DIESEL GENERATOR SET





Image shown may not reflect actual package

Standby 500 ekW 625 kVA 60 Hz 1800 rpm 480 Volts

Caterpillar is leading the power generation Market place with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FUEL/EMISSIONS STRATEGY

EPA Tier 4 Interim

DESIGN CRITERIA

 The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.

UL 2200

 UL 2200 packages available. Certain restrictions may apply. Consult with your Cat[®] dealer.

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 Caterpillar S•O•SSM program effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by products.

CAT® C15 ATAAC DIESEL ENGINE

- 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

CAT GENERATOR

- Matched to the performance and output characteristics of Cat engines
- Single point access to accessory connections
- 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

60 Hz 1800 rpm 480 Volts



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Standard duty air filter	[] Air cleaner- Single stage canister style [] Heavy duty air filter- Single stage canister w/pre-cleaner
Cooling	 Radiator package mounted Coolant drain line with valve. Drain hose terminated at edge Fan and belt guards Coolant level sight gauge Cat Extended Life Coolant 	[] Radiator duct flange (open set only) [] Radiator guard (open set only)
Exhaust	 Dry exhaust manifold Male full V-band style flanged outlet Stainless steel flex with female full V-band flange connections 	[] Mufflers [] Male full V-band weld flange with V-band clamp
Fuel	 Primary fuel filter with integral water separator Secondary fuel filters-spin on Fuel priming pump Flex fuel lines Fuel cooler 	[] 12 & 24 hour UL listed dual wall sub-base fuel tanks with low fuel level switch
Generator	 Brushless Exciter Class H insulation IP 23 Protection VR6 voltage regulator with 3 phase sensing 	 [] Cat digital voltage regulator (Cat DVR) with reactive droop control [] Oversize harsh environment generators [] Permanent magnet excitation [] Anti-condensation space heaters
Power Termination	 Power termination strips mounted inside power center Segregated low voltage wiring panel Bottom entry 	[] Circuit breakers, UL/EC listed, 3 pole [] Circuit breaker shunt trip [] Circuit breaker auxiliary contact
Governor	ADEM™ A4	[] Load share module
Control Panel	EMCP 4.2 (rear mounted)Speed adjustEmergency Stop PushbuttonVoltage adjust	[] EMCP 4.4 [] Local annunciator modules (NFPA 99/110) [] Remote annunciator modules (NFPA 99/110) [] Discrete I/O module
Lube	 Lubricating oil and filter Oil drain line with valves Open crankcase ventilation (OCV) filter Gear type lube oil pump 	
Mounting	Rails - engine / generator / radiator mountingRubber vibration isolator	
Starting / Charging	 24 volt starting motor Batteries with rack and cables (dry) 45 amp charging alternator Battery disconnect switch 	[] Jacket water heater [] 10 Amp UL recognized battery charger
General	Paint – Cat yellow except rails and radiators gloss black	[] UL 2200 listed [] CSA Certification

*Not included with packages without radiators

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SPECIFICATIONS

CAT GENERATOR

Frame	6124F
Excitation	IE
Pitch	0.6667
Number of poles	4
Number of leads	12
Number of bearings	Single
Insulation	
IP rating	Drip proof IP23
Over speed capability - % of rated.	125%
Wave form deviation	
Voltage regulator 3 phase	e sensing with load
adjusta	ble module
Voltage regulationLess than ±1/2	2% (steady state)
Less than ±1/2% (3	% speed change)
Telephone Influence Factor	Less than 50
Harmonic Distortion	Less than 5%

CAT DIESEL ENGINE

C15 ATAAC, L-6, 4 stroke, water-cooled diesel

Bore137.20 mm (5.4 i	
Stroke	n)
Displacement15.20 L (927.56 ir	
Compression ratio16:1	
AspirationATAA	١С
Fuel systemMEI	
Governor Type ADEM™ A	4

CAT EMCP 4 CONTROL PANELS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed & Voltage Adjust
- Engine Cycle Crank
- Emergency stop pushbutton

EMCP 4.2 controller features:

- 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)
- Power Factor (per phase & average)
- kW (per phase, average & percent)
- kVA (per phase, average & percent)
- kVAr (per phase, average & percent)
- kW-hr & kVAr-hr (total)

