

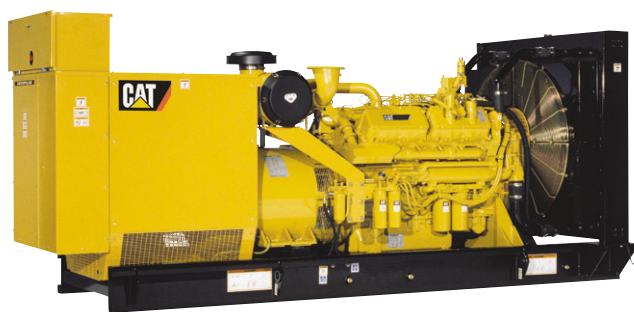


Image shown may not reflect actual package.

PRIME

**591 ekW 739 kVA
60 Hz 1800 rpm 480 Volts**

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

FEATURES

FUEL/EMISSIONS STRATEGY

- Low Fuel consumption

UL 2200 / CSA - Optional

- UL 2200 listed packages
- CSA Certified

Certain restrictions may apply.
Consult with your Cat® Dealer.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested
- Flexible packaging options for easy and cost effective installation

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

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

CAT® 3412C TA 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

CAT GENERATOR

- Designed to match the performance and output characteristics of Cat diesel engines
- Single point access to accessory connections
- UL 1446 recognized Class H insulation

CAT EMCP 4 CONTROL PANELS

- Simple user friendly interface and navigation
- Scalable system to meet a wide range of customer needs
- Integrated Control System and Communications Gateway

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	• Air cleaner	
Cooling	• Package mounted radiator	
Exhaust	• Exhaust flange outlet	☐ Exhaust mufflers (except Tier 4)
Fuel	• Primary fuel filter with integral water separator • Secondary fuel filters • Fuel priming pump	
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	☐ Oversize and premium generators ☐ Permanent magnet excitation (PMG) ☐ Internal excited (IE) ☐ Anti-condensation space heaters
Power Termination	• Bus bar	☐ Circuit breakers, UL listed ☐ Circuit breakers, IEC compliant
Control Panel	• EMCP 4 Genset Controller	☐ EMCP 4.2 ☐ EMCP 4.3 ☐ EMCP 4.4 ☐ Generator temperature monitoring and protection ☐ Load share module ☐ Digital I/O module ☐ Remote monitoring software
Mounting		☐ Rubber vibration isolators
Starting/Charging		☐ Battery chargers ☐ Oversize batteries ☐ Jacket water heater ☐ Heavy duty starting system ☐ Charging alternator ☐ Air starting motor with control and silencer (3500 & C175 models only)
General	• Paint - Caterpillar Yellow except rails and radiators gloss black	The following options are based on regional and product configuration: ☐ Seismic Certification per Applicable Building Codes: IBC 2000, IBC 2003, IBC 2006, IBC 2009, CBC 2007 ☐ EU Certificate of Conformance (CE) ☐ UL 2200 package ☐ CSA Certification ☐ EEC Declaration of Conformity ☐ Enclosures- sound attenuated, weather protective ☐ Automatic transfer switches (ATS) ☐ Integral & sub-base fuel tanks ☐ Integral & sub-base UL listed dual wall fuel tanks

SPECIFICATIONS

CAT GENERATOR

Frame size.....	594
Excitation.....	Self Excitation
Pitch.....	0.7333
Number of poles.....	4
Number of bearings.....	Single bearing
Number of Leads.....	012
Insulation.....	UL 1446 Recognized Class H with tropicalization and antiabrasion
- Consult your Caterpillar dealer for available voltages	
IP Rating.....	Drip Proof IP22
Alignment.....	Pilot Shaft
Overspeed capability.....	150
Wave form Deviation (Line to Line).....	Less than 5% deviation
Voltage regulation.....	Less than +/- 1/2% (steady state)
Less than +/- 1% (no load to full load)	

CAT DIESEL ENGINE

3412C TA, V-12, 4-Stroke Water-cooled Diesel	
Bore.....	137.20 mm (5.4 in)
Stroke.....	152.40 mm (6.0 in)
Displacement.....	27.02 L (1648.86 in ³)
Compression Ratio.....	14.5:1
Aspiration.....	TA
Fuel System.....	Pump and Lines
Governor Type.....	PEEC - Cat Electronic

CAT EMCP 4 SERIES CONTROLS

EMCP 4 controls including:

- Run / Auto / Stop Control
- Speed and Voltage Adjust
- Engine Cycle Crank
- 24-volt DC operation
- Environmental sealed front face
- Text alarm/event descriptions

Digital indication for:

- RPM
- DC volts
- Operating hours
- Oil pressure (psi, kPa or bar)
- Coolant temperature
- Volts (L-L & L-N), frequency (Hz)
- Amps (per phase & average)
- ekW, kVA, kVAR, kW-hr, %kW, PF

Warning/shutdown with common LED indication of:

- Low oil pressure
- High coolant temperature
- Overspeed
- Emergency stop
- Failure to start (overcrank)
- Low coolant temperature
- Low coolant level

Programmable protective relaying functions:

- Generator phase sequence
- Over/Under voltage (27/59)
- Over/Under Frequency (81 o/u)
- Reverse Power (kW) (32)
- Reverse reactive power (kVar) (32RV)
- Overcurrent (50/51)

Communications:

- Six digital inputs (4.2 only)
- Four relay outputs (Form A)
- Two relay outputs (Form C)
- Two digital outputs
- Customer data link (Modbus RTU)
- Accessory module data link
- Serial annunciator module data link
- Emergency stop pushbutton

Compatible with the following:

- Digital I/O module
- Local Annunciator
- Remote CAN annunciator
- Remote serial annunciator

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TECHNICAL DATA

Open Generator Set - - 1800 rpm/60 Hz/480 Volts	DM7378	
Package Performance Genset Power rating with fan Genset Power rating @ 0.8 pf	591 ekW 738.75 kVA	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	159.8 L/hr 124.3 L/hr 89.4 L/hr	42.2 Gal/hr 32.8 Gal/hr 23.6 Gal/hr
Cooling System¹ Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine coolant capacity Radiator coolant capacity Engine Coolant capacity with radiator/exp. tank	0.12 kPa 1266 m ³ /min 57.0 L 84.0 L 141.0 L	0.48 in. water 44708 cfm 15.1 gal 22.2 gal 37.2 gal
Exhaust System Combustion air inlet flow rate Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	45.7 m ³ /min 537.7 ° C 132.2 m ³ /min 203.2 mm 6.7 kPa	1613.9 cfm 999.9 ° F 4668.6 cfm 8.0 in 26.9 in. water
Heat rejection Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	370 kW 595 kW 89 kW 31.8 kW	21042 Btu/min 33838 Btu/min 5061 Btu/min 1808.5 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	1480 skVA 594 105 ° C	189 ° F
Lube System Sump refill with filter	69.0 L	18.2 gal
Emissions³ NOx g/hp-hr CO g/hp-hr HC g/hp-hr PM g/hp-hr	8.92 g/hp-hr .66 g/hp-hr .06 g/hp-hr .078 g/hp-hr	

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 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

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 35° API (16° C or 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.).

Additional Ratings may be available for specific customer requirements. Consult your Cat representative for details.

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DIMENSIONS

Package Dimensions		
Length	4485.0 mm	176.57 in
Width	1798.1 mm	70.79 in
Height	1986.7 mm	78.22 in

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2923107).

Performance No.: DM7378

Feature Code: 412DEAA

Gen. Arr. Number: 1492437

Source: European Sourced

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