DIESEL GENERATOR SET

CATERPILLAR®

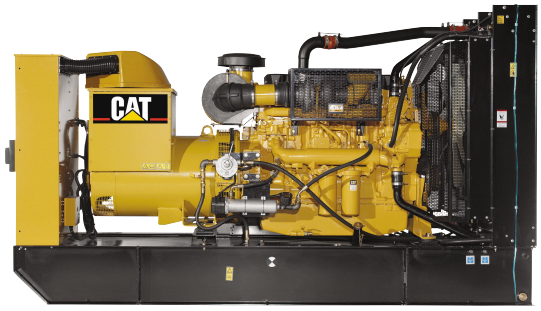

Image shown may not reflect actual package.

STANDBY
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 BSFC

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 fill 99.7% of parts orders within 24 hours
- Caterpillar dealers have over 1,798 dealer branch stores operating in 200 countries
- The Cat® S•O•S℠ 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
- Designed to match performance and output charactistics of Caterpillar diesel engines
- 2/3 Pitch
- UL 1446 Recognized Class H Insulation

CAT EMCP 3 CONTROL PANELS
- Controls designed to meet individual customer needs
- Options for power metering and protective relaying are available
- Options to meet UL/CSA/NFPA
- Rear mounted power center provides convenient location for control panel,and circuit breaker

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Light Duty Air filter	• Canister Style Air Cleaners • Air Cleaner - single stage • Dual element • Heavy duty
Cooling	• Radiator package mounted(50°C) • Coolant drain line with valve terminated at edge of base • Fan and belt guards • Coolant level sight gauge • Caterpillar Extended Life Coolant	• Radiator removal • Radiator duct flange & guard
Exhaust	• Dry exhaust manifold • Flanged faced outlets • Stainless Steel Flex with split-cuff connection	• Mufflers • Manifold & Turbocharger guards • Elbows
Fuel	• Primary fuel filter with integral water separator • Secondary fuel filters • Fuel priming pump • Engine fuel transfer pump • Flex fuel lines • Engine fuel transfer pump • Fuel cooler* • Base, formed steel with integral 8 hour fuel tank *Not included with packages without radiators	• Integral single wall and dual wall fuel tank bases • Manual transfer pump • Fuel level switch
Generator	• Self excited • Class H insulation • Random Wound • 2/3 pitch • R448 voltage regulator with load adjustment module • IP23 Protection	• Permanent magnet excitation • CDVR with KVAR/PF control • AREP Excitation • Oversize and premium generators • Bearing/Stator temperature detection (premium generator) • 3 phase sensing • Anti-condensation space heaters • Cable access box • Reactive droop
Power Termination	• Rear mounted circuit breaker,IEC 3 pole • Segregated low voltage wiring panel	• Circuit breakers, IEC compliant, 3 pole, 4 pole • Circuit breaker Shunt trip • Circuit breaker Auxillary contact • Floor standing IEC breakers
Governor	• ADEM™A4	• Load share module
Control Panels	• EMCP 3.1 (rear mounted) • Speed adjust • Emergency stop pushbutton • Voltage adjust	• EMCP 3.2 & EMCP 3.3 (can be RH mounted) • Local annuniciator modules (NFPA 99/110) • Remote annunicator modules (NFPA 99/110) • Discrete I/O module
Lube	• Lubricating oil and filter • Oil drain line with valves • Fumes disposal • Gear type lube oil pump	• Manual sump pump
Mounting	• Linear vibration isolatiors-seismic zone 4	• Formed steel wide base frame • Formed steel narrow base
Starting/Charging	• 24 volt starting motor • 45 amp charging alternator • Battery with rack and cables	• Jacket water heater with shut off valves • Block heater • Ether starting aids • Battery disconnect switch • Battery charger(5A,10A) • Oversize batteries
General	• Paint - Caterpillar yellow except rails and radiators gloss black • Flywheel and flywheel housing - SAE No.1	

