

PRIME

**648 ekW 810 kVA
50 Hz 1500 rpm 400 Volts**

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 package.

FEATURES

FUEL/EMISSIONS STRATEGY

- Low fuel consumption

DESIGN CRITERIA

- The generator set accepts 100% rated load in one step.

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested

SINGLE-SOURCE SUPPLIER

- Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Caterpillar® dealers provide extensive post sale support including maintenance and repair agreements
- Caterpillar dealers have over 1,600 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 SR4B GENERATOR

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

CAT EMCP 3 SERIES 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	<ul style="list-style-type: none"> •Single element canister type air cleaner •Service indicator 	<ul style="list-style-type: none"> •Dual element air cleaner •Heavy-duty air cleaner
Cooling	<ul style="list-style-type: none"> • Radiator with guard • Coolant drain line with valve • Fan and belt guards • Caterpillar® Extended Life Coolant • Low coolant level alarm or shutdown 	<ul style="list-style-type: none"> • Radiator duct flange • Jacket water heater with shutoff valve • Heat exchanger and expansion tank
Exhaust	<ul style="list-style-type: none"> • Stainless steel exhaust flex and ANSI style outlet flange, gasket, bolts and mating weld flange, shipped loose 	<ul style="list-style-type: none"> • Mufflers (10 or 35 dBA) • Elbow kit and through-wall installation kit • Manifold and turbocharger guards
Fuel	<ul style="list-style-type: none"> • Primary and secondary fuel filters • Water separator • Fuel priming pump • Flexible fuel lines 	<ul style="list-style-type: none"> • Manual transfer pump • Choice of three Automatic Transfer Systems
Generator	<ul style="list-style-type: none"> • Class H insulation • Class F temperature rise (105°C prime/130°C standby) • VR3F Voltage Regulator, 3-phase sensing, 2:1 Volts/Hz • Reactive droop • Extension box • Bus bar connection • Segregated low voltage (AC/DC) wiring panel 	<ul style="list-style-type: none"> • Digital Voltage Regulator with KVAR/PF control • Anti-condensation space heater • Oversize and premium generators • Circuit breakers, IEC Compliant, 3-pole or 4-pole with shunt trip
Governor	<ul style="list-style-type: none"> • PEEC - Cat Electronic 	<ul style="list-style-type: none"> • Electronic load sharing
Control Panels	<ul style="list-style-type: none"> • EMCP 3.1 (mounted inside power center) • Rear facing • Speed adjust • Emergency stop pushbutton • Voltage adjustment 	<ul style="list-style-type: none"> • EMCP 3.2 & EMCP 3.3 • Right-hand mounting of control panel • Local annunciator modules (NFPA 99/110) • Remote annunciator modules (NFPA 99/110) • Discrete I/O module
Lube	<ul style="list-style-type: none"> • Lubricating oil and filter • Oil drain line with valves • Fumes disposal 	<ul style="list-style-type: none"> • Manual sump pump
Mounting	<ul style="list-style-type: none"> • Formed steel base • Linear vibration isolators between base and engine-generator 	<ul style="list-style-type: none"> • Skid base • Fuel tank base • Extended capacity fuel tank base
Starting/Charging	<ul style="list-style-type: none"> • 45 amp charging alternator • Fuel shutoff solenoid • 24 volt starting motor • Battery with rack and cables 	<ul style="list-style-type: none"> • Heavy-duty starting system • 5 or 10 amp battery charger • Oversize batteries • Ether starting aid • Battery disconnect switch
General		<ul style="list-style-type: none"> • Enclosures - sound attenuated, weather protective • Automatic transfer switches (ATS) • Floor standing circuit breakers • EU Certificate of Conformance (CE)

