

Cat® 3412

Diesel Generator Sets



Image shown may not reflect actual configuration

Bore – mm (in)	137.2 (5.4)
Stroke – mm (in)	152.4 (6)
Displacement – L (in ³)	27.02 (1648.86)
Compression Ratio*	13.0:1
Compression Ratio**	14.1:1
Aspiration	TA
Fuel System	Pump and Lines
Governor Type	ADEM™ A5

Standby 60 Hz kW (kVA)	Prime 60 Hz kW (kVA)	Standby 60 Hz kW (kVA)	Prime 60 Hz kW (kVA)	Emissions Performance
**700 (875)	**635 (793)	*750 (937)	*680 (850)	Optimized for Low Fuel Consumption
*800 (1000)	*725 (906)	—	—	

Standard Features

Cat® Diesel Engine

- Designed and optimized for low fuel consumption
- Reliable performance proven in thousands of applications worldwide

Generator Set Package

- Accepts 100% block load in one step and meets NFPA 110 loading requirements
- Conforms to ISO 8528-5 G3 load acceptance requirements
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Alternators

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

Cooling System

- Cooling systems available to operate in ambient temperatures up to 49°C (120°F)
- Tested to ensure proper generator set cooling

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/1000-hour warranty for standby and mission critical ratings
- 12 months/unlimited hour warranty for prime and continuous 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

Optional Equipment

Engine

Air Cleaner

- ☐ Single element
- ☐ Dual element
- ☐ Heavy duty

Muffler

- ☐ Industrial grade (10 dB)
- ☐ Critical grade (35 dB)

Starting

- ☐ Standard batteries
- ☐ Oversized batteries
- ☐ Heavy duty electric starter(s)
- ☐ Dual electric starter(s)
- ☐ Jacket water heater

Alternator

Output voltage

- ☐ 220V ☐ 440V
- ☐ 240V ☐ 480V
- ☐ 380V

Temperature Rise (over 40°C ambient)

- ☐ 150°C
- ☐ 125°C
- ☐ 105°C
- ☐ 80°C

Winding type

- ☐ Random wound

Excitation

- ☐ Internal excitation (IE)
- ☐ Permanent magnet (PM)

Attachments

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

Power Termination

Type

- ☐ Bus bar
- ☐ Circuit breaker
- ☐ 1600A ☐ IEC
- ☐ 2500A ☐ 3-pole
- ☐ UL ☐ 4-pole
- ☐ Manually operated
- ☐ Electrically operated

Trip Unit

- ☐ LSI

Factory Enclosure

- ☐ Weather protective
- ☐ Sound attenuated

Fuel Tank

- ☐ 317 gal (1200 L)

Control System

Controller

- ☐ EMCP 4.2
- ☐ EMCP 4.3
- ☐ EMCP 4.4

Attachments

- ☐ Local annunciator module
- ☐ Remote annunciator module
- ☐ Expansion I/O module
- ☐ Remote monitoring software

Charging

- ☐ Battery charger – 5A

Vibration Isolators

- ☐ Spring

Cat Connect

Connectivity

- ☐ Ethernet
- ☐ Cellular
- ☐ Satellite

Extended Service Options

Terms

- ☐ 2 year (prime)
- ☐ 3 year
- ☐ 5 year
- ☐ 10 year

Coverage

- ☐ Silver
- ☐ Gold
- ☐ Platinum
- ☐ Platinum Plus

Ancillary Equipment

- ☐ Automatic transfer switch (ATS)
- ☐ Uninterruptible power supply (UPS)
- ☐ Paralleling switchgear
- ☐ Paralleling controls