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SPECIFICATIONS

CAT GENERATOR

Frame size..... LC6114D
Excitation.....Self Excited
Pitch.....0.6667
Number of poles.....4
Number of bearings..... Single Bearing
Insulation..... UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages
IP Rating.....Drip Proof IP22
Alignment.....Pilot Shaft
Overspeed capability..... 125% of rated
Wave form Deviation (Line to Line).....2%
Voltage regulator.....3 Phase sensing with selectible volts/Hz
Voltage regulation.....Less than +/- 1/2% (steady state)
Less than +/- ½% (w/ 3% speed change)
Telephone influence factor.....Less than 50
Harmonic Distortion.....Less than 5%

CAT DIESEL ENGINE

C15 ATTAC, 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^3)
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
• Vandel 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 & 3.3)
-Under and over voltage
-Under and over frequency
- Reverse power
- Overcurrent
• MODBUS isolated data link (RS-485 half-duplex EMCP 3.2 & 3.3)

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM8491	
Low BSFC		
Package Performance		
Genset Power rating with fan	400 ekW	
Genset Power rating @ 0.8 pf	500 kVA	
Fuel Consumption		
100% load with fan	106.6 L/hr	28.2 Gal/hr
75% load with fan	81.2 L/hr	21.5 Gal/hr
50% load with fan	57.2 L/hr	15.1 Gal/hr
Cooling System[1]		
Ambient air temperature	54 ° C	129 ° F
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	660 m³/min	23308 cfm
Engine Coolant capacity with radiator/exp. tank	38.1 L	10.1 US Gal
Engine coolant capacity	20.8 L	5.5 US Gal
Radiator coolant capacity	11.0 L	2.9 US Gal
Inlet Air		
Combustion air inlet flow rate	28.2 m³/min	995.9 cfm
Exhaust System		
Exhaust stack gas temperature	508.2 ° C	946.8 ° F
Exhaust gas flow rate	78.1 m³/min	2758.1 cfm
Exhaust flange size (internal diameter)	mm	
Exhaust system backpressure (maximum allowable)	6.8 kPa	27.3 in. water
Heat Rejection		
Heat rejection to coolant (total)	157 kW	8929 Btu/min
Heat rejection to exhaust (total)	355 kW	20189 Btu/min
Heat rejection to atmosphere from engine	97 kW	5516 Btu/min
Heat rejection to atmosphere from generator	27.8 kW	1581.0 Btu/min
Alternator[2]		
Motor starting capability @ 30% voltage dip	923 skVA	
Frame	LC6114D	
Temperature Rise	163 ° C	325 ° F
Lube System		
Sump refill with filter	L	
Emissions (Nominal)[3]		
NOx mg/nm3	3334.5 mg/nm³	
CO mg/nm3	181.9 mg/nm³	
HC mg/nm3	3.1 mg/nm³	
PM mg/nm3	6.5 mg/nm³	

[1] Ambient capability at 300m (984 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

[2] Generator temperature rise is based on a 40° C (104° F) ambient per NEMA MG1-32.

[3] Emissions data measurements 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.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: AS1359, AS2789, CSA, EGSA101P,IEC60034, ISO3046, ISO8528,NEMA MG 1-32, UL508, 72/23/EEC, 89/336/EEC, 98/37/EEC.

Standby - Output available with varying load for the duration of the interruption of the normal source power. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046, AS2789, and BS5514. Standby ambient temperatures shown indicate a coolant top tank temperature just below shutdown at 100 percent load.

Prime - Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046, AS2789, and BS5514. Prime ambient temperatures shown indicate a coolant top tank temperature just below shutdown at 100 percent load.

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. Consult your Caterpillar representative for details.

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DIMENSIONS

Package Dimensions		
Length	**3775.1 mm**	**148.63 in**
Width	**1110.0 mm**	**43.7 in**
Height	**2166.0 mm**	**85.28 in**
Weight	**4032 kg**	**8,889 lb**

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #2781056).

www.CAT-ElectricPower.com

Performance No.: DM8491

Feature Code: C15DE1T

Source: European Sourced