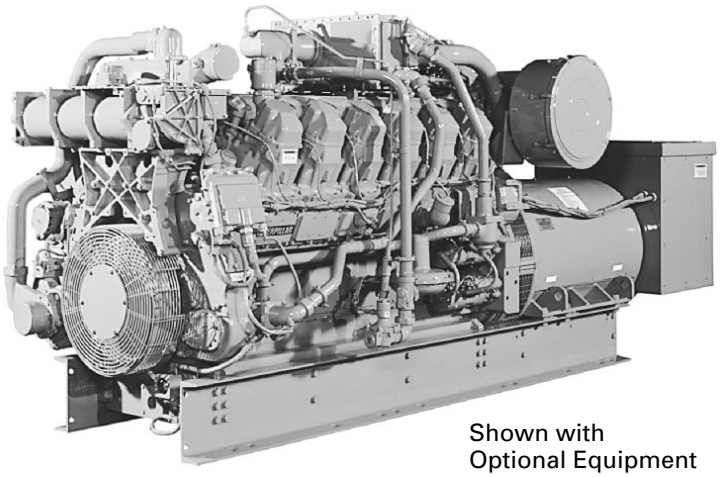
CATERPILLAR®

Gas Engine Generator Set

G3512 LE

1500 rpm
50 Hz
900-950 kV•A; 720-760 kW

Continuous Power



Shown with
Optional Equipment

CATERPILLAR® ENGINE SPECIFICATIONS

V-12, 4-Stroke-Cycle Spark-Ignited
Bore — mm (in) 170 (6.7)
Stroke — mm (in) 190 (7.5)
Displacement — L (cu in) 51.8 (3158)
Aspiration . . . . . Turbocharged-Aftercooled
Compression ratio 8:1, 11:1
Shipping Weight (dry) — kg (lb) 9166 (20 190)
(includes engine, generator, and rails)

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.
- **FUEL FLEXIBILITY**
  Capability to burn a wide range of gaseous fuels, including landfill gas, digester gas, coal seam gas, and propane.
- **GALLERY COOLED PISTONS**
  Oil passageways provide cooler piston temperatures which prevent carbon build-up and increase detonation margin.
- **COOLING WATER TEMPERATURE**
  Choice of cooling water temperature between 99° C and 127° C to match heat recovery requirements.

CATERPILLAR® SR4 GENERATOR

Type . . . . . Static regulator, brushless excited
Construction . . . . . Single bearing, close coupled
Three phase . . . . . Wye connected
Insulation . . . . . Class F
Enclosure . . . . . Drip proof
Alignment . . . . . Caterpillar pilot shaft
Overspeed capability 130%
Waveform . . . . . Less than 5% deviation
Voltage regulator . . . . . 3-phase sensing with Volts-per-Hertz
Voltage regulation . . . . . Less than ± 1%
Voltage gain . . . . . Adjustable to compensate for engine speed droop and line loss
TIF . . . . . Less than 50
THF . . . . . Less than 3%

CATERPILLAR ENGINE FACILITIES ISO 9001 CERTIFIED

CATERPILLAR®

G3512 LE GAS GENERATOR SET

STANDARD EQUIPMENT

- Air cleaners with service indicator
- Breather, crankcase
- Cooler, lubricating oil
- Filters, lubricating oil, RH
- Flywheel housing, SAE No. 00
- Governor (Woodward), magneto engine: 2301 EIS engine: 2301A
- Ignition system Altronic III or Caterpillar EIS
- Instrument panel, RH or LH
  - exhaust temp.
  - intake manifold pressure
  - intake manifold temp.
  - oil pressure
  - oil pressure differential
  - service meter
  - water temp.
- Lifting eyes
- Manifold, exhaust, watercooled
- Paint, Caterpillar yellow
- Protection devices
- Pumps
  - gear driven
  - aftercooler water
  - lubricating oil
  - jacket water
- Rails, mounting, 13 inch
- Regulator, gas pressure
- SAE standard rotation
- Thermostats and housing
- Torsional vibration damper

OPTIONAL EQUIPMENT

- Cooling systems, high temperature
- Custom generator voltages
- Exhaust fittings
- Generator mounted control panel
- Governor (Woodward), magneto engine: 2301A
- Load share governor
- Low BTU arrangements
- Low pressure gas fuel system (10 kPa)
- Muffler
- Power takeoffs
- Prelube pump
- Starting systems
- Tachometer

