130 ° C	234 ° F
<b>Lube System</b>		
Sump refill with filter	38.0 L	10.0 gal
<b>Emissions (Nominal)<sup>3</sup></b>		
NOx mg/nm <sup>3</sup>	3762.8 mg/nm <sup>3</sup>	
CO mg/nm <sup>3</sup>	656.7 mg/nm <sup>3</sup>	
HC mg/nm <sup>3</sup>	3.2 mg/nm <sup>3</sup>	
PM mg/nm <sup>3</sup>	12.6 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

**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 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

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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.: DM9820

Feature Code: C18DF2R

Gen. Arr. Number: 3921383

Source: China

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21375794

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