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SPECIFICATIONS

CAT SR4B GENERATOR

Frame Size.....	598
Excitation.....	Self Excited
Pitch.....	0.8667
Number of poles.....	4
Number of bearings.....	Single Bearing
Insulation.....	UL 1446 Recognized Class H with tropicalization and antiabrasion
IP Rating.....	Drip Proof IP22
Alignment.....	Pilot Shaft
Overspeed capability - % of rated.....	180
Wave form.....	Less than 5% deviation
Paralleling kit/Droop transformer.....	Standard
Voltage regulator.....	3 Phase sensing with selectable volts/Hz
Voltage regulation.....	Less than +/- 1/2% (steady state) Less than +/- 1% (no load to full load)
Telephone Influence Factor.....	Less than 50
Harmonic distortion.....	Less than 5%

CAT DIESEL ENGINE

3412C TA V-12, 4-stroke-cycle watercooled diesel	
Bore - mm.....	137.20 mm (5.4 in)
Stroke - mm.....	152.40 mm (6.0 in)
Displacement - L.....	27.02 L (1648.86 in ³)
Compression Ratio.....	13.0:1
Aspiration.....	TA
Fuel system.....	Pump and Lines
Governor type.....	PEEC - Cat Electronic

CAT CONTROL PANELS

- EMCP 3.1 (Standard)
- Voltage adjustment potentiometer
- Digital speed adjustment (via EMCP3 display)
- Panel illuminating lights
- Digital AC metering - 3 phase, true RMS
- Digital indications for:
 - RPM
 - System DC volts
 - Operating hours
 - Oil pressure
 - Coolant temperature
 - Coolant Temperature
 - AC volts, phase amps, Hz
 - kW, kVa, kVAR, kW-hr, % kW, PF
- Shutdowns with indicating lights for:
 - Low oil pressure
 - High coolant temperature
 - Overspeed
 - Emergency Stop
 - Failure to start (overcrank)
- Programmable digital (4) inputs and (4) outputs
- ModBus isolated data link (RS -485 half-duplex)
supports serial communication at data rate up to 115.2 kbaud (optional)

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TECHNICAL DATA

Open Generator Set - - 1500 rpm/50 Hz/400 Volts	DM1908	
Package Performance Genset Power rating @ 0.8 pf Genset Power rating with fan	810 kVA 648 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	171.7 L/hr 130.4 L/hr 90.9 L/hr	45.4 Gal/hr 34.4 Gal/hr 24.0 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 1176 m ³ /min 57.0 L 90.0 L 147.0 L	0.48 in. water 41530 cfm 15.1 gal 23.8 gal 38.8 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)	48.8 m ³ /min 539.4 ° C 139.3 m ³ /min 203.2 mm 6.7 kPa	1723.4 cfm 1002.9 ° F 4919.3 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	386 kW 637 kW 108 kW 29.8 kW	21952 Btu/min 36226 Btu/min 6142 Btu/min 1694.7 Btu/min
Alternator² Motor starting capability @ 30% voltage dip Frame Temperature Rise	1629 skVA 598 105 ° C	189 ° F
Lube System Sump refill with filter	69.0 L	18.2 gal
Emissions³ NOx mg/nm ³ CO mg/nm ³ HC mg/nm ³ PM mg/nm ³	2972.6 mg/nm ³ 193.8 mg/nm ³ 122.7 mg/nm ³ 45.9 mg/nm ³	

¹ For ambient and altitude capabilities consult your Caterpillar 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

Meets or Exceeds International Specifications: AS1359, CSA, IEC60034, ISO 3046, ISO 8528, NEMA MG 1-33, UL508A, 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. Prime power in accordance with ISO 3046. Prime ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

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.). Additional ratings may be available for specific customer requirements, contact your Caterpillar representative for details. For information regarding Low Sulfur fuel and Biodiesel capability, please consult your Caterpillar dealer.

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DIMENSIONS

Package Dimensions		
Length	4485.0 mm	176.57 in
Width	1741.6 mm	68.57 in
Height	1986.7 mm	78.22 in
Weight	7103 kg	15,659 lb

NOTE: For reference only - do not use for installation design. Please contact your local dealer for exact weight and dimensions. (General Dimension Drawing #2905816).

Performance No.: DM1908

Feature Code: 412DER1

Gen. Arr. Number: 1492445

Source: European Sourced

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