Certifications

- ☐ EU Certification of Conformance (CE)
- ☐ EEC Declaration of Conformity

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

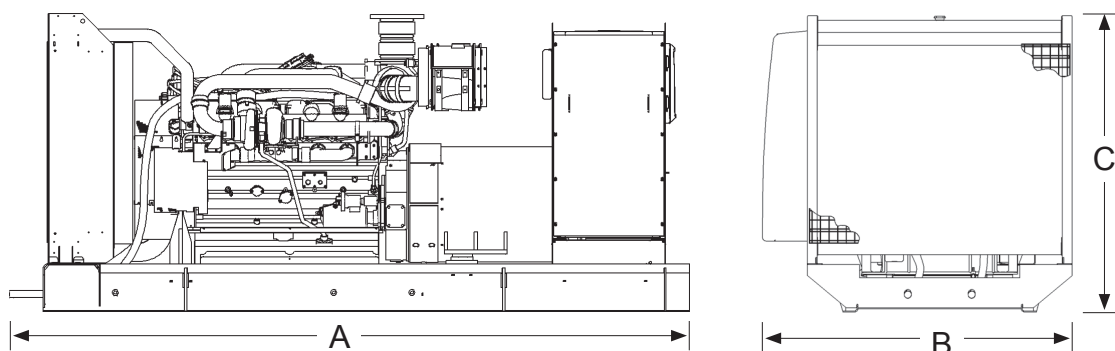
Package Performance

Performance	Standby		Prime		Standby		Prime	
Frequency	60 Hz		60 Hz		60 Hz		60 Hz	
Gen set power rating with fan	700 ekW		635 ekW		750 ekW		680 ekW	
Gen set power rating with fan @ 0.8 power factor	875 kVA		793 kVA		937 kVA		850 kVA	
Emissions	Low Fuel		Low Fuel		Low Fuel		Low Fuel	
Performance number	EM1156-01		EM1157-01		EM1162-01		EM1163-00	
Fuel Consumption								
100% load with fan – L/hr (gal/hr)	188.1	(42.0)	171.0	(45.2)	206.3	(54.5)	187.3	(49.5)
75% load with fan – L/hr (gal/hr)	144.5	(32.1)	133.0	(35.1)	156.0	(41.2)	142.7	(37.7)
50% load with fan – L/hr (gal/hr)	103.3	(22.5)	95.5	(25.2)	109.8	(29.0)	101.8	(26.9)
25% load with fan – L/hr (gal/hr)	62.9	(13.2)	59.0	(15.6)	66.2	(17.5)	62.0	(16.4)
Cooling System								
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)	0.12	(0.48)
Radiator air flow – m³/min (cfm)	923.0	(32595)	923.0	(32595)	923.0	(32595)	923.0	(32595)
Engine coolant capacity – L (gal)	58.6	(15.5)	58.6	(15.5)	58.6	(15.5)	58.6	(15.5)
Radiator coolant capacity – L (gal)	90.0	(23.8)	90.0	(23.8)	90.0	(23.8)	90.0	(23.8)
Total coolant capacity – L (gal)	148.8	(39.3)	148.8	(39.3)	148.8	(39.3)	148.8	(39.3)
Inlet Air								
Combustion air inlet flow rate – m³/min (cfm)	52.2	(1843.3)	48.5	(1712.6)	65.2	(2302.4)	59.3	(2093.9)
Exhaust System								
Exhaust stack gas temperature – °C (°F)	551.0	(1023.8)	542.5	(1008.5)	513.9	(957.0)	508.5	(947.3)
Exhaust gas flow rate – m³/min (cfm)	153.8	(5431.1)	141.1	(4982.5)	181.9	(6423.4)	164.3	(5801.5)
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)	6.7	(27.0)
Heat Rejection								
Heat rejection to jacket water – kW (Btu/min)	434	(24682)	395	(22464)	474	(26957)	431	(24510)
Heat rejection to exhaust (total) – kW (Btu/min)	700	(39810)	637	(36227)	794	(45157)	715	(40661)
Heat rejection to aftercooler – kW (Btu/min)	71	(4061)	58	(3304)	130	(7394)	106	(6028)
Heat rejection to atmosphere from engine – kW (Btu/min)	108	(6142)	94	(5334)	114	(6483)	104	(5914)
Heat rejection from alternator – kW (Btu/min)	31	(1746)	27	(1541)	28	(1592)	25	(1445)
Emissions (Nominal)								
NOx mg/Nm³ (g/hp-h)	3936.3	(8.18)	4206.0	(8.71)	2827.4	(5.96)	2848.9	(5.97)
CO mg/Nm³ (g/hp-h)	321.6	(0.67)	307.1	(0.64)	334.2	(0.71)	313.8	(0.66)
HC mg/Nm³ (g/hp-h)	29.7	(0.06)	30.1	(0.06)	56.5	(0.13)	50.3	(0.12)
PM mg/Nm³ (g/hp-h)	45.2	(0.09)	40.0	(0.08)	42.4	(0.11)	39.7	(0.10)
Emissions (Potential Site Variation)								
NOx mg/Nm³ (g/hp-h)	4762.9	(9.90)	5089.2	(10.54)	3421.1	(7.21)	3447.2	(7.22)
CO mg/Nm³ (g/hp-h)	601.4	(1.25)	574.3	(1.19)	625.0	(1.32)	586.8	(1.23)
HC mg/Nm³ (g/hp-h)	56.1	(0.12)	56.9	(0.12)	106.8	(0.25)	95.1	(0.22)
PM mg/Nm³ (g/hp-h)	88.2	(0.18)	78.0	(0.16)	82.7	(0.21)	77.4	(0.20)

