

Shown with
Optional Equipment

FEATURES



EMISSIONS

- Meets most worldwide emissions requirements down to 0.5 g/bhp-hr NO_x level without after treatment

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

- With over 1,800 dealer branch stores 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.
- Customer Support Agreements offer back-to-back services from scheduled inspections and preventive maintenance to before-failure overhauls and Total Cost-Per-Hour Guarantees.

CONTINUOUS 1600 ekW @ 1200 RPM 60 Hz

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



CAT® G3520C GAS ENGINE

- Robust high speed diesel block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on low pressure pipeline natural gas
- Simple open chamber combustion system for reliability and fuel flexibility
- Leading edge technology in ignition system and air/fuel ratio control for lower emissions and higher engine efficiency
- One electronic control module handles all engine functions: ignition, governing, air fuel ratio control, and engine protection



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 low voltage (AC/DC) accessory box provides single point access to accessory connections



CAT CONTROL MODULE

- Designed to meet individual customer needs:
 - Gas Engine Control Module provides full-featured, engine management and control functions, purge cycle, staged shutdown logic, plus programmable protective relaying functions
- Remote control and monitor capability options

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	2 element, single stage air cleaner with enclosure, service indicator, horizontal mount (shipped loose)	2 elements with enclosure vertical mount (shipped loose). Stand to mount horizontal or optional vertical air cleaner. Heavy duty air cleaner w/precleaner, horizontal mount (shipped loose)
Cooling	Engine driven water pumps for jacket water and aftercooler circuit, jacket water and SCAC thermostats Cat flange connections	Remote radiator for JW and SCAC circuits, water level switch included but not wired, coolant level drain line with valve, 400/480V electric driven fans with guard, motor control and disconnect switch
Engine Control Module	Fuel/air ratio control Start/stop logic: gas purge cycle, staged shutdown Engine Protection Systems: detonation sensitive timing, high jacket water temperature, low oil pressure, failure to start overcrank, overspeed, high oil temperature, emergency stop, transient richening and turbo bypass control	
Exhaust	Dry exhaust manifolds, Cat flanged outlet Individual exhaust port and turbocharger outlet wired to integrated Temperature Sensing Module with Gas ECM providing alarms and shutdowns	15 dBA muffler, 18 dBA muffler, 25 dBA muffler with ANSI style flanges. Spark arresting muffler with ANSI style flanges.
Fuel	Electronic air fuel ratio control (Engine Control Module) ADEM III based, electronic fuel control valve, throttle plate; hydraulically actuated and electronically control by ECM, gas shutoff valve, 24 volt energized-to-run required but not standard, low pressure pipeline natural gas fuel supply (35-350 mbar). Sized for 31.5 to 47.2 MJ/N·m³ (800 to 1200 Btu/cu ft) dry pipeline natural gas.	Gas Shutoff Valve , 24 Volt Energized-to-Run (ETR) Fuel filter (non-coalescent) Knockdown regulator
Ignition	ECM provides electronic ignition, individual cylinder timing and individual cylinder detonation control (through the use of one detonation sensor per 2 cylinders)	
Integrated Thermo Sensing Module (TSM)	24 thermocouples to input individual exhaust port temperatures and inlet and outlet temperatures of both turbochargers	CCM transfers Cat DataLink information through RS232 to customer terminal
Generator	Permanent magnet excitation, 105° C rise, single bearing, six lead, 3-phase sensing, platinum stator RTDs, Class H Insulation, Caterpillar's Digital Voltage Regulator with adjustable 1:1 or 2:1 volt/Hz and PF control, bus bar termination, extension box, segregated low voltage wiring panel, winding temperature detectors, anti-condensation space heaters	Overize and premium generators Bearing temperature detector Low voltage cable extension box
Governor	Electronic (ADEM III), ProAct actuator	Electronic load sharing
Control Panels	EMCP II+	Local alarm and remote annunciator modules Customer Interface Module, synchronizing module
Lube	Lubricating oil and filter, oil drain valve, crankcase breathers, gear type lube oil pump, integral lube oil cooler, filler/dipstick	Closed Crankcase ventilation system, prelube pump
Mounting	330 mm structural steel rails, spring-type anti-vibration mounts (shipped loose)	
Starting/Charging	Dual 50 MT 24 volt starting motors, batteries with rack and cables, batteries disconnect switch	Battery charger, 24V charging alternator, air starting system, jacket water coolant heaters, 9 kW (480V/3 phases with 240V/1 phase pump, include isolation valves) overize batteries
General	Damper	Manual barring device, certifications, crankcase explosion relief valve

