

Cat® G3412 WITH FAST RESPONSE

Gas Generator Sets



Image shown may not reflect actual configuration

Bore – mm (in)	137 (5.4)
Stroke – mm (in)	152 (6.0)
Displacement – L (in ³)	27 (1648)
Compression Ratio	11.4:1
Aspiration	Turbocharged
Fuel System	Electronic Fuel Control Valve
Governor Type	ADEM™ A4

Standby 60 Hz ekW (kVA) w/Fan	Emissions Performance
500 (625)	Certified U.S. EPA Stationary Emergency Use Only
500 (625)	Non-Certified NO _x Selectable (1.7 - 2.0 g/bhp-hr)

Standard Features

Cat® Natural Gas Engine

- Factory certified to U.S. EPA 40 CFR Part 60 Subpart JJJJ for Stationary Emergency Use Only
- Emergency Non-Certified / Site-Performance-Tested version available; meeting a NO_x 1.7g/bhp-hr output
- Robust 12 cylinder high speed block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on a variety of gaseous fuel pressure ranges

Fuel Train System

- Ship loose option for open genset or factory installed option available with enclosure
- Standard pressure or low pressure options available (SP - 2.2 to 7 psi and LP - 0.9 to 5 psi)

Generator Set Package

- Accepts 100% block load in one step
- Facilitates compliance with NFPA 110, Type 10 starting and loading requirements (LV)
- Conforms to ISO 8528-5 G2 load acceptance criteria
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Generators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat engines

Cooling System

- Factory installed radiator to operate in ambient temperatures up to 43°C (110°F)
- Package tested to ensure proper cooling of complete generator set

EMCP 4 Control Panels

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

Warranty

- 24 months warranty for standby ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat® dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

Equipment

Engine

Air Cleaner (Single Element)

- Installed

Muffler

- Industrial grade (15 dB)
- Critical grade (25 dB)
- Spark arresting

Starting

- Standard batteries
- Standard electric starter(s)
- Jacket water heater

Generators

Output voltage

- 208V
- 220V
- 440V
- 480V
- 600V

Temperature Rise (over 40°C)

- 150°C
- 125°C
- 105°C
- 80°C

Winding type

- Random wound

Excitation

- Permanent magnet (PM)

Attachments

- Anti-condensation heater
- Stator and bearing temperature monitoring and protection

Radiator

- Factory Provided
- Dealer / Customer Provided

Power Termination

Type

- Bus bar
 - Circuit breaker
 - 250A 400A
 - 600A 800A
 - 1200A 1600A
 - 2000A 2500A
 - UL IEC
 - 3-pole
 - Manually operated
 - Electrically operated
- #### **Trip Unit**
- LSI

Enclosure

- Weather protective
- Sound attenuated

Attachments

- Cold weather bundle
- DC lighting package
- AC lighting package
- Motorized louvers

Fuel System Pressure

- Standard
- Low

Control System

Controller

- EMCP 4.3
- EMCP 4.4

Attachments

- Local annunciator module
- Remote annunciator module
- Load share module
- Remote monitoring software

Charging

- Battery charger – 10A

Vibration Isolators

- Rubber

Cat Connect

Connectivity

- Ethernet
- Cell

Extended Service Options

Terms

- 2 year
- 3 year
- 5 year
- 10 year

Coverage

- Silver
- Gold
- Platinum
- Platinum Plus

Ancillary Equipment

- Automatic transfer switch (ATS)
- Paralleling switchgear
- Paralleling controls

Certifications

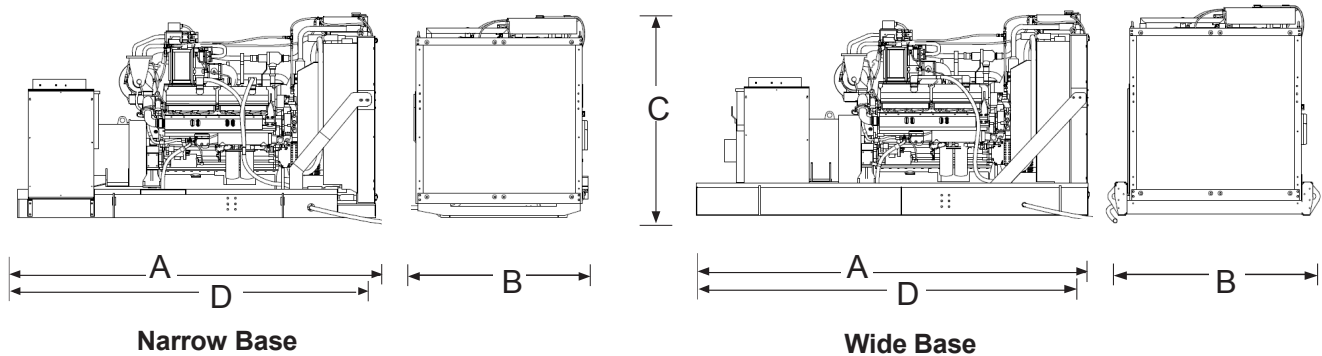
- UL 2200 Listed
- CSA Certified
- US EPA Emergency Use Only

Note: Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.