Package Performance

Performance	Standby		Prime		Standby	Prime
Frequency	60 Hz		60 Hz		—	—
Gen set power rating with fan	800 ekW		725 ekW		—	—
Gen set power rating with fan @ 0.8 power factor	1000 kVA		906 kVA		—	—
Emissions	Low Fuel		Low Fuel		—	—
Performance number	EM1160-00		EM1161-01			—
Fuel Consumption						
100% load with fan – L/hr (gal/hr)	221.9	(58.6)	198.8	(52.5)	—	—
75% load with fan – L/hr (gal/hr)	165.6	(43.8)	150.6	(39.8)	—	—
50% load with fan – L/hr (gal/hr)	115.7	(30.6)	106.5	(28.1)	—	—
25% load with fan – L/hr (gal/hr)	69.4	(18.3)	64.1	(16.9)	—	—
Cooling System						
Radiator air flow restriction (system) – kPa (in. water)	0.12	(0.48)	0.12	(0.48)	—	—
Radiator air flow – m³/min (cfm)	923.0	(32595)	923.0	(32595)	—	—
Engine coolant capacity – L (gal)	58.6	(15.5)	58.6	(15.5)	—	—
Radiator coolant capacity – L (gal)	90.0	(23.8)	90.0	(23.8)	—	—
Total coolant capacity – L (gal)	148.8	(39.3)	148.8	(39.3)	—	—
Inlet Air						
Combustion air inlet flow rate – m³/min (cfm)	69.6	(2457.6)	63.0	(2224.5)	—	—
Exhaust System						
Exhaust stack gas temperature – °C (°F)	517.8	(964.0)	539.4	(1002.9)	—	—
Exhaust gas flow rate – m³/min (cfm)	195.1	(6889.2)	139.1	(4913.4)	—	—
Exhaust system backpressure (maximum allowable) – kPa (in. water)	6.7	(27.0)	6.7	(27.0)	—	—
Heat Rejection						
Heat rejection to jacket water – kW (Btu/min)	508	(28890)	457	(25988)	—	—
Heat rejection to exhaust (total) – kW (Btu/min)	855	(48624)	764	(43445)	—	—
Heat rejection to aftercooler – kW (Btu/min)	147	(8360)	122	(6937)	—	—
Heat rejection to atmosphere from engine – kW (Btu/min)	131	(7450)	108	(6142)	—	—
Heat rejection from alternator – kW (Btu/min)	31	(1746)	27	(1541)	—	—
Emissions (Nominal)						
NOx mg/Nm³ (g/hp-h)	2793.2	(5.95)	2837.2	(5.96)	—	—
CO mg/Nm³ (g/hp-h)	400.2	(0.85)	317.9	(0.67)	—	—
HC mg/Nm³ (g/hp-h)	59.2	(0.14)	54.4	(0.13)	—	—
PM mg/Nm³ (g/hp-h)	53.1	(0.14)	40.0	(0.10)	—	—
Emissions (Potential Site Variation)						
NOx mg/Nm³ (g/hp-h)	3379.8	(7.20)	3433.1	(7.21)	—	—
CO mg/Nm³ (g/hp-h)	748.4	(1.59)	594.5	(1.25)	—	—
HC mg/Nm³ (g/hp-h)	111.9	(0.26)	102.8	(0.24)	—	—
PM mg/Nm³ (g/hp-h)	103.5	(0.27)	78.0	(0.20)	—	—

