

# Cat® G3412

## Gas Generator Set



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

Image shown may not reflect actual configuration

Standby 60 Hz ekW (kVA)	Emissions Performance
512 (640)	Certified U.S. EPA Stationary Emergency Use Only
512 (640)	Non-Certified NO <sub>x</sub> 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<sub>x</sub> 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 low pressure gaseous fuel supply

#### 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

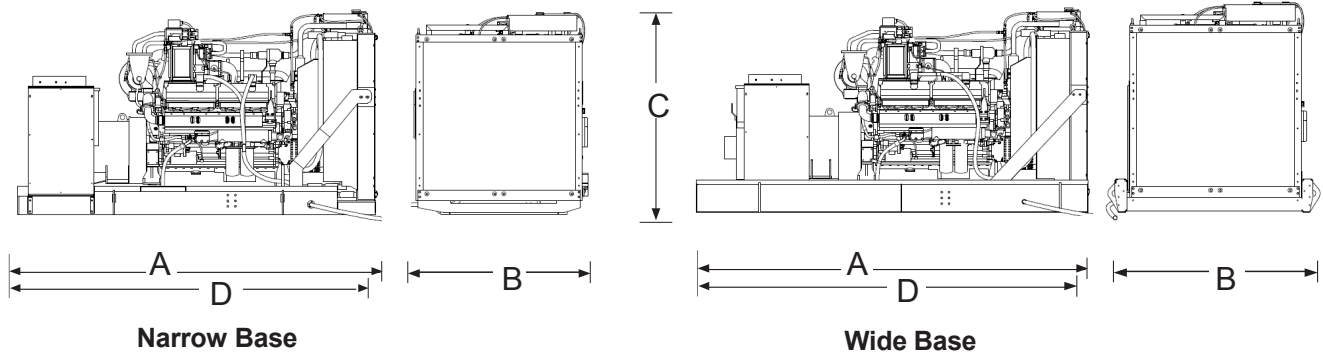
- UL 2200 Listed
- CSA Certified
- US EPA Emergency Use Only

**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**

<b>Performance</b>	<b>Standby</b>	
Frequency	60 Hz	
Genset power rating @ 0.8 power factor – kW (kVA)	512 (640)	
Emissions - NO <sub>x</sub> g/bhp-hr	1.7	
Performance number	EM2810 & EM4278	
<b>Fuel Consumption</b>		
100% load with fan – MJ/ekW-hr (Btu/ekW-hr)	10.91	(10346)
75% load with fan – MJ/ekW-hr (Btu/ekW-hr)	11.40	(10806)
50% load with fan – MJ/ekW-hr (Btu/ekW-hr)	12.50	(11853)
<b>Cooling System (Optional Factory Radiator open Genset)</b>		
Radiator air flow restriction – kPa (in. water)	0.12	(0.5)
Radiator air flow – m <sup>3</sup> /min (cfm) @ 0.5" H <sub>2</sub> 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)
<b>Inlet Air</b>		
Combustion air inlet flow rate – Nm <sup>3</sup> /bKW-hr (ft <sup>3</sup> /min)	4.59	(4197)
<b>Altitude Capability</b>		
At 25°C (77°F) ambient, above sea level – m (ft)	994	(3260)
<b>Exhaust System</b>		
Exhaust temperature – engine outlet – °C (°F)	454	(849)
Exhaust Gas Flow – Nm <sup>3</sup> /bKW-hr (ft <sup>3</sup> /min)	4.59	(4197)
Exhaust Gas Mass Flow – kg/bkW-hr (lb/hr)	5.77	(7330)
<b>Heat Rejection</b>		
Heat rejection to jacket water circuit (JW+OC) – kW (Btu/min)	335	(19081)
Heat rejection to jacket water – kW (Btu/min)	279	(15882)
Heat rejection to exhaust (LHV to 25°C/77°F) – kW (Btu/min)	470	(26747)
Heat rejection to auxiliary circuit – kW (Btu/min)	136	(7723)

## 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)	6,500 (14,330)
Wide	4198 (165.28)	2189 (86.18)	2165.4 (85.25)	4180 (164.56)	6,700 (14,770)

**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 85 dBA Enclosure
    - i. EPA Certified with Radiator - EM1094
    - ii. 1.7g/bhp-hr NOx with Radiator - EM2813
  - c. Genset with 90 dBA Enclosure
    - i. EPA Certified with Radiator - EM2809
    - ii. 1.7g/bhp-hr NOx with Radiator - EM2812

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