**FEATURES**

**Engine Design**
- Proven reliability and durability
- Ability to burn a wide spectrum of gaseous fuels
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range

**Emissions**
Meets U.S. EPA Spark Ignited Stationary NSPS Emissions for 2007/8

**Advanced Digital Engine Management**
ADEM A3 control system providing integrated ignition, speed governing, protection, and controls, including detonation-sensitive variable ignition timing. ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

**Lean Burn Engine Technology**
Lean-burn engines operate with large amounts of excess air. The excess air absorbs heat during combustion reducing the combustion temperature and pressure, greatly reducing levels of NOx. Lean-burn design also provides longer component life and excellent fuel consumption.

**Ease of Operation**
Side covers on block allow for inspection of internal components

**Full Range of Attachments**
Large variety of factory-installed engine attachments reduces packaging time

**Testing**
Every engine is full-load tested to ensure proper engine performance.

**Gas Engine Rating Pro**
GERP is a PC-based program designed to provide site performance capabilities for Cat® natural gas engines for the gas compression industry. GERP provides engine data for your site’s altitude, ambient temperature, fuel, engine coolant heat rejection, performance data, installation drawings, spec sheets, and pump curves.

**Product Support Offered Through Global Cat Dealer Network**
More than 2,200 dealer outlets
Cat factory-trained dealer technicians service every aspect of your petroleum engine
Cat parts and labor warranty
Preventive maintenance agreements available for repair-before-failure options
S•O•SSM program matches your oil and coolant samples against Caterpillar set standards to determine:
- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

**Over 80 Years of Engine Manufacturing Experience**
Over 60 years of natural gas engine production
Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.
- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

**Web Site**
For all your petroleum power requirements, visit www.catoilandgas.cat.com.
STANDARD EQUIPMENT

Air Inlet System
Remote air inlet adapters

Charging System
Battery chargers

Cooling System
Jacket water thermostats and housing — full open temperature 98°C (208°F)
Jacket water pump — gear driven, centrifugal, non-self-priming
Aftercooler water pump — gear driven, centrifugal, non-self-priming
Aftercooler core for sea-air atmosphere
Aftercooler thermostats and housing — full open temperature 35°C (95°F)
Aftercooler — raw water, cleanable

Exhaust System
Exhaust manifolds — watercooled

Flywheels & Flywheel Housings
SAE No. 00 flywheel
SAE No. 00 flywheel housing
SAE standard rotation

Fuel System
Gas pressure regulator
Natural gas carburetor
Fuel gas shut-off valve (24V DC)

Instrumentation
Advisor panel
Advisor interconnect harness

Lubrication System
Crankcase breathers — top mounted
Oil cooler
Oil filter — RH
Oil pan — shallow
Oil sampling valve
Turbo oil accumulator

Mounting System
Rails, engine mounting

Power Take-Offs
Front housing — two-sided
Front lower LH accessory drive

Protection System
Electronic shutoff system
Gas shutoff valve

General
Paint — Cat yellow
Vibration damper and guard

OPTIONAL EQUIPMENT

Air Inlet System
Remote air inlet adapters

Charging System
Battery chargers

Cooling System
Aftercooler core
Thermostatic valves
Connections
Expansion and overflow tank
Water level switch gauge

European Certifications
European Union certifications

Exhaust System
Flexible fittings
Elbows
Flanges
Flange and exhaust expanders
Mufflers

Fuel System
Fuel filter

Instrumentation
Customer communication modules

Lubrication System
Oil filters — duplex
Oil pan drain
Oil level regulator
Sump pumps
Lubricating oil

Mounting System
Rails
Vibration isolators

Power Take-Offs
Auxiliary drive shaft
Auxiliary drive pulleys
Front stub shaft
Pulleys

Protection System
Gas valve
Explosion relief valves

Starting System
Air pressure regulator
Air silencer
JW heaters
Battery sets (24-volt dry)
Battery accessories

General
Flywheel guard removal
Engine barring group
Premium 8:1 pistons
## TECHNICAL DATA