G3512 LE GAS GENERATOR SET

CATERPILLAR®

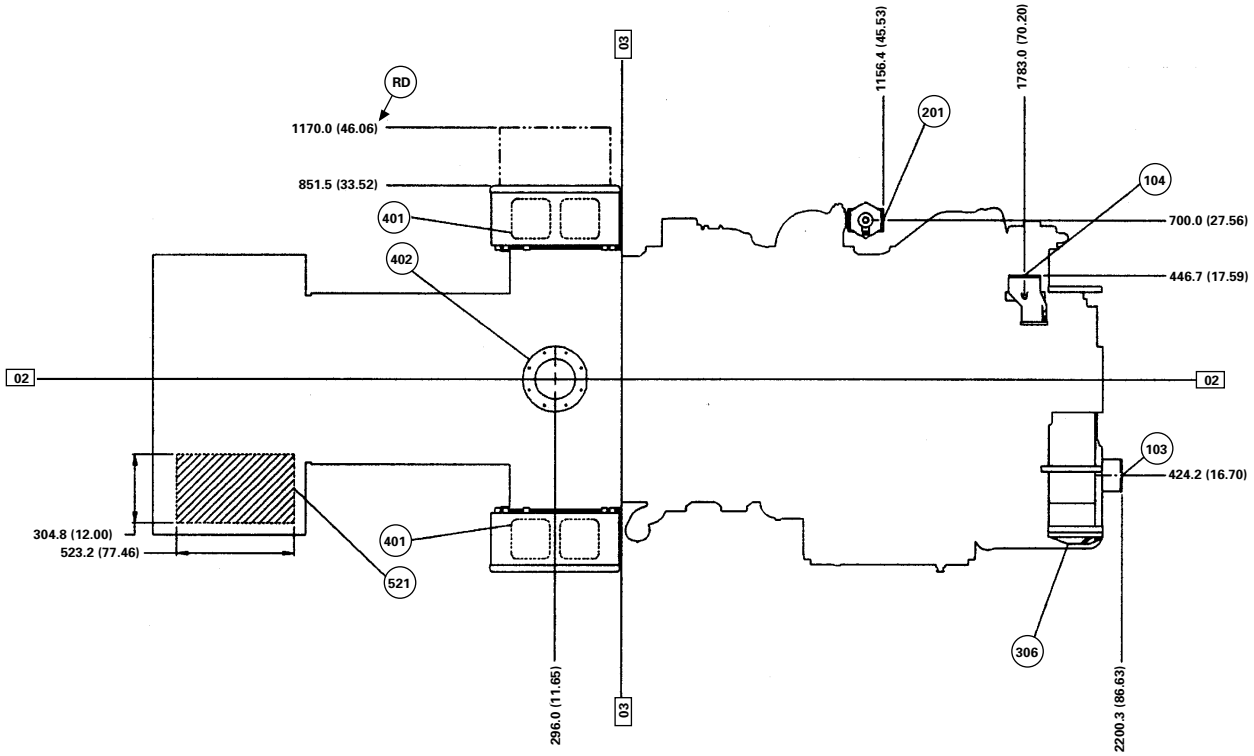
TECHNICAL DATA

G3512 LE Low Pressure – 1500 rpm		32 SCAC	54 SCAC	32 SCAC	54 SCAC
Electrical Output @ 0.8 PF without Fan	kW kV•A	760 950	720 900	760 950	720 900
Engine Speed	rpm	1500	1500	1500	1500
Voltage		400/3300	400/3300	400/3300	400/3300
Compression Ratio		11:1	11:1	8:1	8:1
Min Gas Pressure Required	kPa	10-34	10-34	10-34	10-34
NO_x	g/bhp-hr	2.00	2.00	2.00	2.00
CO g/bhp-hr	g/bhp-hr	1.93	1.92	1.78	1.83
HC (total)	g/bhp-hr	3.82	3.68	2.71	2.78
HC (non-methane)	g/bhp-hr	0.57	0.55	0.41	0.42
Exhaust O_2 (dry)	%	7.6	7.5	7.9	8.0
Fuel Consumption (100% load)	MJ/kW-hr	10.33	10.61	10.58	10.79
Fuel Consumption (75% load)	MJ/kW-hr	10.95	11.09	10.69	10.98
Air Inlet Flow Rate	Nm^3/min	63.2	59.9	68.6	66.3
Exhaust Gas Flow Rate @ stack C	Nm^3/min	160.0	154.0	175.0	170.0
Heat Rejection to Jacket Water (total)	kW	643.0	672.0	620.0	628.0
Heat Rejection to Exhaust (to 177° C)	kW	388.0	382.0	431.0	421.0
Heat Rejection to Aftercooler	kW	139.0	105.0	171.0	139.0
Heat Rejection to Atmosphere	kW	80.0	80.0	80.0	80.0
Exhaust Gas Stack Temperature	Deg C	456.0	467.0	465.0	468.0

