



Image shown may not reflect actual package

## **G3516A LOW ENERGY GAS DRY EXHAUST MANIFOLD CONTINUOUS 1100 ekW 1375 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.

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### **FEATURES**

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#### **FULL RANGE OF ATTACHMENTS**

- 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**

- Cat<sup>®</sup> dealers provide extensive post sales support including maintenance and repair agreement
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Cat S•O•S<sup>SM</sup> program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

#### **CAT G3516A LEAN BURN GAS ENGINE**

- Robust high speed diesel block design provides prolonged life and lower owning 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 Cat gas engines
- Industry leading mechanical and electrical design
- High efficiency

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## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
<b>Air Inlet</b>	Air cleaner, intermediate duty with service indicator (ship loose)	Air inlet adapter
<b>Control Panel</b>	Instrument Panel on engine	Wall mount EMCP II+
<b>Cooling</b>	Separate jacket water and aftercooler circuits High temp engine driven JW pump. Thermostats and housing Engine driven AC pump	Inlet/Outlet connection
<b>Exhaust</b>	Dry exhaust	Flexible fitting: Elbow, Flange and Expander Muffler and spark-arresting muffler with comparison flanges
<b>Fuel</b>	Customer or Dealer supplied air -fuel ratio control Rear inlet connection	
<b>Generator</b>	SR4B generator, includes: Permanent Magnet Excitation Form Wound Stator Stator RTDs Cat Digital Voltage Regulator (CDVR) with PF/kVAR with PF/kVAR control Space heater	Set mounted circuit breakers Medium or high voltage Bearing temperature detectors (RTD) Low voltage extension box Cable access box Air filter for generator European Bus Bar
<b>Governing</b>	No speed control as standard	Ship-loose 2301A Speed Controller 2301A load sharing governor 2301D dual gain governor 8290 load sharing module
<b>Ignition</b>	Cat Electronic Ignition System (E.I.S) including detonation sensing timing	
<b>Lubrication</b>	Crankcase breather Oil cooler Oil filter Shallow (383 Liter) oil pan	Oil level regulator Oil pan drain valve Sump pump Deep sump (780 Liter) oil pan Prelube pump Lubricating oil
<b>Mounting</b>	330 mm industrial type rail, engine-generator mounting	Spring-type anti-vibration Rubber type isolator pad
<b>Protection</b>	Detonation shutdown	As provided by EMCPII+ Shutoff solenoid, 24VDC, ETR
<b>Starting / Charging</b>	Dual 24V starting motors	Battery charger, charging alternator Battery set, cable and rack Oversized battery Jacket water heater
<b>General</b>	Paint - Caterpillar Yellow (engine and generator) Crankshaft vibration damper and guard Lifting eyes Operation & Maintenance Manuals, Parts book	EEC D.O.I certification Crankcase explosion relief valve Engine barring group

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## SPECIFICATIONS

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### CAT LEAN BURN GAS ENGINE

G3516A 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	11.0:1
Aspiration	Turbocharged Separate Circuit Aftercooled
Cooling Type	JW circuit
	Separate combined dual AC+O/C circuit
Fuel System	Low Pressure

### CAT SR4B GENERATOR

Frame size	824
Excitation	Permanent Magnet
Pitch	2/3 pitch
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

**Consult your Cat dealer for available voltage**

### CAT EMCPII+ CONTROL PANEL (OPTIONAL)

- Power by 24 volts DC
- NEMA 12, IP44 dust-proof enclosure
- Lockable hinged door
- Single-location customer connection
- Auto start/stop control switch
- Voltage adjustment potentiometer
- True RMS AC metering, 3 phase
- Purge cycle and staged shutdown logic
- Digital indication for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - DC voltage
  - L-L volts, L-N volts, phase amps, Hz, ekW, kVA, kVAR, kWhr, %kW, pf
  - System diagnostic codes
- Shutdown with indicating lights:
  - Low oil pressure
  - High coolant temperature
  - High oil temperature
  - Overspeed
  - Overcrank
  - Emergency stop
  - High inlet air temperature (for TA engine only)
  - Detonation sensitive timing (for LE engine only)
- Programmable protective relaying functions:
  - Under / Over voltage
  - Under / Over frequency
  - Overcurrent
  - Reverse power
- Spare indicator LEDs
- Spare alarm/shutdown inputs

