

Caterpillar : ژنراتور

Caterpillar : موتور دیزل

Standby		Prime		دیزل ژنراتور
KVA	KW	KVA	KW	
450	360	409	327	



موتور دیزل		
Manufacturer	Caterpillar	تولید کننده
Model	C15 ATAAC	مدل
Number of cylinders	6	تعداد سیلندر ها
Cylinder arrangement	Liner	آرایش سیلندر ها
Displacement , Liters	15.20	جا به جایی
Bore × Stroke , mm	137.20× 171.40	قطر سیلندر × کورس پیستون
Compression Ratio	16.1:1	نسبت تراکم
Aspiration	Air-to-Air Aftercooled	سیستم تنفس
Gross engine power, kWb	327	قدرت نافالص موتور
Fan Power, kWm	360	قدرت فن
Combustion air flow, m ³ /min	26.2	جریان هوای امتراق
Exhaust gas temp.(after turbo) , °C	529.0 °	دمای گاز خروجی از اگزوز
Exhaust gas flow (after turbo) , m ³ /min	71.3	جریان هوای خروجی از اگزوز

ژنراتور

Manufacturer	Caterpillar	تولید کننده
Standby power at rated voltage ,KVA	450	توان standby در ولتاژ نامی
Efficiency, %	88.5	راندمان
Power factor	0.8	ضریب قدرت
Phase	3	فاز
Frequency, Hz	50	فرکانس
Speed, Rpm	1500	سرعت
Voltage, V	380	ولتاژ
Excitation	Self Excitation	سیستم تمریک
Voltage Regulator	Single Phase Sensing	رگولاتور ولتاژ
Voltage Regulation, %	Less than +/- 1/2%	تنظیم ولتاژ
Over speed, Rpm	2250	مداکثر سرعت مجاز
Insulation class	H	کلاس عایق
Connection	Terminal strip connection	اتصال
Protection class	IP23	کلاس حفاظتی



Image shown may not reflect actual package.

STANDBY

360 kW 450 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•SSM 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 • Secondary fuel filters • Fuel priming pump	
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 • IP23 protection	<input type="checkbox"/> Oversize and premium generators <input type="checkbox"/> Permanent magnet excitation (PMG) <input type="checkbox"/> Internal excited (IE) <input type="checkbox"/> Anti-condensation space heaters
Power Termination	• Bus bar	<input type="checkbox"/> Circuit breakers, UL listed <input type="checkbox"/> Circuit breakers, IEC compliant
Control Panel	• EMCP 4 Genset Controller	<input type="checkbox"/> EMCP 4.2 <input type="checkbox"/> EMCP 4.3 <input type="checkbox"/> EMCP 4.4 <input type="checkbox"/> Local and remote annunciator modules <input type="checkbox"/> Load share module <input type="checkbox"/> Digital I/O module <input type="checkbox"/> Remote monitoring software
Mounting	• Rubber vibration isolators	
Starting/Charging	• 24 volt starting motor • Batteries	<input type="checkbox"/> Battery chargers <input type="checkbox"/> Oversize batteries <input type="checkbox"/> Jacket water heater <input type="checkbox"/> Heavy duty starting system <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: <input type="checkbox"/> Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 <input type="checkbox"/> UL 2200 package <input type="checkbox"/> EU Certificate of Conformance (CE) <input type="checkbox"/> CSA Certification <input type="checkbox"/> EEC Declaration of Conformity <input type="checkbox"/> Narrow, wide or skid base <input type="checkbox"/> Sound attenuated, weather protective or high ambient weather protective enclosures <input type="checkbox"/> Single or dual wall integral fuel tanks <input type="checkbox"/> Single or dual wall sub-base fuel tanks <input type="checkbox"/> Integral & sub-base UL listed dual wall fuel tanks <input type="checkbox"/> Automatic transfer switches (ATS)

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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..... 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..... Single 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 in³)
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)
- 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 (kVA) (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	DM8487	
Low BSFC		
Generator Set Package Performance		
Genset Power rating @ 0.8 pf	450 kVA	
Genset Power rating with fan	360 ekW	
Fuel Consumption		
100% load with fan	92.6 L/hr	24.5 Gal/hr
75% load with fan	70.1 L/hr	18.5 Gal/hr
50% load with fan	50.7 L/hr	13.4 Gal/hr
Cooling System¹		
Air flow restriction (system)	0.12 kPa	0.48 in. water
Air flow (max @ rated speed for radiator arrangement)	558 m ³ /min	19706 cfm
Engine Coolant capacity with radiator/exp. tank	47.8 L	12.6 gal
Engine coolant capacity	20.8 L	5.5 gal
Radiator coolant capacity	27.0 L	7.1 gal
Inlet Air		
Combustion air inlet flow rate	26.2 m ³ /min	925.2 cfm
Exhaust System		
Exhaust stack gas temperature	529.0 °C	984.2 °F
Exhaust gas flow rate	71.3 m ³ /min	2517.9 cfm
Exhaust flange size (internal diameter)	152.4 mm	6.0 in
Exhaust system backpressure (maximum allowable)	10.0 kPa	40.2 in. water
Heat Rejection		
Heat rejection to coolant (total)	137 kW	7791 Btu/min
Heat rejection to exhaust (total)	339 kW	19279 Btu/min
Heat rejection to atmosphere from engine	46 kW	2616 Btu/min
Heat rejection to atmosphere from generator	23.8 kW	1353.5 Btu/min
Alternator²		
Motor starting capability @ 30% voltage dip	923 skVA	
Frame	LC6114D	
Temperature Rise	130 °C	234 °F
Emissions (Nominal)³		
NOx mg/nm ³	3353.8 mg/nm ³	
CO mg/nm ³	157.3 mg/nm ³	
HC mg/nm ³	6.8 mg/nm ³	
PM mg/nm ³	9 mg/nm ³	

¹ For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

² 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.

³ 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

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.

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

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DIMENSIONS

Package Dimensions		
Length	3830.0 mm	150.79 in
Width	1130.6 mm	44.51 in
Height	2215.0 mm	87.2 in

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #3930333).

Performance No.: DM8487

Feature Code: C15DF1Y

Gen. Arr. Number: 3921378

Source: European Sourced

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