**CAT® ENGINE SPECIFICATIONS**

**V-16, 4-Stroke-Cycle**
- **Bore**: 170 mm (6.7 in.)
- **Stroke**: 190 mm (7.5 in.)
- **Displacement**: 69.3 L (4230 cu. in.)
- **Aspiration**: Turbocharged-2 Stage Aftercooled

**Digital Engine Management**
- Governor and Protection: Electronic (ADEM™ A3)
- Combustion: Low Emission (Lean Burn)

**Engine Weight, net dry (approx)**: 8401 kg (18,520 lb)

**Power Density**: 8.2 kg/kW (13.4 lb/hp)

**Power per Displacement**: 19.9 bhp/L

**Total Cooling System Capacity**: 221.5 L (58.5 gal)
- **Jacket Water**: 204.4 L (54 gal)
- **SCAC**: 17 L (4.5 gal)
- **Lube Oil System (refill)**: 424 L (112 gal)

**Oil Change Interval**: 1000 hour
- Rotation (from flywheel end): Counterclockwise

**Flywheel and Flywheel Housing**: SAE No. 00
- **Flywheel Teeth**: 183

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**FEATURES**

**Engine Design**
- Built on G3500 LE 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 at lower site air densities (high altitude/hot ambient temperatures)
- Higher power density improves fleet management
- Quality engine diagnostics
- Detonation-sensitive timing control for individual cylinders

**Ultra Lean Burn Technology (ULB)**
ULB technology uses an advanced control system, a better turbo match, improved air and fuel mixing, and a more sophisticated combustion recipe to provide:
- Lowest engine-out emissions
- Highest fuel efficiency
- Improved altitude and speed turndown
- Stable load acceptance and load rejection

**Emissions**
- Meets U.S. EPA Spark Ignited Stationary NSPS emissions for 2010
- Lean air/fuel mixture provides best available emissions and fuel efficiency for engines of this bore size

**Advanced Digital Engine Management**
ADEM A3 engine management system integrates speed control, air/fuel ratio control, and ignition/detonation controls into a complete engine management system.
ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

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

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**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
Axial flow air cleaners
Service indicator
Cleanable

Cooling System
Two-stage charge air cooling:
  First stage — JW + OC + 1st stage AC
  Second stage — 2nd stage AC
Engine cooling and charge air cooling thermostats

Exhaust System
Dry exhaust manifolds and turbocharger housings

Flywheels and Housings
SAE 00 flywheel
SAE 00 flywheel housing
SAE standard rotation

Fuel System
Electronic fuel metering valve
Requires 7-50 psig gas supply
Gas pressure regulator
Gas shutoff valve

Instrumentation
Remote-mounted Advisor control panel
Interconnect harness

Lube System
Top-mounted crankcase breathers
Oil cooler
Oil filter and oil sampling valve
Drain valve
Turbo oil accumulator
API B16.3 approved gas/air-driven pre-lube system

Torsional Vibration Analysis
Caterpillar provided
Required through first quarter 2010

Mounting
Rails

OPTIONAL EQUIPMENT

Air Inlet System
Rectangular air inlet adapter
Circular air inlet adapter

Charging System
Battery Charger 20 amp

Connections
Mechanical joint assembly
Inlet connection

Exhaust System
Flexible fittings available at first production build
Elbows and mufflers

Control Panels
4" LCD Advisor display panel
Shipped loose

Starting System
90 psi TDI starter
150 psi TDI starter

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

Protection System — Display/Alarm/Shutdown
Low oil pressure
Oil filter differential pressure
High fuel or oil temperature
Engine oil to engine coolant
Differential temperature
High coolant temperature
Engine speed
Engine load
Battery voltage
Detonation
Manifold air temperature
Coolant JW inlet/outlet pressure
Left turbo inlet temperature
Right turbo inlet temperature
Cylinder port temperature

Protection System — Display Only
Service hours
Oxygen level

General
Paint — Cat yellow
Dual 23" vibration damper with guard
CSA Certification, Class 1 Division 2 Groups C and D

