C13 Generator Set

Electric Power

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

Specifications

Generator Set Specifications	
Minimum Rating	320 ekW (350 kVA)
Maximum Rating	400 ekW (450 kVA)
Voltage	380 to 415 Volts
Frequency	50 or 60 Hz
Speed	1500 or 1800 RPM

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption

Engine Specifications		
Engine Model	C13 ATAAC, I-6, 4-Stroke Water-Cooled Diesel	
Bore	130 mm	5.12 in
Displacement	12.5 L	762.8 in^3
Stroke	157 mm	6.18 in
Compression Ratio	16.3:1	
Aspiration	Air to Air Aftercooled	
Governor Type	Adem™A4	
Fuel System	MEUI	

Benefits And Features

Cat 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

Generator

- Matched to the performance and output characteristics of Cat engines
- Industry leading mechanical and electrical design
- Industry leading motor starting capabilities
- High Efficiency

Cat EMCP Control Panel

The EMCP controller features the reliability and durability you have come to expect from your Cat equipment. EMCP4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP4 systems can be further customized to meet your needs through programming and expansion modules.

Design Criteria

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

Single-Source Supplier

Fully prototype tested with certified torsional vibration analysis available

World Wide 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® SOSSM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products.

Standard Equipment

Packaged Generator Set <!-- I am trying out a new format to facilitate the MSS sheet/ fmh C13 -->

- Disposable Air filter
- Service indicator
- Radiator package mounted
- Coolant level sight gauge
- Low coolant level sensor
- Coolant drain line with valve
- Fan and belt guards
- Cat Extended Life Coolant
- Dry exhaust manifold
- Stainless steel flex fittings
- Exhaust flange outlet
- Integral narrow single wall fuel tank base
- Primary fuel filter with integral water separator
- Secondary fuel filters
- Fuel priming pump
- Engine fuel transfer pump
- Fuel cooler integral with cooling system
- Flexible fuel lines
- Class H insulation
- Self excited (SE)
- Class H temperature rise
- IP23 protection
- R450 voltage regulator with single phase sensing and load adjustment module
- Power Center houses EMCP controller and power/control terminations (rear mounted)
- Circuit breaker, IEC compliant, 3-4 pole (100% Rated)
- Segregated low voltage wiring termination panel
- Bottom cable entry
- EMCP 4.1 (Rear-mounted in Power Center)
- Integral Narrow 8hr tank base
- Linear vibration isolation
- 24 volt starting motor
- 24 volt, 45 amp charging alternator
- Batteries with rack and cables
- Paint - Caterpillar Yellow except rails and radiators gloss black (Powder Coated)
- Flywheel housing - SAE No.1/2

Optional Equipment

Packaged Generator Set Options <!-- C13 -->

- Canister type Air Filter:
- Single element
- Dual element
- Radiator duct flange
- Stone Guard
- Low coolant temperature alarm
- Industrial, Residential, Critical Mufflers
- Manifold and turbocharger guards
- Elbows and flange kits
- Fuel level switch
- Manual fuel transfer pump
- Oversize generators
- Permanent magnet excitation (PMG)
- Internal excited (IE)
- Cat digital voltage regulator (Cat DVR) with kVAR/PF
- Anti-condensation space heaters
- Coastal Insulation Protection (CIP)
- Reactive droop
- Three phase sensing
- C.B. Shunt trips
- C.B. Auxiliary contacts
- EMCP 4.2
- Oil temperature sensor
- Manual sump pump
- Narrow skid base
- Integral Dual Wall 8hr tank base (Available only with enclosed units)
- Jacket water heater
- Battery disconnect switch
- Battery charger - 5 amp
- EU Certificate of Conformance
- Sound attenuated protective enclosure with integral lifting frame
- High Ambient enclosure with integral lifting frame

C13 ACERT
320 ekW/ 400 kVA/ 50 Hz/ 1500 rpm/ 400 V/ 0.8 Power Factor

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Image shown may not reflect actual configuration

C13 ACERT
320 ekW/ 400 kVA
50 Hz/ 1500 rpm/ 400 V

	Metric	English
Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	320 ekW	
Genset Power Rating	400 kVA	
Aftercooler (Separate Circuit)	N/A	N/A
Fuel Consumption		
100% Load with Fan	83.5 L/hr	22.0 gal/hr
75% Load with Fan	61.9 L/hr	16.4 gal/hr
50% Load with Fan	43.7 L/hr	11.5 gal/hr
25% Load with Fan	26.1 L/hr	6.9 gal/hr
Cooling System[1]		
Engine Coolant Capacity	14.2 L	3.8 gal
Inlet Air		
Combustion Air Inlet Flow Rate	22.4 m³/min	789.9 cfm
Max. Allowable Combustion Air Inlet Temp	49 ° C	120 ° F
Exhaust System		
Exhaust Stack Gas Temperature	529.2 ° C	984.5 ° F
Exhaust Gas Flow Rate	62.8 m³/min	2216.2 cfm
Exhaust System Backpressure (Maximum Allowable)	10.0 kPa	40.0 in. water

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Heat Rejection		
Heat Rejection to Jacket Water	128 kW	7271 Btu/min
Heat Rejection to Exhaust (Total)	290 kW	16484 Btu/min
Heat Rejection to Aftercooler	53 kW	3037 Btu/min
Heat Rejection to Atmosphere from Engine	53 kW	3041 Btu/min
Heat Rejection to Atmosphere from Generator	20 kW	1143 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	923 skVA
Current	577 amps
Frame Size	LC6114D
Excitation	SE
Temperature Rise	105 ° C

Emissions (Nominal)[3]		
NOx	2730.6 mg/Nm³	5.3 g/hp-hr
CO	750.5 mg/Nm³	1.5 g/hp-hr
HC	8.0 mg/Nm³	0.0 g/hp-hr
PM	N/A	N/A

DEFINITIONS AND CONDITIONS

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

2. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics. Generator temperature rise is based on a 40° C ambient per NEMA MG1-32.

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.

Rating Type: STANDBY

Fuel Strategy: LOW FUEL CONSUMPTION

Applicable Codes and Standards:
AS1359, CSA C22.2 No100-04, UL142,UL489, UL869, UL2200,
NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, ISO3046, ISO8528,
NEMA MG1-22,NEMA MG1-33, 72/23/EEC, 98/37/EC, 2004/108/EC

Note: Codes may not be available in all model configurations. Please consult your local Cat Dealer representative for availability.

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

Fuel Rates are based on fuel oil of 35º API [16º C (60º F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29º C (85º 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.

www.Cat-ElectricPower.com

Performance No.: EM0425-02

Feature Code: C13DE02

Generator Arrangement: 3969607

Date: 06/17/2015

Source Country: U.K.