CATERPILLAR® ENGINE SPECIFICATIONS

V-16, 4-Stroke-Cycle Spark-Ignited
Bore — in (mm) ..................... 6.7 (170)
Stroke — in (mm) ................... 7.5 (190)
Displacement — cu in (L) ........... 4210 (67.4)
Aspiration ................ Turbocharged-Aftercooled
Compression ratio....................... 11:1

CATERPILLAR® SR4B GENERATOR

Type .......... Static regulator, brushless excited
Construction ...... Single bearing, close coupled
Three phase ................ Wye connected
Insulation ......................... Class H
Enclosure ............. Drip proof IP/22, guarded
Alignment ............... Caterpillar pilot shaft
Overspeed capability ............... 150%
Waveform ............. Less than 5% deviation
Voltage regulator ......... 3-phase sensing with
Volts-per-Hertz response
Voltage regulation ............. Less than ±1%
Voltage gain ......... Adjustable to compensate for
engine speed droop and line loss
TIF .......................... Less than 50
THF ............................. Less than 5%

CATERPILLAR® FACTORY PACKAGE

Factory designed, assembled, and tested. Supported by Caterpillar parts and labor warranty through your local Caterpillar dealer.

DIESEL STRENGTH BUILT IN
Blocks, crankshafts, liners, and connecting rods are common with higher loaded Cat® diesel engines. Robust design provides prolonged life at lower gas engine loads.

CATERPILLAR® CONTROL PANEL

24 Volt DC Control
Terminal box mounted
Vibration isolated
NEMA 1/IP 22 enclosure
Electrically dead front
Lockable door
Generator instruments meet ANSI C-39-1

Voltages Available
60 Hz
240, 480

(Adjustable a minimum of ±10%)
Other voltages available – consult your Caterpillar dealer.
Some voltages require derating.

FEATURES

■ ELECTRONIC IGNITION SYSTEM WITH DETONATION SENSITIVE TIMING
The Caterpillar Electronic Ignition System (EIS) provides optimized spark timing for all operating conditions. Timing is automatically controlled to maintain continuous detonation protection.

■ LOW EXHAUST EMISSIONS
2.0 gram/bhp-hr NOx. Lower emissions are achievable for selected applications; consult your Caterpillar dealer.

G3516
1800 rpm
1040 ekW 60 Hz

Standby Power

Gas
Generator
Set

CATERPILLAR® ENGINE FACILITIES
ISO 9001
CERTIFIED

Shown with Optional Equipment
**STANDARD EQUIPMENT**

**Engine**
- Air cleaner with service indicator
- Breather, crankcase
- Cooler, lubricating oil
- EMCP II, generator control, engine start/stop logic
- Filter, lubricating oil, RH
- Flywheel housing, SAE No. 0
- Governor, Woodward 2301A
- Ignition system, Caterpillar EIS
- Instrument panel, RH
- Intake manifold pressure, intake manifold temperature, oil pressure differential, exhaust pyrometer, and thermocouples
- Jacket water heater
- Lifting eyes
- Manifold, exhaust, watercooled
- Paint, Caterpillar yellow
- Protection devices
- Pumps, aftercooler water, lubricating oil, jacket water, gear driven
- Rails, mounting, 13 inch
- SAE standard rotation
- Thermostats and housing
- Torsional vibration damper
- Valve, 24V gas shutoff

**Generator**
- All metal components are plated or painted
- Optimum winding pitch for minimum total harmonic distortion
- Self excitation (300% short circuit current)
- Standards: meets or exceeds the requirements of IEC 34-1, NEMA MG1-22, BS4999, VDE0530, UTE5100, CSA 22.2, ISO 8528-3
- Three-phase sensing automatic voltage regulator
- VR3 voltage regulator
- Wet layer wound rotors individually tested to 125% overspeed; prototypes to 150% @ 338° F (170° C)
- Windings coated with a fungus-resistant varnish

**ENGINE AND GENERATOR CONTROLS**

The EMCP II comes complete with many control features competitive manufacturers only offer as options.

**Standard Features**
- Adjustable purge cycle from 0-20 seconds (factory set at 5 seconds)
- Auto start-stop engine control with programmable safety shutdowns
- Cool down timer, adjustable from 0 to 30 minutes
- Cycle cranking, with adjustable crank/rest periods of 1 to 60 seconds
- Delayed ignition (magneto) “kill” after gas valve is closed. Five second delay
- Emergency stop button

Flashing LED indicators for protection and diagnostics, including: low oil pressure, high coolant temperature, low coolant level (when optional coolant sensor is installed), overspeed, overcrank, emergency stop, fault shutdown, spare fault alarm
- Generator voltage adjust potentiometer
- Indicator/display test switch
- LCD digital readout for: engine oil pressure, coolant temperature, engine rpm, system DC volts, generator AC volts and amps, and generator frequency
- NEMA 1/IP 22 enclosure
- Programmable for energize to shutoff or energize to run
- Spare alarm and fault inputs for customer use

