

CONTINUOUS 1600 ekW @ 1200 RPM

60 Hz (Low Energy Fuel)

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

BENEFITS



EMISSIONS

- Meets most worldwide emissions requirements down to 0.5 g/bhp-hr NOx level without aftertreatment

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.



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.
- Factory-designed systems built at Caterpillar ISO9001:2000 certified facilities.



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

GAS GENERATOR SET CONTINUOUS POWER 1600 kW @ 1200 RPM – 60 Hz (LOW ENERGY FUEL)



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 ANSI/DN customer flange connections for JW inlet and outlet (ANSI 6 in/DN 150), SCAC system has Cat flanges	Remote radiator for JW and SCAC circuits, water level switch included but not wired, 480V electric driven fans with guard, motor control and disconnect switch
Engine Control Module	Fuel/air ratio control transient richening and turbo bypass 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	
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, 18 dBA, 25 dBA attenuation mufflers with ANSI style flanges, weld flanges, elbows, expanders, and flexible fittings
Fuel	Electronic air fuel ratio control (Engine Control Module) ADEM™ III based, electronic fuel control valve, throttle plate; throttle, electronically actuated and electronically controlled by ECM, low pressure pipeline natural gas fuel supply (105-350 mbar). Sized for 10.8 to 25.6 MJ/N·m³ (275 to 650 Btu/cu ft) dry pipeline natural gas.	Fuel filter (non-coalescent)
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 (ITSM)	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, two bearing, six lead, 3-phase sensing, platinum stator RTDs, Class H Insulation, 105° C rise, Caterpillar® 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	Oversize 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 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 (for low and medium voltage units), anti-vibration mounts (shipped loose)	
Starting/Charging	24 volt starting motor, 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) oversize 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.

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 (5248)
Compression ratio	11.3:1
Aspiration	Turbocharged 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

GAS GENERATOR SET CONTINUOUS POWER 1600 e kW @ 1200 RPM – 60 Hz (LOW ENERGY FUEL)



TECHNICAL DATA

Generator Set — 1200 rpm/60 Hz/480 Volts		DM5740	DM5739
G3520C Gas Generator Set (Low Energy Fuel) Emission level (NOx) Aftercooler SCAC	g/bhp-hr Deg C Deg F	0.5 54 130	1 54 130
Package Performance (1) Electrical efficiency @ 1.0 pf (5) Power rating @ 1.0 pf Power rating @ 0.8 pf Mechanical Power	ekW ekW kVA bkW hp	40.1% 1617 1600 2000 1665 2233	41.2% 1617 1600 2000 1665 2233
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•m ³ /hr scf/hr N•m ³ /hr scf/hr N•m ³ /hr scf/hr	4032 235,181 408 14,774 318 11,510 226 8364	3929 229,195 398 15,224 310 11,866 221 8438
Altitude Capability (3) At 25° C/77° F ambient	m ft	420 1378	880 2888
Cooling System Ambient air temperature Jacket Water temperature (maximum outlet)	Deg C Deg F Deg C Deg F	25 77 110 230	25 77 110 230
Exhaust System Combustion air inlet flow rate Exhaust gas stack temperature Exhaust gas flow rate Exhaust flange size (internal diameter)	N•m ³ /min scfm Deg C Deg F N•m ³ /min cfm mm in	113 4360 480 896 122 12,045 360 14.17	108 4157 490 914 117 11,657 360 14.17
Heat Rejection (4) Heat rejection to Jacket Water and AC — Stage 1 Heat rejection to oil cooler and AC — 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	676 38,427 339 19,298 1158 55,468 127 7210 47.7	657 37,363 332 18,866 1141 54,952 127 7210 47.7
Generator Motor starting capability @ 30% voltage dip* Frame Temperature rise	kVA Deg C	3663 868 105	3663 868 105
Lube System Refill volume with filter change for standard sump	L Gal	541 141	541 141
Emissions ** NOx CO (nominal) (6) HC (total) HC (non-methane) Exhaust O ₂ (dry)	g/bhp-hr g/bhp-hr g/bhp-hr g/bhp-hr %	0.5 2.5 5.34 0.81 8.5	1 2.5 4.27 0.65 8.1

*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 a LHV of 17.7 MJ/N•m³ (456 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

(1) Ratings are based on low energy methane-based gas having a LHV of 17.7 MJ/N•m³ (456 Btu/cu ft) and 120 MN without fan. For values in excess of the altitude, temperature, inlet/exhaust restriction, or 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 or 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 ±3% and 2.5 kPa inlet and 5.0 kPa exhaust restriction.

