



Image shown may not reflect actual package.

PRIME 508 ekW 635 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

FULL RANGE OF ATTACHMENTS

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

ENCLOSURES (optional)

Ç Weather protective and sound attenuated

SINGLE-SOURCE SUPPLIER

Ç Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

Ç Worldwide parts availability through the Caterpillar[®] dealer network

Ç With over 1844 dealer branch stores operating in 166 countries, you're never far from the Caterpillar[®] part you need

Ç 99.7% of parts orders filled within 24 hours. The best product support record in the industry

Ç Caterpillar dealer service technicians are trained to service every aspect of your electric power generation system

Ç Preventive maintenance agreements

Ç The Cat[™] Scheduled Oil Sampling (SÇOCSSM) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products



CAT[®] 3412C TA DIESEL ENGINE

Ç Reliable, rugged, durable design

Ç Field-proven in thousands of applications worldwide

Ç Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight

Ç UL 2200 Listed packages are available. Certain restrictions may apply. Consult with your Caterpillar[®] dealer



CAT[®] SR4B GENERATOR

Ç Designed to match performance and output characteristics of Caterpillar[™] diesel engines

Ç Optimum winding pitch for minimum total harmonic distortion and maximum efficiency

Ç Segregated low voltage, AC/DC accessory box provides single point access to accessory connections

Ç UL 1446 Recognized Class H insulation system



CAT[®] CONTROL PANELS

Ç Two levels of controls, designed to meet individual customer needs:

- EMCP II provides digital monitoring, metering, and protection

- EMCP II+ provides EMCP II features along with full-featured power metering and protective relaying

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 and duct flange • 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"> • Jacket water heater with shutoff valves • Heat exchanger and expansion tank
Exhaust	<ul style="list-style-type: none"> • Stainless steel exhaust flex and ANSI outlet flange 	<ul style="list-style-type: none"> • Mufflers (20, 25, or 30 dBA) • Elbow kit and through-wall installation kit • Manifold and turbocharger guards • All mufflers have side/end inlet options
Fuel	<ul style="list-style-type: none"> • Primary and secondary fuel filters • Water separator • Fuel priming pump • Flexible fuel lines • Fuel pressure gauge 	<ul style="list-style-type: none"> • Manual transfer pump • Choice of three Automatic Transfer Systems • Low fuel level alarm
Generator	<ul style="list-style-type: none"> • Permanent magnet excited • Class H insulation • Class F temperature rise (105°C prime/130°C stand-by) • VR6 Voltage Regulator, 3-phase sensing, 2:1 Volts/Hz • Reactive droop • Extension box • Bus bar connection 	<ul style="list-style-type: none"> • Self excited • Digital Voltage Regulator • Digital Voltage Regulator with KVAR/PF control • Anti-condensation space heater • Oversize and premium generators (648 ekW Prime/720 ekW Standby) • Circuit breakers, UL Listed, 3-pole with shunt trip • Circuit breakers, IEC Compliant, 3-pole or 4-pole with shunt trip • Multiple breaker capability
Governor	<ul style="list-style-type: none"> • PEEC - Cat® Electronic 	<ul style="list-style-type: none"> • Electronic isochronous • Electronic load sharing
Control Panels	<ul style="list-style-type: none"> • EMCP II 	<ul style="list-style-type: none"> • EMCP II+ • Switchgear conversion • Customer Communication Module • Local alarm and remote annunciator modules
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"> • Integral fuel tank base • Sub base fuel tank • Wide base • Skid base
Starting/Charging	<ul style="list-style-type: none"> • 45 amp charging alternator • Energized to run (ETR) fuel shutoff solenoid • 24 volt starting motor • Batteries with rack and cables • Battery disconnect switch 	<ul style="list-style-type: none"> • Heavy-duty starting system • 5 or 10 amp battery charger • Oversize batteries • Ether starting aid
General		<ul style="list-style-type: none"> • Enclosures - sound attenuated, weather protective • Automatic transfer switches (ATS) • Floor standing circuit breakers • CSA Certification
Note	Standard and optional equipment may vary for UL 2200 Listed packages. UL 2200 Listed packages may have oversized generators with a different temperature rise and motor starting characteristics.	

SPECIFICATIONS



CAT SR4B GENERATOR

Frame Size	595
Excitation	Permanent Magnet
Pitch	0.7333
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	125
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
Stroke - mm	152.40
Displacement - L	27.02
Compression Ratio	14.5 TO 1
Aspiration	TA
Fuel system	Mechanical pump and line
Governor type	PEEC - Cat Electronic



CAT CONTROL PANELS

- EMCP II
- 24 Volt CD Control
- NEMA 1, IP22 enclosure
- Electronically dead front
- Lockable hinged door
- Generator instruments meet ANSI C-39-1
- Generator terminal box mounted
- Single location customer connection point
- UL508A Listed
- Panel illuminating lights
- Auto start/stop control
- Voltage adjust potentiometer
- True RMS AC metering
- Digital indications for:
 - rpm
 - Operating hours
 - Oil pressure
 - Coolant Temperature
 - System DC volts
 - AC volts, phase amps, Hz
- Shutdowns with indicating lights for:
 - Low oil pressure
 - High coolant temperature
 - Overspeed
 - Emergency Stop
 - Failure to start (overcrank)

 **TECHNICAL DATA**

Open Generator Set - — 1500 rpm/50 Hz/400 Volts	PRIME DM0625	
Package Performance Power rating @ 0.8 pf Power rating	635 kVA 508 ekW	
Fuel Consumption 100% load with fan 75% load with fan 50% load with fan	139.8 L/hr 108.1 L/hr 76.4 L/hr	36.9 Gal/hr 28.6 Gal/hr 20.2 Gal/hr
Cooling System* Ambient air temperature Air flow restriction (system) Air flow (max @ rated speed for radiator arrangement) Engine coolant capacity	51 Deg C .12 kPa 988 m3/min 59.0 L	124 Deg F 0.48 in. water 34,891 cfm 15.6 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)	34.0 m3/min 605.9 Deg C 106.8 m3/min 203.2 mm 6.7 kPa	1,200.7 cfm 1,123 Deg F 3,771.6 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	319 kW 516 kW 115 kW 28.38 kW	18,141 Btu/min 29,345 Btu/min 6,540 Btu/min 1,613.97 Btu/min
Alternator** Motor starting capability @ 30% voltage dip Frame Temperature Rise	1247 skVA 595 105 Deg C	
Lube System Lube oil refill volume with filter change for standard sump	60.0 L	15.9 Gal

*Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer.

**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 degree C ambient per NEMA MG1-32.

PRIME 508 kW 635 kVA
50 Hz 1500 rpm 400 Volts



RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications: · ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG 1-22, VDE0530, 89/392/EEC, 89/336/EEC

Prime - Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514 available on request. Prime power ambients shown indicate ambient at 100 percent load which results in a coolant top tank temperature just below the alarm temperature.

Ratings are based on SAE J1995 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 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 Caterpillar representative for details.

Package Dimensions		
Length	4523.9 mm	178.11 in
Width	1821.5 mm	71.71 in
Height	1960.4 mm	77.18 in
Weight	6672 kg	14,709 lb

Note: Do not use for installation design.
See general dimension drawings
for detail (Drawing #1863618).

TMI Reference No.: DM0625

www.CAT-ElectricPower.com

PL Reference No.: 412DE0Z

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