C18 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	550 kVA
Maximum Rating	715 kVA
Voltage	208 to 600 Volts
Frequency	50 Hz
Speed	1500 or 1800 RPM

Generator Set Configurations	
Emissions/Fuel Strategy	Low Fuel Consumption, U.S. EPA Certified for Stationary Emergency Use Only (Tier 2 Nonroad Equivalent Emission Standards), China Nonroad III Emission Standards

Engine Specifications	
Engine Model	C18 ATAAC, I-6, 4-Stroke Water-Cooled Diesel
Bore	145 mm (5.71 in)
Displacement	18.13 L (1106.36 in3)
Stroke	183 mm (7.2 in)
Compression Ratio	14.5:1
Aspiration	Air to Air Aftercooled
Governor Type	Adem™A4
Fuel System	Electronic unit injection

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

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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.

Seismic Certification

Seismic Certification available.
Anchoring details are site specific, and are dependent on many factors such as generator set size, weight, and concrete strength.
IBC Certification requires that the anchoring system used is reviewed and approved by a Professional Engineer
Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007, CBC 2010
Pre-approved by OSHPD and carries an OSP-0321-10 for use in healthcare projects in California

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

UL 2200 / CSA - Optional

UL 2200 listed packages
CSA Certified
Certain restrictions may apply.
Consult with your Cat® Dealer.

Standard Equipment

Air Inlet System

- Light duty air cleaner
- Aftercooler core
- Turbocharger

Control System

- EMCP 4.2

Cooling

- Radiator and cooling fan with guard

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- Coolant drain line with valve
- Fan drive, battery charging alternator drive
- Caterpillar extended life coolant

Exhaust System

- Stainless steel exhaust flex gaskets, raincap and SAE exhaust flange for customer use; shipped loose

Fuel System

- Standard 8 hour open set fuel tank

Generator and Attachments

- Matched to the performance and output characteristics of Cat engines
- A frame generator - IP21 protection
- Integrated Voltage Regulator
- Integrated Voltage Regulator
- Power center, IP22
- Segregated low voltage (AC/DC) wiring panel
- Mandatory Option circuit breaker, IEC, 3 pole, mounted in power centre

Governing System

- Cat Electronic Governor (ADEM A4)

Lube System

- Lubricating oil
- Oil drain valves

Mounting System

- Captive linear vibration isolators between base and engine-generator. includes lifting provisions and termination points for coolant and lube oil drain lines

Starting/Charging

- 24 Volt battery with rack and cables

General

- Engine and alternator pre-paint, Caterpillar yellow

Optional Equipment

Air Inlet System

- Single element air cleaner
- Dual element air cleaner

Circuit Breakers

- 3 Pole (IEC-100% rated) circuit breakers - Package mounted
- 4 Pole (IEC-100% rated) circuit breakers - Package mounted
- 3 Pole (IEC-100% rated) circuit breakers - Motorised
- 4 Pole (IEC-100% rated) circuit breakers - Motorised
- Circuit breaker (IEC) auxiliary contacts

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- Shunt trip for IEC breaker
- Pad-lockable circuit breaker device
- Power terminal strip

Control System

- EMCP 4.4
- Volt free contact
- Local alarm horn
- Oil temperature displays
- Protective devices: Earth fault relay - earth leageage ground fault relay - Overload shutdown via breaker - Low fuel level alarm - Low fuel level shutdown - high fuel level alarm - Fuel level sensor
- Local alarm modules
- Remote annunciator modules

Cooling System

- Radiator duct flange
- Low coolant temperature alarm

Enclosures

- Sound attenuated enclosures

Exhaust System

- Engine mounted muffler
- 10, 25 and 35 end in / end out Mufflers
- 8 and 10 inch GP flanges
- 8 and 10 inch elbow kits
- Manifold and Turbocharger guard

Fuel System

- Integral - Duel wall fuel tank base
- Manual fuel transfer pump
- Fuel transfer system

Generator and Attachments

- Ingress protection
- Permanent magnet excitation
- Space heaters
- A frame oversize generator
- A frame CIP generator
- LC frame generator
- LC frame oversize generators
- LC frame CIP generator

