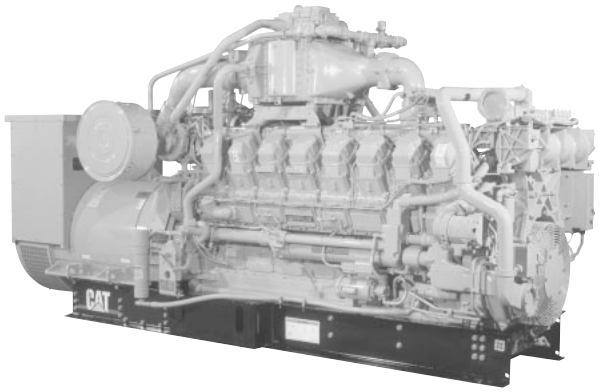
GAS GENERATOR SET

CATERPILLAR®



Shown with Optional Equipment

CONTINUOUS 1300 ekW 1400 ekW

60 Hz

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

FEATURES

EMISSIONS

- Meets most worldwide emissions requirements down to 0.5 g/bhp-hr NOx 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.

CAT® G3516B LE GAS ENGINE

- Robust design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on low pressure pipeline natural gas
- 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 PANELS

- Designed to meet individual customer needs: EMCP II+ provides full-featured power metering, purge cycle, staged shutdown logic, plus programmable protective relaying functions
- Remote control and monitor capability options

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FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Modular air cleaner, single element service indicator	
Cooling	Engine driven water pumps for jacket water and aftercooler circuit, jacket water and SCAC thermostats Cat flange connections	
Engine Control Module	Fuel/air ratio control Start/stop logic: gas purge cycle, stage 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	15 dBA muffler 18 dBA muffler Spark arresting muffler without companion flanges
Fuel	Electronic air fuel ratio control (Engine Control Module; ADEM III based), electronic fuel metering valve, gas shutoff valve, 24 volt energized-to-run	Fuel filter (non-coalescent) Gas train with 24V double gas shutoff valve, isolation valve, regulator, gas leak detection
Ignition	Electronic ignition system, individual cylinder timing and detonation control	
Integrated Thermo Sensing Module (ITSM)	24 thermocouples to input individual exhaust port temperatures and turbo inlet and outlet temperatures on both the turbine and compressor	CCM transfers CAT DataLink information through RS232 to customer terminal
Generator	Permanent magnet excitation, 105° C rise, single bearing, form wound, six lead, 3-phase sensing, platinum stator RTDs, class H Insulation, DVR with adjustable 1:1 or 2:1 Volts/Hz, bus bar termination, segregated low voltage wiring panel	Digital Voltage Regulator with KVAR/PF control Oversize and premium generators, bearing temperature detector Low voltage cable extension box
Circuit Breaker		IEC compliant, 3-pole and 4-pole
Governor	Electronic — Engine Control Module	Electronic load sharing (ship loose module)
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, prelube pump	Closed crankcase ventilation system
Mounting	Spring-type anti-vibration isolators	
Starting/Charging	60 amp charging alternator Dual 24 volt starting motor Batteries with rack and cables Batteries disconnect switch	Battery charger, air starting system, jacket water heaters, 12 kW (dual 6 kW) 480 V/3 phase/60 Hz heater element; 9 kW 480 V/3 phase 60 Hz with 230 V/1 phase/60 Hz circulation pump. Battery disconnects switch, oversize batteries
Other		EEC declaration of Incorporation CSA Certification (generator only)

SPECIFICATIONS

CAT SR4B GENERATOR

Frame size 697/824
Excitation . . . . . Permanent magnet
Pitch 0.6667
Number of poles 4
Number of bearings 1
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

G3516B SCAC, 4-stroke-cycle watercooled gas
Bore — mm (in) 170 (6.7)
Stroke — mm (in) 190 (7.5)
Displacement — L (cu in) 69 (4210)
Compression ratio 11.1:1
Aspiration . . . . . Turbocharged, Separate Circuit Aftercooled
Fuel system . . . . . Electronic Ignition System
Governor type . . . . . Electronic Engine Control Module

