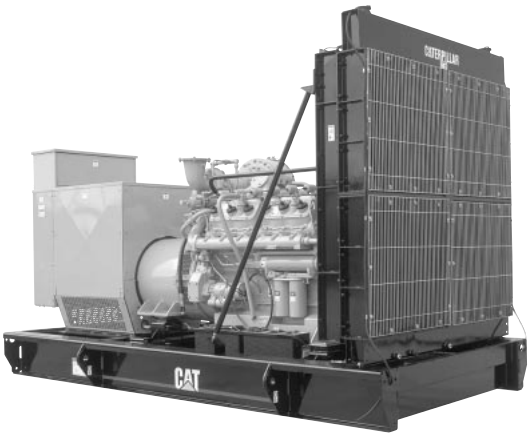


CONTINUOUS
450 kVA

50 Hz

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

- 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

- Worldwide parts availability through the Caterpillar dealer network
- With over 1,200 dealer outlets operating in 166 countries, you're never far from the Caterpillar part you need.
- 99.5% of parts orders filled within 48 hours. The best product support record in the industry.
- Caterpillar dealer service technicians are trained to service every aspect of your electric power generation system.
- Preventive maintenance agreements
- The Cat Scheduled Oil Sampling (S•O•S℠) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT® G3412C LE GAS ENGINE

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Low pressure gas

CAT SR4B GENERATOR

- Designed to match performance and output characteristics of Caterpillar engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Segregated AC/DC, low voltage accessory box provides single point access to accessory connections

CAT CONTROL PANELS

- 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	Single element canister type air cleaner Service indicator	
Cooling	Radiator with guard Coolant drain lines with valves Fan and belt guards Caterpillar Coolant Low coolant level sensors	Jacket water coolant heater with shutoff valves Radiator removal
Exhaust	Stainless steel exhaust flex with weld outlet flange	15 dBA muffler
Fuel	Gas pressure regulator Low pressure fuel system Energize To Run (ETR) gas shutoff valve	
Generator	Self excited Class H insulation Class F temperature rise (105° C continuous/130° C standby) VR6 Voltage Regulator, 3-phase sensing, with reactive droop 2:1 Volts/Hz or 1:1 Volts/Hz Bus bar termination Extension box	Permanent magnet excited Digital Voltage Regulator Digital Voltage Regulator with KVAR/PF control Anti-condensation space heater Oversize & premium generators Circuit breakers, UL, 3 pole with shunt trip Multiple breaker capability
Governor	2301A speed control with EG3P actuator	Electronic load sharing
Ignition	Electronic Ignition System (EIS)/DST	
Control Panels	EMCP II	EMCP II+ Customer Communication Module Local alarm & remote annunciator modules
Lube	Lubricating oil and filter Oil drain line with valve Fumes disposal	Manual sump pump
Mounting	Wide base Linear vibration isolators between base and engine-generator	
Starting/Charging	45 amp charging alternator 24 volt starting motor Batteries with rack and cables Battery disconnect switch	Battery chargers, 5 & 10 amp Oversize batteries
General		Automatic Transfer Switches (ATS) Floor standing circuit breakers

SPECIFICATIONS

CAT SR4B GENERATOR

Frame 592
Type . . . . . Self excited, static regulated, brushless
Construction . . . . . Single bearing, close coupled
Three phase . . . . . 12 lead reconnectable
Insulation . . . . . Class H with tropicalization and antiabrasion
IP rating . . . . . Drip proof 22
Alignment . . . . . Pilot shaft
Overspeed capability
  Prototype tested 180%
  Production tested 150%
Wave form . . . . . Less than 5% deviation
Paralleling capability . . . . . Standard
Voltage regulator . . . . . 3-phasing sensing with Volts-per-Hertz
Voltage regulation . . . . . Less than ± 1/2% (steady state)
Less than ± 1% (no load to full load)
Voltage gain . . . . . Automatic
Telephone Influence Factor (TIF) . . . . . Less than 50
Harmonic Distortion (THD) . . . . . Less than 5%

CAT ENGINE

G3412C LE, 4-stroke-cycle, SCAC
Bore – mm (in) 137 (5.4)
Stroke – mm (in) 152 (6.0)
Displacement – L (cu in) 27.0 (1649)
Compression ratio 11.4:1
Aspiration . . . . . Turbocharged-Aftercooled
Ignition system . . . . . Cat Electronic Ignition (EIS) with Detonation Sensitive Timing (DST)
Governor type . . . . . Woodward 2301A

CAT CONTROL PANEL

24 Volt DC Control
NEMA 1, IP22 enclosure
Electrically dead front
Lockable hinged door
Generator instruments meet ANSI C-39-1
Terminal box mounted
Single location customer connector point

Consult your Caterpillar dealer for available voltages.

