

C4.4 Generator Set

Electric Power



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

Image shown may not reflect actual configuration

Specifications

| Generator Set Specifications | |
|------------------------------|------------------|
| Rating | 80 ekW (100 kVA) |
| Voltage | 480 Volts |
| Frequency | 60 Hz |
| Speed | 1800 rpm |

| Generator Set Configurations | |
|------------------------------|--|
| Emissions/Fuel Strategy | U.S. EPA Certified for Stationary Emergency Application (Tier 3 Nonroad Equivalent Emission Standards) |

| Engine Specifications | | |
|-----------------------|---|-----------------------|
| Engine Model | C4.4 Vertical In-line 4, 4-cycle diesel | |
| Bore | 105.0 mm | 4.13 in |
| Displacement | 4.4 L | 268.5 in ³ |
| Stroke | 127.0 mm | 5.0 in |
| Compression Ratio | 16.7:1 | |
| Aspiration | Turbocharged Air-to-Air-Aftercooled | |
| Governor Type | Electronic | |
| Fuel System | Common Rail | |

| Package Dimensions* | | |
|---------------------|---------|---------|
| Length | 2362 mm | 93 in |
| Width | 1110 mm | 44 in |
| Height | 1304 mm | 51 in |
| Weight [†] | 1130 kg | 2491 lb |

*Note: For reference only – do not use for installation design. Please contact your local dealer for exact weight and dimensions.

[†]Weight includes: Oversize generator, skid base, circuit breaker, oil, and coolant.

Benefits & 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
- Electronic engine control

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. EMCP 4 is a scalable control platform designed to ensure reliable generator set operation, providing extensive information about power output and engine operation. EMCP 4 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.

Design Criteria

- The generator set accepts 100% rated load in one step per NFPA 110 and meets ISO 8528-5 transient response.
- Cooling system designed to operate in 50°C/122°F ambient temperatures with an air flow restriction of 0.5 in. water.

UL 2200/CSA – Optional

- UL 2200 Listed
 - CSA Certified
- Certain restrictions may apply. Consult with your Cat dealer.

Single-Source Supplier

Fully prototype tested with certified torsional vibration analysis.

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.

Standard Equipment

Air Inlet

- Single element Air filter

Cooling

- Radiator and cooling fan complete with protective guards
- Standard ambient temperatures up to 50°C (122°F)

Exhaust

- Exhaust flange outlet

Fuel

- Primary and secondary fuel filters
- Fuel priming pump
- Flexible fuel lines

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
- Integrated Voltage Regulation

Governor

- Electronic governor – ADEM™ A4

Control Panels

- EMCP 4.2 Series generator set controller

Mounting

- Rubber vibration isolators

Starting/Charging

- 12 volt starting motor
- Battery with rack and cables

General

- Paint – Caterpillar Yellow except rails and radiators gloss black

Optional Equipment

Exhaust

- Industrial, residential, critical mufflers

Generator

- Excitation: [] Permanent Magnet Excited (PM) [] Internally Excited (IE)
- Anti-condensation heater
- Oversize and premium generators

Starting/Charging

- Battery charger – UL 10 amp
- Battery disconnect switch
- Jacket water heater

General

- UL 2200
- CSA Certification
- Enclosures: sound attenuated, weather protective
- Sub-base dual wall UL Listed fuel tanks
- Automatic transfer switches (ATS)

C4.4

80 ekW/ 100 kVA/ 60 Hz/ 1800 rpm/ 480V/ 0.8 Power Factor

Rating Type: STANDBY

**Emissions: U.S. EPA Certified for Stationary Emergency Application
(Tier 3 Nonroad Equivalent Emission Standards)**



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D80-8

**80 ekW/ 100 kVA
60Hz/ 1800 rpm/ 480V**

Package Performance

| | |
|--|---------|
| Generator Set Power Rating with Fan @ 0.8 Power Factor | 80 ekW |
| Generator Set Power Rating | 100 kVA |

Fuel Consumption

| | | |
|--------------------|-----------|------------|
| 100% Load With Fan | 23.7 L/hr | 6.3 gal/hr |
| 75% Load With Fan | 19.0 L/hr | 5.0 gal/hr |
| 50% Load With Fan | 13.9 L/hr | 3.7 gal/hr |

Cooling System¹

| | | |
|--|----------|----------------|
| Engine Coolant Capacity | 7.0 L | 1.8 gal |
| Radiator Coolant Capacity | 10.0 L | 2.6 gal |
| Engine Coolant Capacity with Radiator/Exp Tank | 17.0 L | 4.5 gal |
| Air Flow Restriction (System) | 0.12 kPa | 0.48 in. water |

Inlet Air

| | | |
|--------------------------------|-------------------------|---------|
| Combustion Air Inlet Flow Rate | 7.8 m ³ /min | 275 cfm |
|--------------------------------|-------------------------|---------|

Exhaust System

| | | |
|---|--------------------------|----------------|
| Exhaust Stack Gas Temperature | 630°C | 1166°F |
| Exhaust Gas Flow Rate | 17.6 m ³ /min | 620 cfm |
| Exhaust System Backpressure (maximum allowable) | 15.0 kPa | 60.2 in. water |
| Exhaust Flange Size (internal diameter) | 64 mm | 2.5 in |

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| Heat Rejection | | |
|---|---------|--------------|
| Heat Rejection to Coolant (total) | 47.9 kW | 2724 Btu/min |
| Heat Rejection to Exhaust (total) | 77.7 kW | 4419 Btu/min |
| Heat Rejection to Atmosphere from Engine | 13.5 kW | 768 Btu/min |
| Heat Rejection to Atmosphere from Generator | 7.1 kW | 404 Btu/min |

| Alternator² | | |
|---|--------------|-------|
| Motor Starting Capability @ 30% Voltage Dip | 215 skVA | |
| Frame | LC3114D | |
| Temperature Rise | 105°C | 189°F |
| Excitation | Self Excited | |

| Lube System | | |
|-------------------------|-------|---------|
| Sump Refill with Filter | 8.4 L | 2.2 gal |

| Emissions (Nominal)³ | |
|--|--------------|
| NO _x + HC | 3.6 g/kW-hr |
| CO | 0.9 g/kW-hr |
| PM | 0.12 g/kW-hr |

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

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

³ The nominal emissions data shown is subject to instrumentation, measurement, facility and engine to engine variations. Emissions data is based on 100% Prime load. This information should not be used for permitting purposes and is subject to change without notice. Contact your Cat dealer for further details.

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DEFINITIONS AND CONDITIONS

Applicable Codes and Standards:

AS1359, CSA C22.2 No 100-04, UL142, UL489, UL601, UL869, UL2200, NFPA 37, NFPA 70, NFPA 99, NFPA 110, IBC, IEC60034-1, ISO3046, ISO8528, NEMA MG 1-22, NEMA MG 1-33, 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.

Fuel Rates are based on fuel oil to specification EPA 2D 89.330-96 with a density of 0.845 – 0.850 kg/L (7.052 – 7.094 lbs/U.S. gal.) @ 15°C (59°F) and fuel inlet temperature 40°C (104°F).

Additional ratings may be available for specific customer requirements, contact your Cat representative for details.

Performance No.: P4510A
Feature Code: NAC222P
Generator Arrangement: 4518416
Date: 03/24/2016
Source Country: U.S.

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The International System of Units (SI) is used in this publication.

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