Instrumentation
Optional interconnect harness

Lube System
Shipped with lube oil

Mounting System
Rails

Power Take-Offs
Front stub shaft

Literature
Options available

Packing
## TECHNICAL DATA

### G3516B LE Gas Petroleum Engine — 1400 rpm***

<table>
<thead>
<tr>
<th>Fuel System</th>
<th>0.5 g NOx NTE Rating</th>
<th>1.0 g NOx NTE Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engine Power</td>
<td></td>
<td>DM8800-03</td>
</tr>
<tr>
<td>@ 100% Load</td>
<td>bkW (bhp)</td>
<td>1029 (1380)</td>
</tr>
<tr>
<td>Engine Speed</td>
<td></td>
<td>1400</td>
</tr>
<tr>
<td>Max Altitude @ Rated Torque and 38°C (100°F)</td>
<td>m (ft)</td>
<td>1219.2 (4000)</td>
</tr>
<tr>
<td>Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)</td>
<td>%</td>
<td>25</td>
</tr>
<tr>
<td>Aftercooler Temperature</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage 1 (JW)</td>
<td>°C (°F)</td>
<td>98.9 (210)</td>
</tr>
<tr>
<td>Stage 2 (SCAC)</td>
<td>°C (°F)</td>
<td>54 (130)</td>
</tr>
<tr>
<td>Emissions*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOx</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>0.67 (0.50)</td>
</tr>
<tr>
<td>CO</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>3.26 (2.43)</td>
</tr>
<tr>
<td>CO₂</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>635 (474)</td>
</tr>
<tr>
<td>VOC**</td>
<td>g/bkW-hr (g/bhp-hr)</td>
<td>0.64 (0.48)</td>
</tr>
<tr>
<td>Fuel Consumption***</td>
<td>@ 100% Load</td>
<td>MJ/bkW-hr (Btu/bhp-hr)</td>
</tr>
<tr>
<td>Heat Balance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat Rejection to Jacket Water</td>
<td>@ 100% Load</td>
<td></td>
</tr>
<tr>
<td>JW</td>
<td>bkW (Btu/mn)</td>
<td>412.37 (23,451)</td>
</tr>
<tr>
<td>OC</td>
<td>bkW (Btu/mn)</td>
<td>78.2 (4449)</td>
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<tr>
<td>Heat Rejection to Aftercooler</td>
<td>@ 100% Load</td>
<td></td>
</tr>
<tr>
<td>1st Stage AC</td>
<td>bkW (Btu/mn)</td>
<td>94.23 (5359)</td>
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<tr>
<td>2nd Stage AC</td>
<td>bkW (Btu/mn)</td>
<td>176.7 (10,047)</td>
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<tr>
<td>Heat Rejection to Exhaust</td>
<td>@ 100% Load LHV to 25°C (77°F)</td>
<td>bkW (Btu/mn)</td>
</tr>
<tr>
<td>Heat Rejection to Atmosphere</td>
<td>@ 100% Load</td>
<td>bkW (Btu/mn)</td>
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<tr>
<td>Exhaust System</td>
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<td></td>
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<tr>
<td>Exhaust Gas Flow Rate</td>
<td>@ 100% Load</td>
<td>m³/min (cfm)</td>
</tr>
<tr>
<td>Exhaust Stack Temperature</td>
<td>@ 100% Load</td>
<td>°C (°F)</td>
</tr>
<tr>
<td>Intake System</td>
<td></td>
<td></td>
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<tr>
<td>Air Inlet Flow Rate</td>
<td>@ 100% Load</td>
<td>m³/min (scfm)</td>
</tr>
<tr>
<td>Gas Pressure</td>
<td>kPag (psig)</td>
<td>48-345 (7-50)</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
DIMENSIONS

<table>
<thead>
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<th>DIMENSIONS</th>
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<tr>
<td>Length</td>
<td>3400.8 (133.9)</td>
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<tr>
<td>Width</td>
<td>1844.55 (72.6)</td>
</tr>
<tr>
<td>Height</td>
<td>2285.65 (89.9)</td>
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<tr>
<td>Shipping Weight</td>
<td>8401 (18,520)</td>
</tr>
</tbody>
</table>

Note: General configuration not to be used for installation.
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.