### G3508 LE Gas Petroleum Engine — 1400 rpm

<table>
<thead>
<tr>
<th></th>
<th>2 g NOx NTE Rating</th>
<th>DM8621-2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Engine Power</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>bkW (bhp)</td>
<td>500 (670)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>bkW (bhp)</td>
<td>375 (502)</td>
</tr>
<tr>
<td><strong>Engine Speed</strong></td>
<td>rpm</td>
<td></td>
</tr>
<tr>
<td>Max Altitude @ Rated Torque and 38°C (100°F)</td>
<td>1400</td>
<td></td>
</tr>
<tr>
<td>Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)</td>
<td>m (ft)</td>
<td>609.6 (2000)</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>25</td>
</tr>
<tr>
<td><strong>SCAC Temperature</strong></td>
<td>°C (°F)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>54 (130)</td>
</tr>
<tr>
<td><strong>Emissions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>2.68 (2)</td>
</tr>
<tr>
<td>CO</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>2.47 (1.84)</td>
</tr>
<tr>
<td>CO₂</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>627 (468)</td>
</tr>
<tr>
<td>VOC**</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>0.41 (0.3)</td>
</tr>
<tr>
<td><strong>Fuel Consumption</strong>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>MJ/bkW-hr (Btu/bhp-hr)</td>
<td>10.63 (7510)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>MJ/bkW-hr (Btu/bhp-hr)</td>
<td>11.22 (7936)</td>
</tr>
<tr>
<td><strong>Heat Balance</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Jacket Water</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>bkW (Btu/min)</td>
<td>319.8 (18,204)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>bkW (Btu/min)</td>
<td>282 (16,013)</td>
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<tr>
<td>Heat Rejection to Aftercooler</td>
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<td></td>
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<tr>
<td>@ 100% Load</td>
<td>bkW (Btu/min)</td>
<td>80 (4555)</td>
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<tr>
<td>@ 75% Load</td>
<td>bkW (Btu/min)</td>
<td>56.1 (3191)</td>
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<tr>
<td>Heat Rejection to Exhaust</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>bkW (Btu/mn)</td>
<td>481.9 (27,406)</td>
</tr>
<tr>
<td>(LHV to 77° F / 25°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 75% Load (LHV to 77°)</td>
<td>bkW (Btu/mn)</td>
<td>372.8 (21,203)</td>
</tr>
<tr>
<td>(LHV to 77° F / 25°C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exhaust System</strong></td>
<td></td>
<td></td>
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<tr>
<td>Exhaust Gas Flow Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(@ stack temp., 14.5 psig)</td>
<td>m³/min (cfm)</td>
<td>115.7 (4086)</td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>m³/min (cfm)</td>
<td>89.57 (3163)</td>
</tr>
<tr>
<td>Exhaust Stack Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>°C (°F)</td>
<td>529 (985)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>°C (°F)</td>
<td>525 (977)</td>
</tr>
<tr>
<td><strong>Intake System</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air Inlet Flow Rate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>m³/min (scfm)</td>
<td>39.53 (1396)</td>
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<tr>
<td>@ 75% Load</td>
<td>m³/min (scfm)</td>
<td>30.72 (1085)</td>
</tr>
<tr>
<td><strong>Gas Pressure</strong></td>
<td>kPag (psig)</td>
<td>242-276 (35-40)</td>
</tr>
</tbody>
</table>

*at 100% load and speed, all values are listed as not to exceed
**Volatile organic compounds as defined in U.S. EPA 40 CFR 60, subpart JJJJ
***ISO 3046/1
G3508 LE   GAS PETROLEUM ENGINE
500 bkW (670 bhp)

GAS PETROLEUM ENGINE

Performance Number: DM8621-02
LEHW0034-01 (2-10)

DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>mm (in)</th>
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<tbody>
<tr>
<td>Length</td>
<td>2440.0 (96.06)</td>
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<tr>
<td>Width</td>
<td>1768.4 (69.62)</td>
</tr>
<tr>
<td>Height</td>
<td>1921.2 (75.64)</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>5420 (11,950)</td>
</tr>
</tbody>
</table>

Note: General configuration not to be used for installation. See general dimension drawings for detail (drawing #315-3136).
Dimensions are in mm (inches).

RATING DEFINITIONS AND CONDITIONS

Engine performance is obtained in accordance with SAE J1995, ISO3046/1, BS5514/1, and DIN6271/1 standards.

Transient response data is acquired from an engine/generator combination at normal operating temperature and in accordance with ISO3046/1 standard ambient conditions. Also in accordance with SAE J1995, BS5514/1, and DIN6271/1 standard reference conditions.

Conditions: Power for gas engines is based on fuel having an LHV of 33.74 kJ/L (905 Btu/cu ft) at 101 kPa (29.91 in. Hg) and 15° C (59° F). Fuel rate is based on a cubic meter at 100 kPa (29.61 in. Hg) and 15.6° C (60.1° F). Air flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and 25° C (77° F). Exhaust flow is based on a cubic foot at 100 kPa (29.61 in. Hg) and stack temperature.

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

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