**OPTIONAL EQUIPMENT**

**Engine**
- Battery chargers
- Battery, rack, and cables
- Air inlet adapters
- Customer Communications Module (CCM)
- Exhaust fittings
- Muffler
- Power takeoffs
- Prelube pump
- Lube oil

**Generator**
- DVR – Digital Voltage Regulator, adjustable volts/H3 regulation for large block loads. Diode monitor, under- and over-voltage protection
- Extra dips and bakes of insulating resins
- Manual voltage control
- RFI filter – 82/499/EEC, VDE 875/10.84 A2 Level N, BS800 standards, and MIL-STD-461B (conducted, radiated, and susceptibility
- VR3F for enhanced transient response and block loading
- Permanent magnet excitation

**Optional Features**
- Alarm modules and remote annunciators to meet NFPA 99 or NFPA 110 codes
- Auxiliary relay
- Coolant loss sensor
- Customer interface module
- Dustproof enclosure
- Frequency adjust potentiometer
- Panel lights
- Reverse power relay
- Synchronizing modules
# TECHNICAL DATA

## G3516 LE Standby Power Gas Generator Sets — 1800 rpm

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Unit</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power Rating @ 0.8 PF without Fan</td>
<td>ekW</td>
<td>1040</td>
</tr>
<tr>
<td></td>
<td>kV·A</td>
<td>1300</td>
</tr>
<tr>
<td>Generator Frame Size</td>
<td></td>
<td>693</td>
</tr>
<tr>
<td>Engine Lubricating Oil Capacity</td>
<td>gal</td>
<td>106</td>
</tr>
<tr>
<td>System Backpressure (Max Allowable)</td>
<td>in water</td>
<td>27</td>
</tr>
<tr>
<td>Exhaust Flange Size — (Internal Diameter)</td>
<td>in</td>
<td>7.1</td>
</tr>
<tr>
<td>Length</td>
<td>in</td>
<td>187.9</td>
</tr>
<tr>
<td>Width</td>
<td>in</td>
<td>86.8</td>
</tr>
<tr>
<td>Height</td>
<td>in</td>
<td>79.2</td>
</tr>
<tr>
<td>Shipping Weight</td>
<td>lbs</td>
<td>20 560</td>
</tr>
<tr>
<td>Engine Coolant Capacity with Radiator</td>
<td>gal</td>
<td></td>
</tr>
<tr>
<td>100% Load</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel Consumption (100% load) with Fan per ISO3046/1: +5%, -0% tolerance</td>
<td>BTU/bhp-hr</td>
<td>7899</td>
</tr>
<tr>
<td>Motor Starting (35% voltage dip)</td>
<td>SkVA (volt)</td>
<td>2626 (480)</td>
</tr>
<tr>
<td>Combustion Air Inlet Flow Rate</td>
<td>ft³/min</td>
<td>3435</td>
</tr>
<tr>
<td>Exhaust Gas Flow Rate (at stack temp)</td>
<td>ft³/min</td>
<td>8583</td>
</tr>
<tr>
<td>Heat Rejection to Aftercooler</td>
<td>BTU/min</td>
<td>9746</td>
</tr>
<tr>
<td>Heat Rejection to Exhaust (total)</td>
<td>BTU/min</td>
<td>54 853</td>
</tr>
<tr>
<td>Heat Rejection to Jacket Water (total)</td>
<td>BTU/min</td>
<td>58 557</td>
</tr>
<tr>
<td>Heat Rejection to Atmosphere from Engine</td>
<td>BTU/min</td>
<td>7155</td>
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<tr>
<td>Heat Rejection to Atmosphere from Generator</td>
<td>BTU/min</td>
<td>2821</td>
</tr>
<tr>
<td>Exhaust Gas Stack Temperature</td>
<td>Deg F</td>
<td>1603</td>
</tr>
<tr>
<td>Deration for Engine</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Altitude – 3.5% per 500 feet above</td>
<td>ft</td>
<td>4000</td>
</tr>
<tr>
<td>2% per 10° F above</td>
<td>Deg F</td>
<td>77</td>
</tr>
</tbody>
</table>

* Note: For permitting see TMI data.
G3516 GAS GENERATOR SET

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

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See general dimension drawing 127-8351 for additional information.

Dimensions are in in (mm).

Note: General configuration not to be used for installation.

RATINGS DEFINITIONS AND CONDITIONS

Ratings are based on SAE J 1349 standard conditions of 29.61 in Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 29.61 in Hg (100 kPa) and 81° F (27° C); and API 7B-11C standard conditions of 29.38 in Hg (99 kPa) and 85° F (29° C) also apply.

Ratings are based on dry natural gas having a low heat value of 905 btu/ft³ (35.22 MJ/m³). Variations in altitude, temperature, and gas composition from standard conditions may require a reduction in engine horsepower.

Turbocharged-aftercooled ratings apply to 4000 ft (1525 m) and 77° F (25° C). For applications which exceed these limits consult your Caterpillar dealer.

Standby — Output available with varying load for the duration of the interruption of the normal source power. Fuel stop power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514.

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for details.

01 Centerline of Crankshaft

02 Centerline of Engine

03 Rear Face of Cylinder Block