Package Performance

Performance	Standby	
Frequency	60 Hz	
Genset power rating @ 0.8 power factor – kW (kVA)	500 (625)	
Emissions - NO _x g/bhp-hr	1.7	
Performance number	EM2810 & EM4278	
Fuel Consumption		
100% load with fan – MJ/ekW-hr (Btu/ekW-hr)	11.17	(10595)
75% load with fan – MJ/ekW-hr (Btu/ekW-hr)	11.68	(11075)
50% load with fan – MJ/ekW-hr (Btu/ekW-hr)	12.93	(12263)
Cooling System (Optional Factory Radiator open Genset)		
Radiator air flow restriction – kPa (in. water)	0.12	(0.5)
Radiator air flow – m ³ /min (cfm) @ 0.5" H ₂ O	808	(28534)
Radiator ambient capability @ 500 m (1000 ft) – °C (°F)	44	(111)
Auxiliary circuit temperature (maximum inlet) – °C (°F)	62	(144)
Jacket water temperature (maximum outlet) – °C (°F)	99	(210)
Inlet Air		
Combustion air inlet flow rate – Nm ³ /bKW-hr (ft ³ /min)	4.30	(1592)
Altitude Capability		
At 25°C (77°F) ambient, above sea level – m (ft)	994	(3260)
Exhaust System		
Exhaust temperature – engine outlet – °C (°F)	454	(849)
Exhaust Gas Flow – Nm ³ /bKW-hr (ft ³ /min)	4.59	(4197)
Exhaust Gas Mass Flow – kg/bkW-hr (lb/hr)	5.77	(7331)
Heat Rejection		
Heat rejection to jacket water circuit (JW+OC) – kW (Btu/min)	335	(19082)
Heat rejection to jacket water – kW (Btu/min)	279	(15883)
Heat rejection to exhaust (LHV to 25°C/77°F) – kW (Btu/min)	470	(26750)
Heat rejection to auxiliary circuit – kW (Btu/min)	136	(7724)

Weights and Dimensions



	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dim "D" (w/o rad) mm (in)	Dry Weight kg (lb)
Narrow	3796 (149.5)	1854 (73)	2163 (85.2)	3778 (148.75)	6,796 (14,983)
Wide	4198 (165.28)	2189 (86.18)	2165.4 (85.25)	4180 (164.56)	7,165 (15,796)

Note: For Reference Only. Above dimensions are for the narrow base, an optional wide base is available. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.

Ratings Definitions Standby

Output available with varying load for the duration of an emergency outage. Average power output is 100% of the standby power rating. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

Applicable Codes and Standards

AS 1359, CSA C22.2 No. 100-04, UL 489, UL 869, UL 2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

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

Fuel Rates

1. For transient response, ambient, and altitude capabilities consult your local Cat dealer.
2. Fuel pressure range specified is to the engine fuel control valve. Additional fuel train components may be required and should be considered in pressure and flow calculations.
3. For a complete reference of definitions and conditions see the following datasheets
 - a. Open Genset
 - i. EPA Certified with Radiator - EM2810
 - ii. EPA Certified w/o Radiator - EM2811
 - iii. 1.7g/bhp-hr NOx with Radiator - EM4278
 - iv. 1.7g/bhp-hr NOx w/o Radiator - EM1096
 - b. Genset with 75 dBA Enclosure
 - i. EPA Certified with Radiator - EM1095
 - ii. 1.7g/bhp-hr NOx with Radiator - EM2814
 - c. Genset with 85 dBA Enclosure
 - i. EPA Certified with Radiator - EM1094
 - ii. 1.7g/bhp-hr NOx with Radiator - EM2813
 - d. Genset with 90 dBA Enclosure
 - i. EPA Certified with Radiator - EM2809
 - ii. 1.7g/bhp-hr NOx with Radiator - EM2812

www.cat.com/electricpower

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