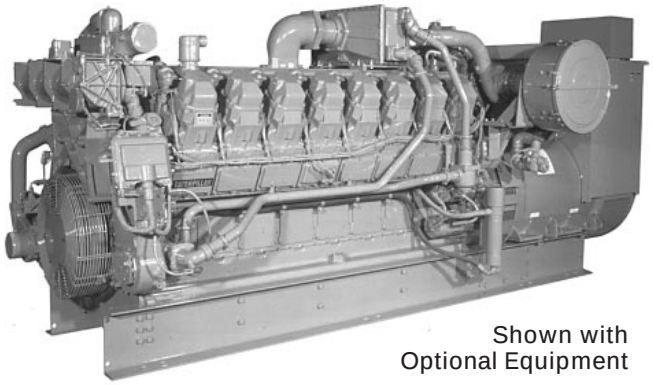
CATERPILLAR®

Gas Generator Set

G3516

1800 rpm
1040 ekW 60 Hz

Standby Power



Shown with
Optional Equipment

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 ENGINE FACILITIES ISO 9001 CERTIFIED

FEATURES

- **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.
- **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 NO_x. Lower emissions are achievable for selected applications; consult your Caterpillar dealer.

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 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.

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

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/H_3 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

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
Cooldown 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 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

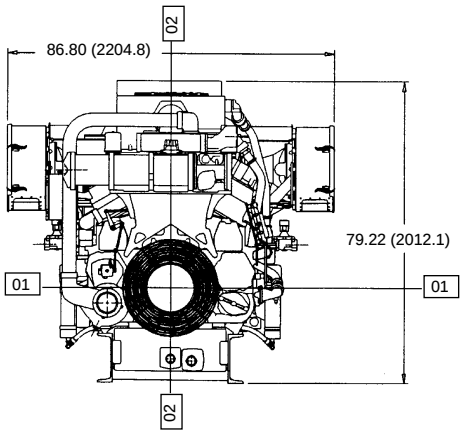
TECHNICAL DATA

G3516 LE Standby Power Gas Generator Sets — 1800 rpm		
Power Rating @ 0.8 PF without Fan	ekW kV•A	1040 1300
Generator Frame Size		693
Engine Lubricating Oil Capacity	gal	106
System Backpressure (Max Allowable)	in water	27
Exhaust Flange Size — (Internal Diameter)	in	7.1
Length	in	187.9
Width	in	86.8
Height	in	79.2
Shipping Weight	lbs	20 560
Engine Coolant Capacity with Radiator	gal	
100% Load Fuel Consumption (100% load) with Fan per ISO3046/1: +5%, -0% tolerance	BTU/bhp-hr	7899
Motor Starting (35% voltage dip)	SkVA (volt)	2626 (480)
Combustion Air Inlet Flow Rate	ft^3/min	3435
Exhaust Gas Flow Rate (at stack temp)	ft^3/min	8583
Heat Rejection to Aftercooler	BTU/min	9746
Heat Rejection to Exhaust (total)	BTU/min	54 853
Heat Rejection to Jacket Water (total)	BTU/min	58 557
Heat Rejection to Atmosphere from Engine	BTU/min	7155
Heat Rejection to Atmosphere from Generator	BTU/min	2821
Exhaust Gas Stack Temperature	Deg F	1603
Deration for Engine Altitude – 3.5% per 500 feet above 2% per 10° F above	 ft Deg F	 4000 77
* Note: For permitting see TMI data.		

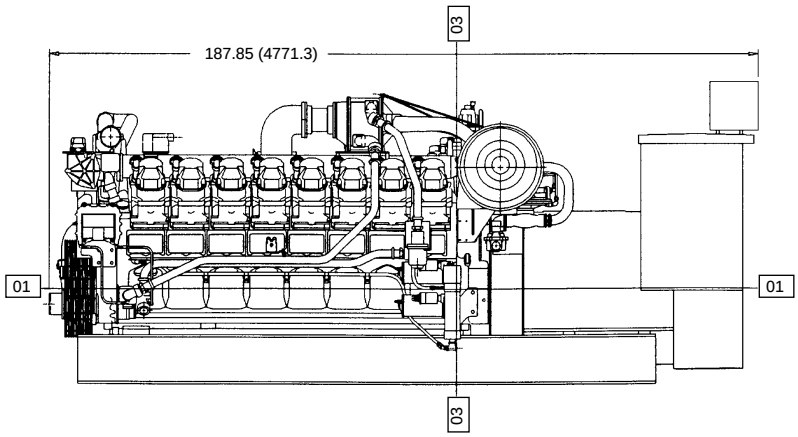
CATERPILLAR®

G3516 GAS GENERATOR SET

FRONT VIEW



SIDE VIEW



01	Centerline of Crankshaft
02	Centerline of Engine
03	Rear Face of Cylinder Block

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 J1349 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/ft^3 (35.22 MJ/m^3). 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.

The International System of Units (SI) is used in this publication.

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