SPECIFICATIONS

CAT SR4B GENERATOR

Frame size	868
Excitation	Permanent magnet
Pitch	0.75
Number of poles	6
Number of bearings	2
Number of leads	6
Insulation	UL 1446 Recognized Class H Insulation
IP rating	Drip proof IP22
Alignment	Pilot shaft
Overspeed capability	125%
Wave form	Less than 5% deviation
Paralleling kit droop transformer	Standard
Voltage regulator	3-phase sensing with adjustable 1:1 or 2:1 Volts/Hz, UL 508A Listed
TIF	Less than 50
THD	Less than 3%

Consult your Caterpillar dealer for available voltages.

LEHE3418-01

CAT ENGINE

G3520C SCAC, 4-stroke-cycle watercooled Gas	
Bore — mm (in)	170 (6.7)
Stroke — mm (in)	190 (7.5)
Displacement — L (cu in)	86 (5270)
Compression ratio	11.3:1
Aspiration	Separate Circuit Aftercooled
Fuel system	Low Pressure
Governor type	Electronic (ADEM III)

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
EC compliant — segregated AC/DC connections and wiring



TECHNICAL DATA

Generator Set — 1200 rpm/60 Hz/480 Volts		DM0882-00		DM0881-00	
G3520C LE Gas Generator Set Emission level (NOx) Aftercooler, two stage (JW in/SCAC)	g/bhp-hr Deg C Deg F	0.5 54 130		1.0 54 130	
Package Performance (5) Electrical Efficiency @ 1.0 pf Power rating @ 1.0 pf Power rating @ 0.8 pf Mechanical Power with 2 engine pumps and without fan	% ekW ekW kVA bkW hp	39.1 1627 1600 2000 1676 2248		40.8 1627 1600 2200 1676 2248	
Fuel Consumption (2) Low Heat Value (LHV) Fuel Input (ISO3046/1) 100% load without fan 75% load without fan 50% load without fan	kW Btu/min N•m³/hr scf/hr N•m³/hr scf/hr N•m³/hr scf/hr	4158 236,527 420 15,181 328 12,216 233 8703		3990 226,860 403 15,040 314 11,710 224 8343	
Altitude Capability (3) At 77° F ambient	M ft	790 2592		975 3200	
Cooling System Jacket water temperature (maximum outlet)	Deg C Deg F	99 210		99 210	
Exhaust System Combustion air inlet flow rate Exhaust stack gas temperature Exhaust gas flow rate Exhaust flange size — (internal diameter) System backpressure (maximum allowable)	N•m³/min scfm Deg C Deg F N•m³/min cfm mm in kPa	132 5064 403 758 139 12,296 360 14 5		123 4742 414 778 130 11,714 360 14 5	
Heat Rejection (4) Heat rejection jacket water (includes JW, oil cooler and A/C — stage 1). Heat rejection to A/C — stage 2 Heat rejection to exhaust (LHV to 350° F) Heat rejection to atmosphere from engine Heat rejection to atmosphere from generator	kW Btu/min kW Btu/min kW Btu/min kW Btu/min kW Btu/min	925 52,621 139 7926 916 41,670 112 6372 48 2712		855 48,608 127 7232 894 41,051 112 6372 48 2712	
Alternator Motor starting capability @ 30% voltage dip Frame Temperature rise	kVA Deg C	3663 868 105		3663 868 105	
Lube System Lube oil refill volume w/filter change	L Gal	541 141		541 141	
Emissions*** NOx CO HC (total) HC (non-methane) Exhaust O ₂ (dry)	g/bhp-hr g/bhp-hr g/bhp-hr g/bhp-hr %	0.5 2.24 7.1 1.07 10.3		1.0 1.96 4.87 0.74 9.8	

*Assume synchronous driver.

**Emissions data measurements 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 engine operating conditions of 25° C (77° F), 96.28 kPa (28.43 in Hg) and fuel having an LHV of 35.6 MJ/ N•m³ (905 Btu/cu ft) at 101.60 kPa (30.00 in Hg) absolute and 0° C (32° F). 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

(1) Ratings are based on pipeline natural gas having an LHV of 35.6 MJ/N•m³ (905 Btu/cu ft) and 80 Methane Number. For values in excess of the altitude, temperature, inlet/exhaust restriction, or for natural gas compositions different from the conditions listed, contact your local Caterpillar dealer.