G3512 LE High Pressure – 1500 rpm		32 SCAC	54 SCAC	32 SCAC	54 SCAC
Electrical Output @ 0.8 PF without Fan	kW kV•A	760 950	720 900	760 950	720 900
Engine Speed	rpm	1500	1500	1500	1500
Voltage		400/3300	400/3300	400/3300	400/3300
Compression Ratio		11:1	11:1	8:1	8:1
Min Gas Pressure Required	kPa	207-278	207-278	241-278	241-278
NO_x	g/bhp-hr	2.00	2.00	2.00	2.00
CO g/bhp-hr	g/bhp-hr	1.93	1.92	1.78	1.83
HC (total)	g/bhp-hr	3.82	3.68	2.71	2.78
HC (non-methane)	g/bhp-hr	.57	.55	.41	.42
Exhaust O_2 (dry)	%	7.6	7.5	7.9	8.0
Fuel Consumption (100% load)	MJ/kW-hr	10.33	10.61	10.58	10.79
Fuel Consumption (75% load)	MJ/kW-hr	10.95	11.09	10.69	10.98
Air Inlet Flow Rate	Nm^3/min	63.2	59.9	68.6	66.3
Exhaust Gas Flow Rate @ stack C	Nm^3/min	160.0	154.0	175.0	170.0
Heat Rejection to Jacket Water (total)	kW	648.0	676.0	627.0	633.0
Heat Rejection to Exhaust (to 177° C)	kW	388.0	382.0	431.0	421.0
Heat Rejection to Aftercooler	kW	133.0	101.0	165.0	134.0
Heat Rejection to Atmosphere	kW	80.0	80.0	80.0	80.0
Exhaust Gas Stack Temperature	Deg C	456.0	467.0	465.0	468.0

* SCAC refers to Separate Circuit Aftercooling water inlet temperature.
Ratings and data based on specified standard conditions (back page).

GAS GENERATOR SET — TOP VIEW



02	Centerline of Engine	201	Fuel Inlet	521	Conduit Entrance
03	Rear Face of Cylinder Block	308	Oil Filter	RD	Removal Distance
103	Water Inlet	401	Air Inlet		
104	Water Outlet	402	Exhaust		

See general dimension drawing 119-9594 for additional Electronic Ignition System (EIS) engine detail and NA information.

For magneto ignition system engines see general dimension drawing 7C-4609.

Note: General configuration not to be used for installation.

CONDITIONS AND DEFINITIONS

Ratings are based on SAE J1349 standard conditions of 100 kPa (29.61 in Hg) and 25° C (77° F). These ratings also apply at ISO3046/1, DIN6271 and BS5514 standard conditions of 100 kPa (29.61 in Hg) and 27° C (81° F); and API 7B-11C standard conditions of 99 kPa (29.38 in Hg) and 29° C (85° F) also apply.

Ratings are based on dry natural gas having a low heat value of 35.22 MJ/m^3 (905 btu/ft^3). Variations in altitude, temperature, and gas composition from standard conditions may require a reduction in engine horsepower.

Turbocharged-aftercooled ratings apply to 1525 m (5000 ft) and 25° C (77° F). **Naturally aspirated** engines apply to 150 m (500 ft) and 29° C (85° F). For applications which exceed these limits consult your Caterpillar dealer.

Continuous – Output available without varying load for an unlimited time. Continuous power in accordance with ISO8528, ISO3046/1, AS2789, DIN6271, and BS5514.