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## TECHNICAL DATA

<b>G3516A Gas Generator Set</b>		
Emission level (NO <sub>x</sub> )	mg/Nm <sup>3</sup>	500
Aftercooler SCAC	Deg C	43
<b>Package Performance <sup>(1)</sup></b>		
Mechanical Power (with water pumps and w/o fan)	bkW Continuous	1136
Power Rating @ 0.8 pf (with water pumps and w/o fan)	ekW Continuous	1100
Power Rating @ 1.0 pf (with water pumps and w/o fan)	ekW Continuous	1112
Electric Efficiency @ 1.0 pf (ISO 3046/1) <sup>(2)</sup>	%	36.5
Thermal Efficiency (Jacket Heat+Exh-Heat to 120°C)	%	45.3
Thermal Efficiency (Jacket Heat+Exh-Heat to 25°C)	%	53.5
<b>Fuel Consumption <sup>(3)</sup></b>		
100% load with water pumps and w/o fan	MJ/bkW-hr	9.51
<b>Altitude Capability</b>		
At 25 Deg C (77 Deg F) ambient, above sea level <sup>(4)</sup>	(m)	250
<b>Cooling System-Required</b>		
Jacket water temperature ( Maximum outlet )	Deg C	110
<b>Exhaust System at full load</b>		
Combustion air inlet flow rate (wet)	Nm <sup>3</sup> /min	72.7
Exhaust stack gas temperature	Deg C	502
Exhaust gas flow rate (wet)	Nm <sup>3</sup> /min	83.7
<b>Heat Rejection <sup>(6)</sup></b>		
Heat rejection to jacket water	kW	462
Heat rejection to AC and OC	kW	259
Heat rejection to exhaust (LHV to 25 Deg C)	kW	1032
<b>Generator</b>		
Frame		824
Temperature rise	Deg C	105
Motor starting capability @ 30% voltage dip 0.4 PF	skVA	2637
<b>Emissions <sup>(5)</sup></b>		
NO <sub>x</sub> @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup>	500
CO @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup>	2252
THC @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup>	1758
NMHC @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup>	264
Exhaust O <sub>2</sub> (dry)	%	7.7

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## RATING DEFINITIONS AND CONDITIONS

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

**Ratings** are based on pipeline Low Energy gas having a Low Heat Value (LHV) of 17.7-23.6 MJ/Nm<sup>3</sup> and minimum Cat Methane Number of 130 at minimum fuel pressure of 10 kPag. For values in excess of altitude, ambient temperature, inlet/exhaust restriction, or different from the conditions listed, contact your local Cat dealer.

(2) **Efficiency** of standard generator is used. For higher efficiency generators, contact your local Cat 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% humidity with 0, +5% fuel tolerance.

(4) For site specific power, contact your Cat Dealer.

(5) **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<sub>x</sub>. Data shown is based on steady state engine operating conditions of 25 deg C (77 deg F), 96.28 kPa (28.43 in Hg). Emission data is Cat "not to exceed" data and includes a tolerance factor for engine facility and instrumentation variations.

(6) **Heat Rejection** – Data based on nominal tolerances.

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## DIMENSIONS

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Package Dimensions		
Length	4841 mm	190.6 in
Width	1948 mm	76.7 in
Height	2438 mm	96.0 in
Est. Shipping Weight	18 350 kg	40 455 lb

Note: Do not use for installation design.  
General dimensions only.

Performance Number : S02-35-03 (01)  
Part Code: LA8058  
Generator Arr:: 144-1820  
Source: US Sourced  
LEHE0233-01 (11-10)

[www.Cat-ElectricPower.com](http://www.Cat-ElectricPower.com)

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