

GAS GENERATOR SET



Image shown may not reflect actual package

**LOW ENERGY GAS
CONTINUOUS
1030 ekW 1287 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.

BENEFITS

FULL RANGE OF ATTACHMENT

- Wide range of bolt-on system expansion attachments, factory designed and tested.
- Flexible packaging options for easy and cost effective installation.

PROVEN SYSTEM

- Fully prototype tested.
- Field proven in a wide range of applications worldwide.
- Certified torsional vibration analysis available.

WORLDWIDE PRODUCT SUPPORT

- Caterpillar dealers provide extensive post sales support including maintenance and repair agreements
- Caterpillar dealers have over 1,600 dealer branch stores operating in 200 countries
- The CAT[®] S.O.Ssm program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT[®] G3516 LEAN BURN GAS ENGINE

- Robust high speed diesel block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on low pressure gaseous fuel supply.
- Simple open chamber combustion system for reliability and fuel flexibility.

CAT SR4B GENERATOR

- Designed to match performance and output characteristics of Caterpillar gas engines
- Industry leading mechanical and electrical design
- High efficiency

CAT GAS ENGINE INSTRUMENT PANEL

- Simple user friendly interface for control and protection
- Engine monitoring



LEHE87



Factory Installed Standard & Optional Equipment

System	Standard	Optional
Air Inlet	Air cleaner; intermediate duty with service indicator (ship loose)	Air inlet adapter
Control	Instrument panel on engine	
Cooling	Jacket water circuit Engine driven JW pump; Thermostats and housing Combined aftercooler and oil cooler circuit Single-stage Engine driven AC pump; Second-stage thermostat and housing Corrosion resistant aftercooler	Raw water aftercooler Temperature regulator for high temperature cooling (option for a cogeneration system) Inlet/Outlet connections. Expansion and overflow tank Water level switch gauge
Exhaust	Wet exhaust	Flexible fitting; Elbow; Flange and Expander Muffler and spark-arresting muffler with companion flanges.
Fuel	Deltec natural gas carburetor Rear inlet connection Fuel system is sized for 17.7 to 23.6 MJ/Nm ³ (450 to 600 Btu/scf)	Gas filter Gas shutoff valve
Generator	SR4B generator, includes: PM excited, form wound with Class H insulation Stator RTDs Caterpillar's Digital Voltage Regulator (CDVR) including KVAR/PF control Space heater	Set mounted circuit breakers Medium voltage generator Bearing temperature detectors (RTD) Low voltage extension box Cable access box Air filter for generator European bus bar
Governing	Woodward 2301A Speed Control for standard emission	Ship-loose 2301A Speed Controller 2301A load sharing governor 2301D dual gain governor 8290 load sharing module
Ignition	Caterpillar Electronic Ignition System (E.I.S.) including detonation sensing timing	
Lubrication	Crankcase breather; top mounted Oil cooler Oil filter Shallow oil pan	Oil level regulator Oil pan drain valve Sump pump Prelube pump Lubricating oil
Mounting	330 mm, industrial type rail, engine-generator mounting	Spring type vibration Isolators Rubber type isolator pad
Protection	Shutoff solenoid; 24VDC, ETR Detonation shutdown	
Starting / Charging	Dual 24 VDC starting motors	Battery charger; Charging alternator Battery set, cable and rack Oversized battery; Jacket water heater;
General	Paint -- Caterpillar Yellow (engine and generator) Crankshaft vibration damper and guard Lifting eyes Operation and Maintenance Manuals; Parts Book.	EEC D.O.I certification Crankcase explosion relief valve Engine barring group

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SPECIFICATIONS

CAT LEAN BURN GAS ENGINE

G3516 LE SCAC 4-stroke-cycle, spark-ignited engine	
Number of Cylinders	V16
Bore --- mm (in)	170 (6.7)
Stroke --- mm (in)	190 (7.5)
Displacement --- L (cu in)	69 (4210)
Compression Ratio	11:01
Aspiration	Turbocharged Separate Circuit Aftercooled
Cooling Type	JW, combined SCAC & O/C
Fuel System	Low Pressure
Governor Type (516GEX1)	Woodward 2301A