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

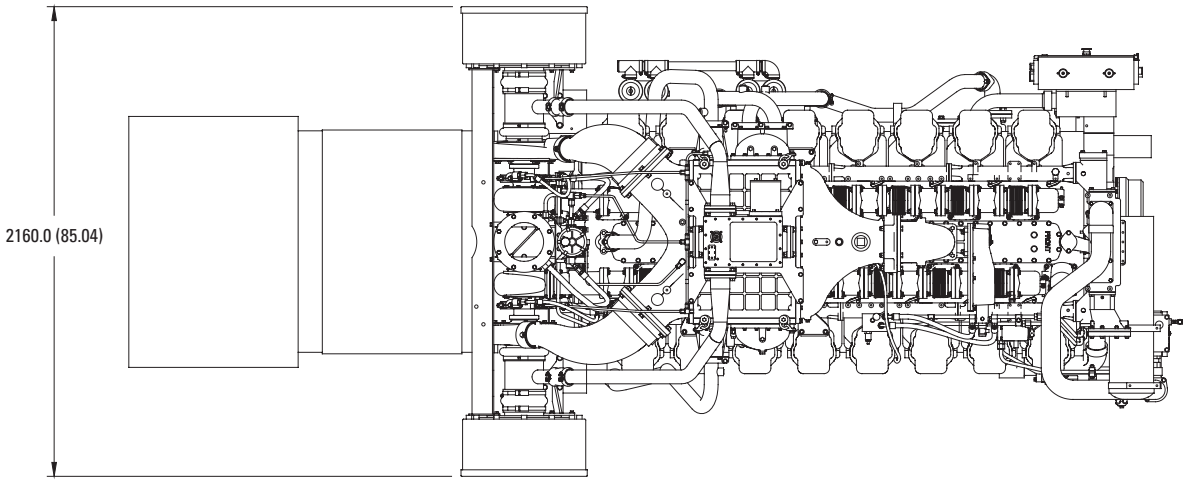
TECHNICAL DATA

Generator Set — 1800 rpm/650 Hz/480 Volts			DM5497		DM5495	
G3516B LE Gas Generator Set						
Emission level (NOx)	g/bhp-hr		1.0		1.0	
Aftercooler — SCAC temperature	Deg C	Deg F	32	90	54	130
Package Performance						
Power rating @ 1.0 pf (unity)	ekW		1410		1310	
Power rating @ 0.8 pf (3)	ekW		1400		1300	
	kVA		1750		1625	
Fuel Consumption (1)						
100% load with fan	$N•m^3/hr$	scf/hr	396	14,770	369	13,789
75% load with fan	$N•m^3/hr$	scf/hr	312	11,650	288	10,737
50% load with fan	$N•m^3/hr$	scf/hr	223	8321	208	7777
Electrical Efficiency	%		36.3		35.7	
Altitude Capability (2)						
At 25° C/77° F ambient	M	ft	965	3165	965	3165
Cooling System						
Ambient air temperature	Deg C	Deg F	25	77	25	77
Jacket water temperature (maximum outlet)	Deg C	Deg F	92	198	92	198
Exhaust System						
Combustion air inlet flow rate	$N•m^3/min$	scfm	110	4117	105	3926
Exhaust stack gas temperature	Deg C	Deg F	532	990	530	986
Exhaust gas flow rate	$N•m^3/min$	cfm	342	12,064	325	11,469
Exhaust flange size (internal diameter)	mm	in	203	8	203	8
Heat Balance (2) (3)						
Low Heat Value (LHV) fuel input	kW	Btu/min	4032	229,357	3764	214,100
Heat rejection to jacket water (total)	kW	Btu/min	783	45,511	764	43,448
Heat rejection to exhaust (LHV to 350° F)	kW	Btu/min	958	54,471	906	51,547
Heat rejection to A/C — Stage 2	kW	Btu/min	180	10,211	118	6717
Heat rejection to atmosphere from engine	kW	Btu/min	137	7793	136	7762
Heat rejection to atmosphere from generator	kW	Btu/min	44	2523	43	2432
Alternator						
Motor starting capability @ 30% voltage dip*	KVA		3271		2661	
Frame			824		697	
Temperature rise	Deg C		105		105	
Lube System						
Lube oil refill volume w/filter change for standard sump	L	Gal	401	106	401	106
Emissions**						
NOx	g/ghp-hr		1.0		1.0	
CO	g/ghp-hr		2.5		2.6	
HC (total)	g/ghp-hr		4.1		4.4	
HC (non-methane)	g/ghp-hr		0.62		0.66	
Exhaust O_2 (dry)	%		8.9		9.2	