Lube System

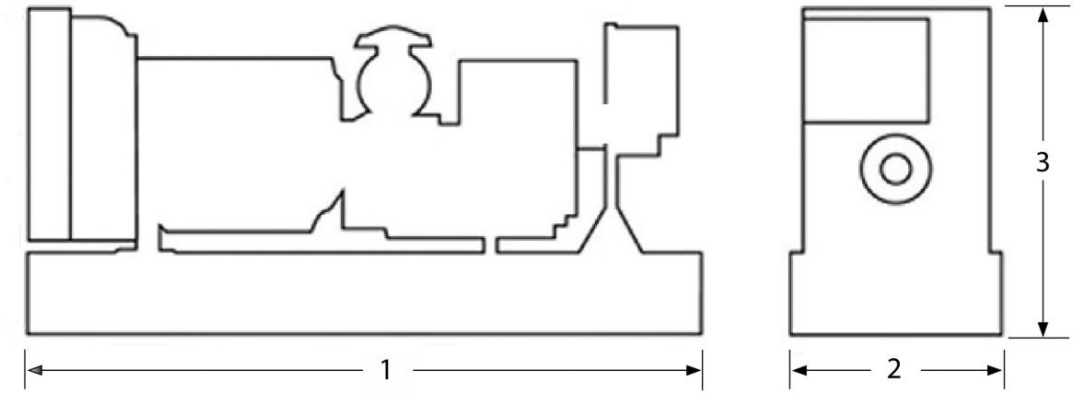
- Manual sump pump

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Starting and Charging

- 5 Amp battery charger
- Battery disconnect switch
- Jacket water heaters

Dimensional Art



Dimensions	Dimension 1	Dimension 2	Dimension 3
Genset dimesnions	4237 mm (166.8 in)	1536 mm (60.5 in)	2166 mm (85.3 in)

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ELECTRIC POWER - Technical Spec Sheet
STANDARD

C18

480 ekW/ 600 kVA/ 50 Hz/ 1500 rpm/ 400 V/ 0.8 Power Factor

Rating Type: PRIME

Fuel Strategy: LOW FUEL CONSUMPTION



Image shown may not reflect actual configuration

C18

480 ekW/ 600 kVA

50 Hz/ 1500 rpm/ 400 V

	Metric	English
Package Performance		
Genset Power Rating with Fan @ 0.8 Power Factor	480 ekW	
Genset Power Rating	600 kVA	
Aftercooler (Separate Circuit)	N/A	N/A
Fuel Consumption		
100% Load with Fan	122.7 L/hr	32.4 gal/hr
75% Load with Fan	91.9 L/hr	24.3 gal/hr
50% Load with Fan	63.9 L/hr	16.9 gal/hr
25% Load with Fan	37.3 L/hr	9.8 gal/hr
Cooling System[1]		
Engine Coolant Capacity	N/A	N/A
Inlet Air		
Combustion Air Inlet Flow Rate	32.3 m³/min	1142.0 cfm
Max. Allowable Combustion Air Inlet Temp	47 ° C	116 ° F
Exhaust System		
Exhaust Stack Gas Temperature	555.6 ° C	1032.0 ° F
Exhaust Gas Flow Rate	94.3 m³/min	3329.2 cfm
Exhaust System Backpressure (Maximum Allowable)	N/A	N/A

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Rating Type: PRIME

Fuel Strategy: LOW FUEL CONSUMPTION

Heat Rejection		
Heat Rejection to Jacket Water	157 kW	8947 Btu/min
Heat Rejection to Exhaust (Total)	458 kW	26037 Btu/min
Heat Rejection to Aftercooler	79 kW	4475 Btu/min
Heat Rejection to Atmosphere from Engine	79 kW	4468 Btu/min
Heat Rejection to Atmosphere from Generator	24 kW	1354 Btu/min

Alternator[2]	
Motor Starting Capability @ 30% Voltage Dip	2064 skVA
Current	866 amps
Frame Size	A3355L4
Excitation	SE
Temperature Rise	105 ° C

Emissions (Nominal)[3]		
NOx	3490.3 mg/Nm³	6.9 g/hp-hr
CO	506.5 mg/Nm³	1.0 g/hp-hr
HC	2.6 mg/Nm³	0.0 g/hp-hr
PM	4.7 mg/Nm³	0.0 g/hp-hr

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.

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Rating Type: PRIME

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, 2006/95/EC, 2006/42/EC, 2004/108/EC.

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

PRIME: Output available with varying load for an unlimited time. Average power output is 70% of the prime power rating. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 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.: DM9821-02

Feature Code: C18DEDH

Generator Arrangement: 5029789

Date: 01/25/2018

Source Country: U.K.

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