Weights and Dimensions



Standby 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Standby 60 Hz ekW (kVA)	Prime 60 Hz ekW (kVA)	Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
700 (875)	635 (793)	—	—	4125 (162.4)	1989 (78.3)	1906 (75)	5761 (12,700)
750 (937)	680 (850)	800 (1000)	725 (906)	4125 (162.4)	1989 (78.3)	1906 (75)	6021 (13,275)

Note: For reference only. 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 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.

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.

Applicable Codes and Standards

AS1359, CSA C22.2 No100-04, UL142, UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC60034-1, 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.

Data Center Applications

Tier III/Tier IV compliant per Uptime Institute requirements. ANSI/TIA-942 compliant for Rated-1 through Rated-4 data centers.

Fuel Rates

Fuel rates are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42,780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.)

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



Picture shown may not reflect actual configuration

Sound Attenuated / Weather Protective Enclosures for 3412C Powered Generator Sets

Larne 50 / 60 Hz

These factory installed enclosures include installed silencers, and are designed for safety and aesthetic value. The enclosure is mounted on either an integral fuel tank base or a wide fabricated steel base. Rugged construction provides weather protection and a high degree of sound reduction.

Features

Robust / Highly Corrosion Resistant Construction

- Environmentally friendly, polyester powder baked paint in Caterpillar yellow or white
- Zinc plated or stainless steel fasteners
- 4 Gauge steel construction
- Internally mounted exhaust silencing system

Excellent Access

- Control panel mounted on right side of package
- Large cable entry area for ease of installation
- Accommodates right side entry access to power terminal strips or circuit breaker
- Multiple doors on both sides allow easy access to service points
- Hinged doors allow 180° opening rotation
- Lube oil and coolant drains piped to exterior of enclosure and terminated with drain valves
- Radiator fill cover

Security and Safety

- Lockable access doors with standard key
- Cooling fan and battery charging alternator fully guarded
- Externally mounted emergency stop button
- Designed for spreader-bar lifting to ensure safety
- Control panel viewing window

Options

- Interior lighting system
- 1200L (317 Gal) integral fuel tank in base

Sound Attenuated Enclosure Operating Characteristics

Generator Set Standby Rating 50 Hz — kVA 60 Hz — ekW	50 Hz (1500 rpm)					60 Hz (1800 rpm)			
	LWA (dBA)	dBA @ Full Load		Ambient * °C (°F)		dBA @ Full Load		Ambient* °C (°F)	
		1m (3.3 ft)	7m (23 ft)	Standby	Prime	1m (3.3 ft)	7m (23 ft)	Standby	Prime
700	—	—	—	—	—	85	73	46 (114)	45 (113)
750	104	83	72	55 (131)	54 (129)	85	74	44 (111)	44 (111)
800	104	83	72	51 (123)	49 (120)	85	75	41 (105)	41 (105)
900	104	83	72	46 (114)	46 (114)	—	—	—	—

*Ambient measured with Caterpillar Extended Life Coolant.

Enclosure Dimensions

	Sound Attenuated	Weather Protective
Dimensions:		
Length — mm (inch)	5900 (232)	5260 (207)
Height w/base — mm (inch)	2564 (101)	2564 (101)
Width w/base — mm (inch)	2238 (88)	2238 (88)
Approximate Weight of Package:		
kg (lb)	9270 (20,394)	8812 (19,430)

For reference only. Do not use for installation design. Please contact your local dealer for exact weights and dimensions.

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