TECHNICAL DATA

Open Generator Set — 1500 rpm/50 Hz/400 Volts		Continuous DM5450
Package Performance		
Power rating @ 0.8 PF	kVA	450
Power rating	ekW	360
Aftercooler temperature	Deg C	54
Fuel Consumption		
100% load with fan	N•m³/hr	111
75% load with fan	N•m³/hr	86.8
50% load with fan	N•m³/hr	60.5
Cooling System		
Ambient air temperature*	Deg C	40
Air flow restriction (system)	kPa	0.12
Air flow (maximum @ rated speed for standard radiator arrangement)	m³/min	915
Engine coolant capacity with radiator	L	140
Jacket water outlet temperature	Deg C	99
Exhaust System		
Combustion air inlet flow rate	N•m³/min	33
Exhaust gas stack temperature	Deg C	356
Exhaust gas flow rate	m³/min	34
Exhaust flange size (internal diameter)	mm	203.2
Exhaust system backpressure (maximum allowable)	kPa	6.7
Heat Rejection		
Low Heat Value (LHV) fuel input	kW	1117
Heat rejection to jacket water (includes oil cooler)	kW	329
Total heat rejection to exhaust (LHV to 25° C)	kW	298
Heat rejection to exhaust (LHV to 120° C)	kW	190
Heat rejection to A/C	kW	49
Heat rejection to atmosphere from engine	kW	45
Heat rejection to atmosphere from generator	kW	25
Generator		
Motor starting capability @ 30% voltage dip**	kVA	723
Frame		592
Temperature rise	Deg C	105
Emissions* **		
NOx	mg/N•m³ @ 5% O_2	871
CO	mg/N•m³ @ 5% O_2	771
HC (total)	mg/N•m³ @ 5% O_2	2010
HC (non-methane)	mg/N•m³ @ 5% O_2	302
Exhaust O_2 (dry)	%	8.5

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

**Assumes synchronous driver

***Emissions data measurement is consistent with those described in EPA CFR 40 PART 89 SUBPART D and ISO 8178-1 for measuring HC, CO, CO_2 and NOx. Data shown is based on steady state engine operating conditions of 77° F, 28.43 inches HG and fuel having a LHV of 920 BTU per cubic foot at 30.00 inches HG absolute and 32° F. Not to exceed emission data shown is subject to instrumentation, measurement, facility and engine fuel system adjustments.

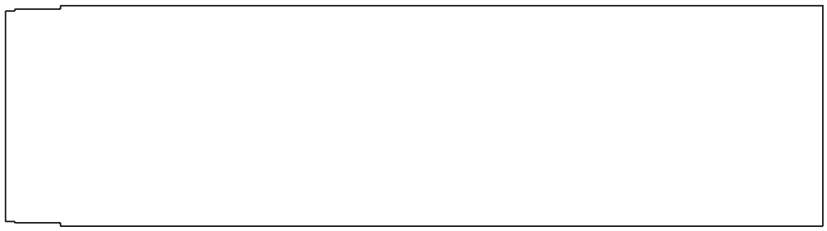
RATING DEFINITIONS AND CONDITIONS

Continuous — Output available without varying load for an unlimited time.

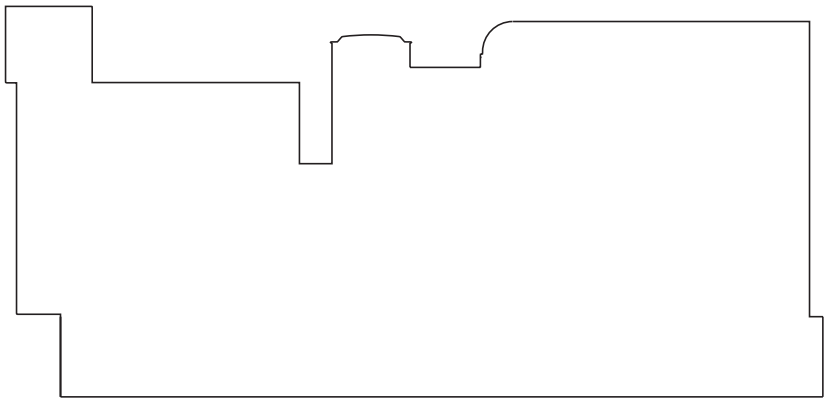
Ratings are based on ISO3046/1 standard reference conditions of 25° C (77° F) and 100 kPa (29.61 in Hg).

Ratings are based on pipeline natural gas having a LHV (low heat value) of 36.2 mJ/N•m³ (920 Btu/cu ft). Variations in altitude, temperature, and gas composition from standard conditions or the use of a three way catalyst may require a reduction in engine horsepower.

CONTINUOUS POWER GENERATOR SET PACKAGE — TOP VIEW



CONTINUOUS POWER GENERATOR SET PACKAGE — SIDE VIEW



Package Dimensions		
Length	4540 mm	178.74 in
Width	2238 mm	88.11 in
Height	2678.5 mm	105.45 in
Shipping Weight	6356 kg	14,000 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #207-4503).

TMI Reference No.: DM5450

U.S. sourced

LEHE1435 (07-01)