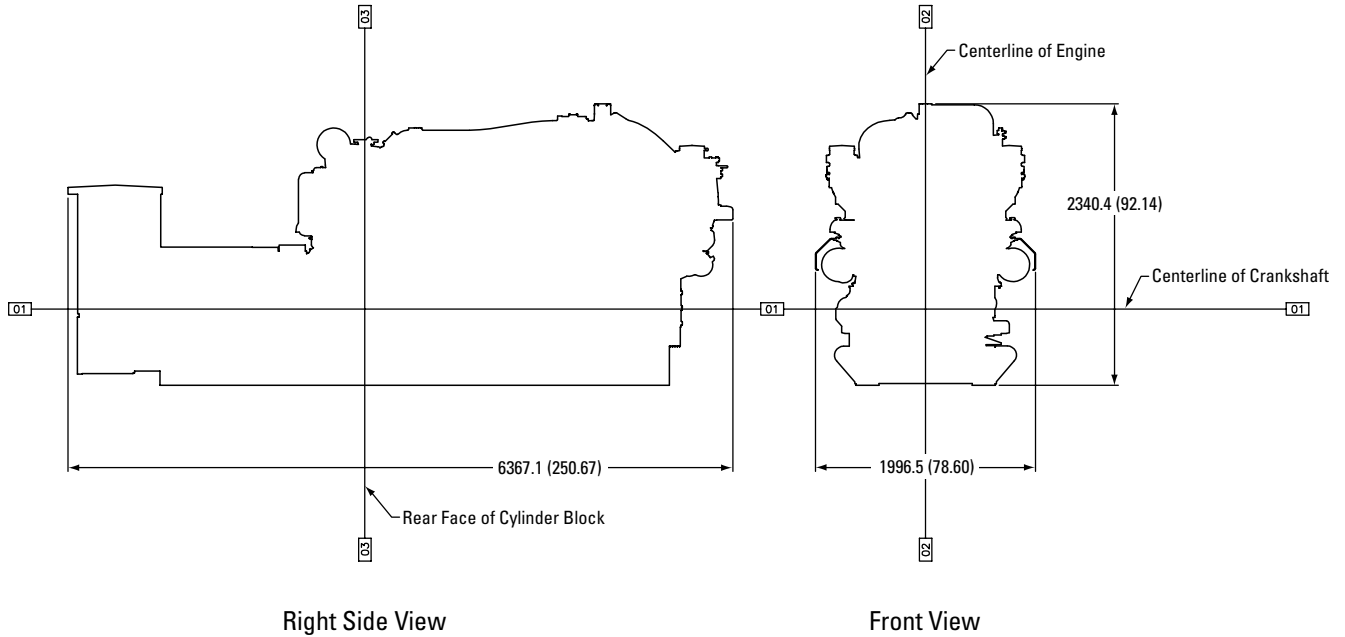
(5) Efficiency of standard generator is used. For higher efficiency generators, contact your local Caterpillar dealer.

(6) Nominal Value — emissions from a new engine during first 100 hrs of operation. Contact local dealer for more information.

**GAS GENERATOR SET
CONTINUOUS POWER
1600 e kW @ 1200 RPM – 60 Hz
(LOW ENERGY FUEL)**



OPEN GENERATOR SET PACKAGE



Right Side View

Front View

Package Dimensions		
Length	6367.1 mm	250.67 in
Width	1996.5 mm	78.60 in
Height	2465.1 mm	97.05 in
Shipping Weight	18 350 kg	40,437 lb

Note: Do not use for installation design.
See general dimension drawings
for detail (Drawing # 267-7367).