CAT SR4B GENERATOR

Frame size	697
Excitation	Permanent Magnet
Pitch	0.7333
Number of poles	4
Number of bearings	1
Number of leads	6
Insulation	Class H
IP rating	Drip proof IP22
Alignment	Pilot shaft
Overspeed capability -- % of rated	125%
Waveform deviation line to line, no load	less than 3.0%
Voltage regulator	CDVR
Voltage level adjustment	+/- 5.0%
Voltage regulation, steady state	+/- 0.5%
Voltage regulation with 3% speed change	+/- 0.5%
Telephone Influence Factor (TIF)	less than 50

CAT GAS ENGINE INSTRUMENT PANEL

- Instrument panel includes:
 - Oil pressure
 - Water temperature
 - Oil pressure differential
 - Inlet manifold temperature
 - Service meter
 - Exhaust pyrometer and thermocouples
 - Intake manifold pressure gauge

Consult your Caterpillar dealer for available voltage

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



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TECHNICAL DATA

G3516 Gas Generator Set		DM 0761
Emission level (NOx)	mg/Nm ³	500
Aftercooler SCAC	Deg C	54
Package Performance (1)		
Power Rating @ 0.8 pf (w/ water pumps and w/o fan)	ekW Continuous	1030
Power Rating @ 0.8 pf (w/ water pumps and w/o fan)	kVA Continuous	1287
Power Rating @ 1.0 pf (w/ water pumps and w/o fan)	ekW Continuous	1039
Electric Efficiency @ 1.0 pf (ISO 3046/1) (2)	%	32
Mechanical Power (w/ water pumps and w/o fan)	bkW	1070
Fuel Consumption (3)		
100% load w/o fan	Nm ³ /hr	526
75% load w/o fan	Nm ³ /hr	433
50% load w/o fan	Nm ³ /hr	315
Altitude Capability		
At 25 Deg C (77 Deg F) ambient, above sea level	M	500
Cooling System		
Ambient air temperature	Deg C	25
Jacket water temperature (Maximum outlet)	Deg C	110
Exhaust System		
Combustion air inlet flow rate	Nm ³ /min	67.9
Exhaust stack gas temperature	Deg C	479
Exhaust gas flow rate	Nm ³ /min	78.8
Heat Rejection		
Heat rejection to jacket water	kW	817
Heat rejection to AC and OC	kW	316
Heat rejection to exhaust (LHV to 25 Deg C)	kW	929
Heat rejection to exhaust (LHV to 120 Deg C)	kW	701
Heat rejection to atmosphere from engine	kW	112
Heat rejection to atmosphere from generator	kW	40.7
Generator		
Frame		697
Temperature rise	Deg C	105
Motor starting capability @ 30% voltage dip (4)	skVA	2259
Emissions (5)		
NOx @ 5% O2 (dry)	mg/Nm ³	500
CO @ 5% O2 (dry)	mg/Nm ³	1119
THC @ 5% O2 (dry)	mg/Nm ³	1375
NMHC @ 5% O2 (dry)	mg/Nm ³	207
Exhaust O2 (dry)	%	6.5

DEFINITIONS AND CONDITIONS

(1) **Continuous** --- Maximum output available for an unlimited time

Ratings are based on pipeline natural gas having a Low Heat Value

(LHV) of 35.6 MJ/Nm³ (905 Btu/ft³) and 80 Caterpillar Methane Number.

For values in excess of altitude, ambient temperature, inlet/exhaust restriction, or different from the conditions listed, contact your local Caterpillar dealer.

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

(3) **Ratings and fuel consumption** are based on ISO3046/1 standard reference conditions of 25 deg C (77 deg F) of ambient temperature and 100 kPa (29.61 in Hg) of total barometric pressure, 30% relative humidity with 0, +5% fuel tolerance.

(6) Assume synchronous driver

(7) **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, NO_x. Data shown is based on steady state engine operating conditions of 25 deg C (77 deg F), 96.28 kPa (28.43 in Hg) and fuel having a LHV of 35.6 MJ/Nm³ (905 Btu/cu ft) and 80 Caterpillar Methane Number at 101.60 kPa (30.00 in Hg) absolute and 0 deg C (32 deg F). Emission data shown is subject to instrumentation, measurement, facility, and engine fuel system adjustment.

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DIMENSIONS

Package Dimensions		
Length	4906.0 mm	193.15 in
Width	2155.4 mm	84.86 in
Height	2051.2 mm	80.76 in
Approx. Shipping Weight	11 813 kg	26 043 lb

Note: Do not use for installation design.
See general dimension drawings
for detail (Drawing # 310-0968).

Performance Number: DM0761
Feature Code: 516GE05
Generator Argt: 144-1814
Source: US Sourced

www.cat-electricpower.com

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