(2) Ratings and fuel consumption are based on ISO3046/1 standard reference conditions of 25° C (77° F) and 100 kPa (29.61 in Hg) with 0,+5% fuel tolerance.

(3) Altitude capability is based on 2.5 kPa inlet and 5.0 kPa exhaust restriction.

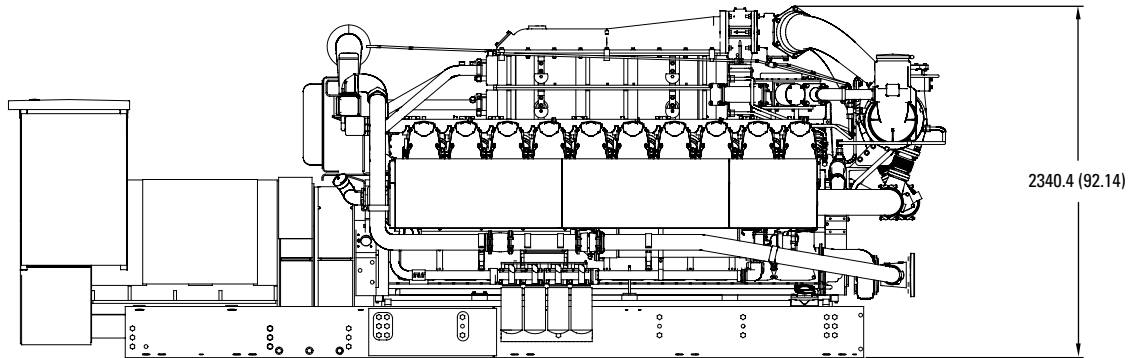
(4) Heat Rejection — values based on ISO3046/1 with fuel tolerance of ±2.5% and 2.5 kPa inlet and 5.0 kPa exhaust restriction.

(5) Efficiency of standard generator is used. For higher efficiency generators contact your local Caterpillar dealer.

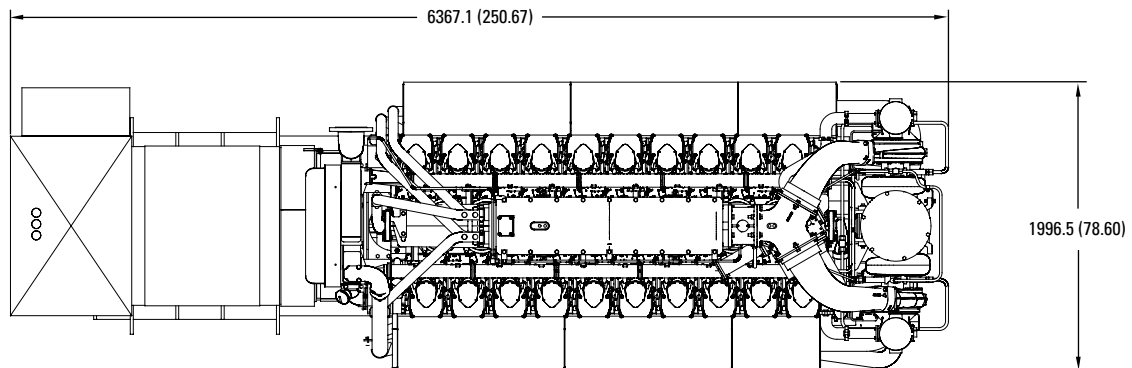
C O N T I N U O U S
P O W E R 1 6 0 0 e k W
6 0 H z



OPEN GENERATOR SET PACKAGE — SIDE VIEW



OPEN GENERATOR SET PACKAGE — TOP VIEW



Package Dimensions		
Length	6367.1 mm	250.67 in
Width	1996.5 mm	78.60 in
Height	2340.4 mm	92.14 in
Shipping Weight	18 350 kg	40,437 lb

Note: Do not use for installation design.
 See general dimension drawings
 for detail (Drawing # 245-8202).

www.CAT-ElectricPower.com

TMI Reference No.: DM0882, DM0881

U.S. sourced

LEHE3418-01 (04-04)

© 2004 Caterpillar
 All rights reserved.
 Printed in U.S.A.

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