



Image shown may not reflect actual package.

## STANDBY

**720 e kW 900 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.

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

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## SPECIFICATIONS

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### 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 <sup>3</sup> )
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	DM1909	
<b>Package Performance</b> Genset Power rating @ 0.8 pf Genset Power rating with fan	900 kVA 720 ekW	
<b>Fuel Consumption</b> 100% load with fan 75% load with fan 50% load with fan	191.7 L/hr 143.7 L/hr 99.6 L/hr	50.6 Gal/hr 38.0 Gal/hr 26.3 Gal/hr
<b>Cooling System<sup>1</sup></b> 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 <sup>3</sup> /min 59.0 L 90.0 L 149.0 L	0.48 in. water 41530 cfm 15.6 gal 23.8 gal 39.4 gal
<b>Exhaust System</b> Combustion air inlet flow rate Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size (internal diameter) Exhaust system backpressure (maximum allowable)	54.7 m <sup>3</sup> /min 544.9 ° C 157.3 m <sup>3</sup> /min 203.2 mm 6.7 kPa	1931.7 cfm 1012.8 ° F 5555.0 cfm 8.0 in 26.9 in. water
<b>Heat rejection</b> Heat rejection to coolant (total) Heat rejection to exhaust (total) Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	429 kW 721 kW 119 kW 33.9 kW	24397 Btu/min 41003 Btu/min 6768 Btu/min 1927.9 Btu/min
<b>Alternator<sup>2</sup></b> Motor starting capability @ 30% voltage dip Frame Temperature Rise	1629 skVA 598 130 ° C	234 ° F
<b>Lube System</b> Sump refill with filter	139.0 L	36.7 gal
<b>Emissions<sup>3</sup></b> NOx mg/nm <sup>3</sup> CO mg/nm <sup>3</sup> HC mg/nm <sup>3</sup> PM mg/nm <sup>3</sup>	2954.8 mg/nm <sup>3</sup> 454.4 mg/nm <sup>3</sup> 143.1 mg/nm <sup>3</sup> 64.8 mg/nm <sup>3</sup>	

<sup>1</sup> For ambient and altitude capabilities consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

<sup>2</sup> 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.

<sup>3</sup> 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

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**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

**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. Standby power in accordance with ISO 8528. Fuel stop power in accordance with ISO 3046. Standby ambients shown indicate ambient temperature at 100% load which results in a coolant top tank temperature just below the shutdown 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

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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.: DM1909

Feature Code: 412DER1

Gen. Arr. Number: 1492445

Source: European Sourced

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