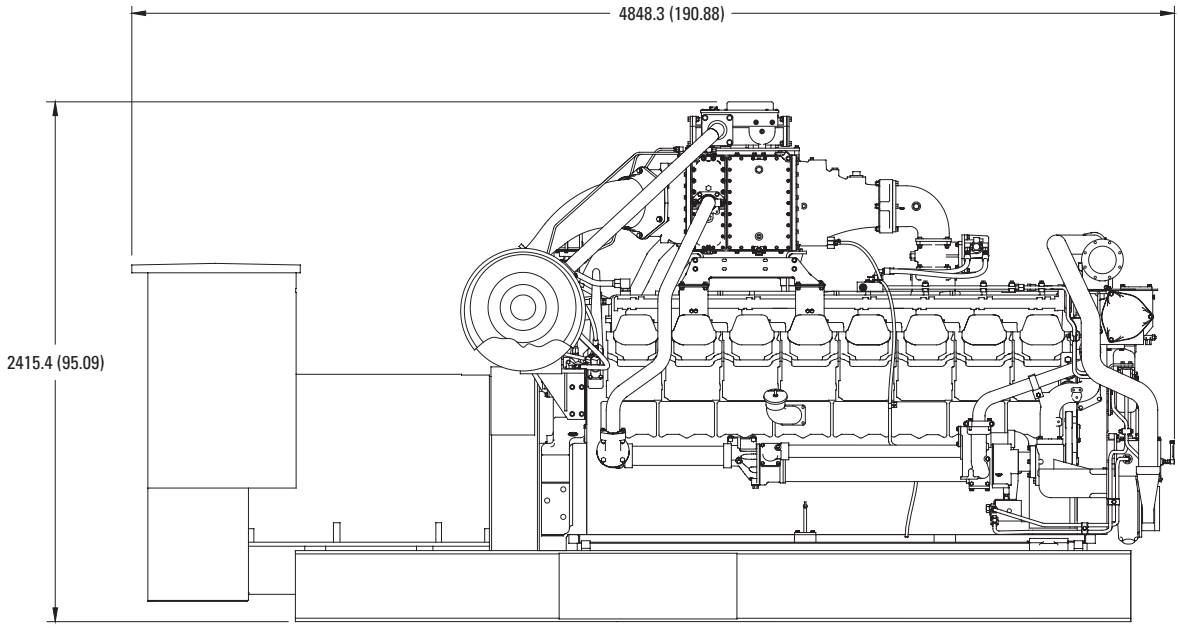
*Assumes synchronous driver.

**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 inches Hg) and fuel having a LHV of 35.6 $mJ/N•m^3$ (905 Btu/cu.ft) at 101.60 kPa (30.00 inches Hg) absolute and 0° C (32° F). Not to exceed emission data shown is subject to instrumentation, measurement, facility and engine fuel system adjustments.

824 GENERATOR FRAME
CONTINUOUS POWER GENERATOR SET PACKAGE — TOP VIEW



824 GENERATOR FRAME
CONTINUOUS POWER GENERATOR SET PACKAGE — SIDE VIEW



Package Dimensions with 824 Frame Generator		
Length	4848.3 mm	190.88 in
Width	2160.0 mm	85.04 in
Height	2415.4 mm	95.09 in
Shipping Weight	12 873.0 kg	28,380.0 lbs

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 212-9995).

TMI Reference No.: DM5495, DM5496, DM5497, DM5498

U.S. sourced

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