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•S™ 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
Air cleaner — intermediate-duty with service indicator

Cooling System
High temperature circuit (engine jacket + oil cooler):
  – coolant pump
  – thermostats and housing
Low temperature circuit (aftercooler):
  – coolant pump
  – thermostats and housing
  – aftercooler core for salt air atmosphere

Exhaust System
Watercooled exhaust manifolds
Crankcase breather — top mounted

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

Fuel System
Gas pressure regulator
Natural gas carburetor

Instrumentation
Advisor panel

Lubrication System
Oil cooler
Oil filter — RH
Oil bypass filter (TA or NA engines only)
Oil pan — shallow
Oil sampling valve
Turbo oil accumulator

Mounting System
Rails, engine mounting — 254 mm (10 in.)

Protection System
Electronic shutoff system
Gas shutoff valve

General
Paint — Cat yellow
Vibration damper and guard — dual 484 mm (23 in.)

OPTIONAL EQUIPMENT

Air Inlet System
Remote air inlet adapters
Precleaners

Charging System
Battery chargers
Charging alternator

Cooling System
Cleanable aftercooler core
Connection flanges
Expansion and overflow tank
Water level switch gauge

Exhaust System
Flexible fittings
Elbows
Connection flanges
Exhaust expanders
Rain cap (NA engine only)
Mufflers

Fuel System
Low pressure gas conversions
Propane gas valve and jet kits
Fuel filter
Air/fuel ratio control

Instrumentation
PL1000 communications modules

Lubrication System
Oil bypass filter removal
Oil pan accessories
Sump pump
Air prelube pump
Manual prelube pump
Lubricating oil

Mounting System
Rails
Vibration isolators

Power Take-Offs
Front accessory drives
Auxiliary drive shafts and pulleys
Front stub shaft
Pulleys

Protection System
Crankcase explosion relief valves

Starting System
Air starting motor
Air pressure regulator
Air silencer
Electric air start controls
Electric starting motors — dual 24-volt
Battery sets (24-volt dry), cables, and rack

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

### G3512 LE Gas Petroleum Engine

<table>
<thead>
<tr>
<th>Fuel System</th>
<th>2 g NOx NTE Rating DM8617-01</th>
<th>2 g NOx NTE Rating DM8619-01</th>
</tr>
</thead>
</table>

### Engine Power

<table>
<thead>
<tr>
<th>@ 100% Load</th>
<th>bkW (bhp)</th>
<th>749 (1004)</th>
<th>641 (860)</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 75% Load</td>
<td>bkW (bhp)</td>
<td>562 (754)</td>
<td>481 (645)</td>
</tr>
</tbody>
</table>

### Engine Speed

<table>
<thead>
<tr>
<th>Max Altitude @ Rated Torque and 38°C (100°F)</th>
<th>rpm</th>
<th>1400</th>
<th>1200</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Altitude @ Max Altitude, Rated Torque, and 38°C (100°F)</td>
<td>m (ft)</td>
<td>914.4 (3000)</td>
<td>609.6 (2000)</td>
</tr>
<tr>
<td>SCAC Temperature</td>
<td>°C (°F)</td>
<td>54 (130)</td>
<td>54 (130)</td>
</tr>
</tbody>
</table>

### Emissions*

| NOx | g/bkW-hr (g/bhp-hr) | 2.68 (2) | 2.68 (2) |
| CO  | g/bkW-hr (g/bhp-hr) | 2.83 (2.11) | 2.64 (1.97) |
| CO2 | g/bkW-hr (g/bhp-hr) | 644 (481) | 634 (473) |
| VOC** | g/bkW-hr (g/bhp-hr) | 0.4 (0.3) | 0.39 (0.29) |

### Fuel Consumption***

<table>
<thead>
<tr>
<th>@ 100% Load</th>
<th>MJ/bkW-hr (Btu/bhp-hr)</th>
<th>10.42 (7368)</th>
<th>10.47 (7402)</th>
</tr>
</thead>
<tbody>
<tr>
<td>@ 75% Load</td>
<td>MJ/bkW-hr (Btu/bhp-hr)</td>
<td>10.84 (7665)</td>
<td>10.86 (7676)</td>
</tr>
</tbody>
</table>

### Heat Balance

<table>
<thead>
<tr>
<th>Heat Rejection to Jacket Water</th>
<th>@ 100% Load</th>
<th>bkW (Btu/mn)</th>
<th>541.6 (30,802)</th>
<th>487.4 (27,715)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat Rejection to Aftercooler</td>
<td>@ 100% Load</td>
<td>bkW (Btu/mn)</td>
<td>145.2 (8260)</td>
<td>115.1 (6551)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>bkW (Btu/mn)</td>
<td>88.0 (5006)</td>
<td>68.1 (3875)</td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Exhaust</td>
<td>@ 100% Load</td>
<td>LHV to 25° C (77° F)</td>
<td>bkW (Btu/mn)</td>
<td>605 (34,406)</td>
</tr>
<tr>
<td>@ 75% Load</td>
<td>LHV to 25° C (77° F)</td>
<td>bkW (Btu/mn)</td>
<td>462 (26,284)</td>
<td>376.2 (21,397)</td>
</tr>
</tbody>
</table>

### Exhaust System

<table>
<thead>
<tr>
<th>Exhaust Gas Flow Rate</th>
<th>m³/min (cfm)</th>
<th>160.4 (5666)</th>
<th>135.6 (4790)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exhaust Stack Temperature</td>
<td>°C (°F)</td>
<td>445.6 (834)</td>
<td>439.4 (823)</td>
</tr>
</tbody>
</table>

### Intake System

<table>
<thead>
<tr>
<th>Air Inlet Flow Rate</th>
<th>m³/min (scfm)</th>
<th>61.5 (2172)</th>
<th>52.39 (1850)</th>
</tr>
</thead>
</table>

### Gas Pressure

| kPag (psig) | 241.5-275.8 (35-40) | 241.5-275.8 (35-40) |

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*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
G3512 LE   GAS PETROLEUM ENGINE
641 & 749 bkW (860 & 1004 bhp)

DIMENSIONS

<table>
<thead>
<tr>
<th></th>
<th>mm (in)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>2786.7</td>
<td>(109.71)</td>
</tr>
<tr>
<td>Width</td>
<td>1790.9</td>
<td>(70.51)</td>
</tr>
<tr>
<td>Height</td>
<td>1863.7</td>
<td>(73.37)</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>6677</td>
<td>(14,720)</td>
</tr>
</tbody>
</table>

Note: General configuration not to be used for installation. See general dimension drawings for detail (drawing #294-0137).
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.