Warning/shutdown with common LED indication of shutdowns for:

- 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)
- Reverse Reactive Power (kVAr) (32RV)
- Overcurrent (50/51)

Communications

- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- 6 programmable digital inputs
- 4 programmable relay outputs (Form A)
- 2 programmable relay outputs (Form C)
- 2 programmable digital outputs

Compatible with the following optional modules:

- Digital I/O module
- Local Annunciator
- Remote annunciator
- RTD module
- Thermocouple module

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TECHNICAL DATA

Open Generator Set - 1800 rpm/60 Hz/480 Volts	STANDBY EM0177	
Genset Package Performance		
Power rating @ 0.8 pf	62	25 kVA
Power rating w/fan	500 ekW	
Fuel Consumption ¹		
100% load with fan	136.6 L/hr	35.9 Gal/hr
75% load with fan	108.0 L/hr	28.6 Gal/hr
50% load with fan	78.0 L/hr	20.5 Gal/hr
Cooling System ²		
Ambient air temperature	51°C	123 °F
Air flow restriction (system)	0.12 kPa	0.5 in water
Air flow (max @rated speed)	819.6 m ³ /min	28958 cfm
Engine coolant Capacity with radiator arrangement)	68 L	18.0 US Gal
Engine coolant capacity	27 L	7.1 US Gal
Radiator coolant capacity	41 L	10.9 US Gal
Inlet Air		
Combustion air inlet flow rate	35.2 m ³ /min	1243 cfm
Exhaust System		
Exhaust stack gas temperature	683.8 °C	1263 °F
Exhaust gas flow rate	90.2 m ³ /min	3185 cfm
Exhaust flange size (internal diameter)	139 mm	5.5 in
Exhaust system backpressure (minimum allowable) 3	1 kPa	4 in. water
Exhaust system backpressure (maximum allowable) 3	10 kPa	40 in. water
Heat Rejection		
Heat rejection to coolant (total)	253 kW	14375 Btu/min
Heat rejection to exhaust (total)	430 kW	24457 Btu/min
Heat rejection to atmosphere from engine	95.6 kW	5436 Btu/min
Heat rejection to atmosphere from generator	29.1 kW	1655 Btu/min
Alternator ⁴		
Motor starting capability @ 30% voltage dip	1712 skVA	
Frame	LC6124F	
Temperature Rise	130°C	234°F
Lube System ⁵		
Lube oil refill with filter change for standard sump	60 L	15.9 US Gal
Emissions (Nominal) ⁶		
NO _x	3.6 g/kW-hr	2.7 g/hp-hr
CO	0.52 g/kW-hr	.39 g/hp-hr
HC	0.04 g/kW-hr	0.03 g/hp-hr
PM	0.04 g/kW-hr	0.03 g/hp-hr

¹ EPA Tier 4 Interim diesel engines required the use of Ultra Low Sulfur Diesel (ULSD) fuel in order to protect emissions control systems, help comply with emissions standards, and meet published maintenance intervals. ULSD fuel will have ≤ 15 ppm (0.0015%) sulfur using the ASTM D5453, ASTM 2622, or SIN 51400 test methods.

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² For ambient and altitude capabilities consult your Cat dealer. Air flow restriction (system) is added to existing restriction from factory.

³ Backpressure allowance is total backpressure available for the customer.

⁴ Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32.

Some packages may have oversized generators with a different temperature rise and motor starting characteristics.

⁵ Requires the use of CJ4 oil in order to meet published maintenance intervals.

⁶ 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, NO_x. 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. 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.

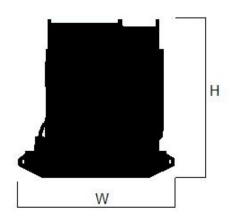
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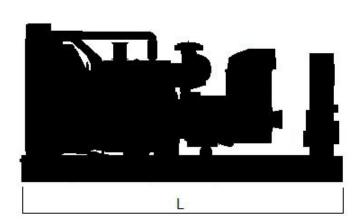
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DIMENSIONS

Package Dimensions					
Length	4273 mm	169 in			
Width	2058 mm	81 in			
Height	2092 mm	83 in			
Weight	3759 kg	8288 lb			





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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.

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Gen. Arr. Number: 235-1212

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Performance No.: EM0177

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