G3508J Gas Engine

515 bkW (690 bhp) 1400 rpm
0.5 g/bhp-hr NOx (NTE)

Shown with optional equipment

Cat® Engine Specification
V-8, 4-Stroke-Cycle

Bore
170 mm (6.7 in)

Stroke
190 mm (7.5 in)

Displacement
34.5 L (2105 cu. in)

Aspiration
Turbocharged-2 Stage aftercooled

Digital Engine Management Governor and Protection
Electronic (ADEM™ A3)

Combustion
Lean Burn

Cooling System Capacity
Total ..... 135.3 L (36 gal)
JW ..... 124 L (33 gal)
SCAC .....11.3 L (3 gal)

Lube Oil System (refill)
220 L (58 gal)

Oil Change Interval
1000 hrs

Rotation (from flywheel end)
Counterclockwise

Flywheel
SAE No.21

Flywheel Housing
SAE No.00

Flywheel Teeth
183

FEATURES AND BENEFITS

Engine Design
- 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 density (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 and some non-attainment areas
- 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

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 fluid
  - Presence of combustion by-products
  - Site-specific oil change interval

Web Site
For all your Oil & Gas power requirements, visit www.cat.com/oilandgas

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STANDARD EQUIPMENT

G3508J Gas Engine

Air Inlet System
Axial flow air cleaners
Single element canister type with service indicator

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

Exhaust System
Water-cooled exhaust manifolds
Dry turbocharger housings
Water-cooled exhaust elbow

Flywheels and Housings
SAE No. 21 flywheel
SAE No. 00 flywheel housing
SAE standard rotation

Fuel System
7-40 psig gas supply
Electronic fuel metering valve
Gas pressure regulator
Gas shutoff valve

Instrumentation
Remote-mounted Advisor control panel
Product Link cellular radio

Mounting
Rails

Lubrication System
Crankcase breather - top mounted
Oil cooler
Oil filter - RH
Oil pan, capacity 58 gal
Oil sampling valve
Turbo oil accumulator

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

General
Paint — Cat yellow
Crankshaft vibration damper and guard

OPTIONAL EQUIPMENT

Air Inlet System
Rain shield
Round air inlet adapters

Charging System
CSA alternator (24V,65A)

Cooling System
Jacket water inlet flange-hose connection

Exhaust System
Flexible fittings
Elbow
Flanges

Fuel System
Fuel filter

Instrumentation
LAN adapter
15',40',90',140' Product Link extension harness
20',30',50',100' interconnect harness

Lubrication System
Lubricating oil
Oil bypass filter
Oil pan drain
Air prelube pump

Power Take-Offs
Front stub shaft
Crankshaft pulley

Starting System
Air pressure regulator
90 psi starter
150 psi starter
Jacket water heater

General
Special paint
Crankshaft vibration double damper
Explosion relief valves

EU Certification
EEC DOI certification

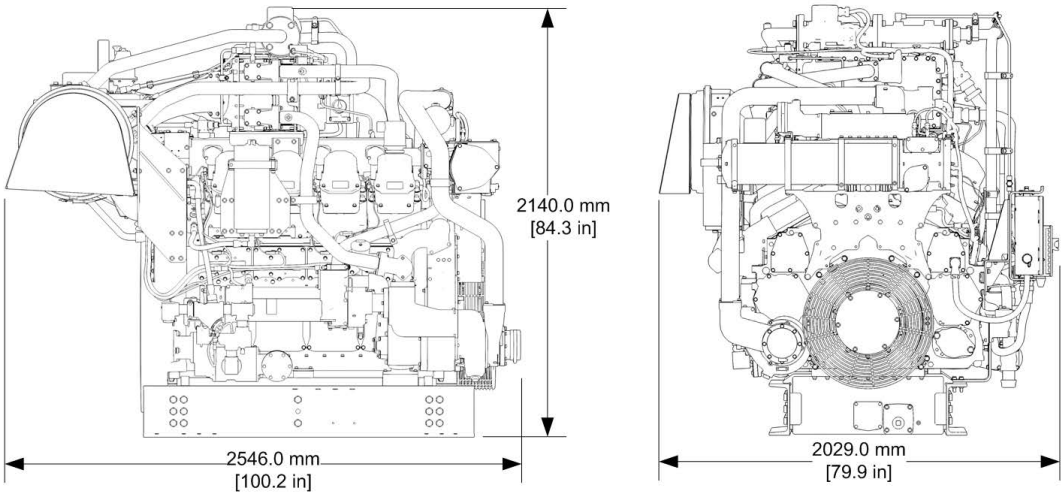
Torsional Vibration Analysis

G3508J Gas Engine

Performance Number		EM2758-00
Rating	g/bhp-hr	0.5 g NOx NTE
Engine Power	bkW (bhp)	515 (690)
Engine Speed	rpm	1400
Max Altitude @ Rated Torque and 38°C (100°F)	m (ft)	1524 (5000)
Speed Turndown @ Max Altitude, Rated Torque, and 38°C (100°F)	%	29
Temperature		
JW	°C (°F)	99 (210)
SCAC	°C (°F)	54 (130)
Emissions (NTE)*		
NOx	g/bkW-hr (g/bhp-hr)	0.67 (0.5)
CO	g/bkW-hr (g/bhp-hr)	3.46 (2.58)
CO_2	g/bkW-hr (g/bhp-hr)	640 (477)
VOC**	g/bkW-hr (g/bhp-hr)	0.74 (0.55)
Fuel Consumption ***	MJ/bkW-hr (Btu/bhp-hr)	10.26 (7254)
Heat Balance		
Heat Rejection to Jacket Water	bkW (Btu/min)	302 (17180)
Heat Rejection to Oil Cooler	bkW (Btu/min)	47 (2688)
Heat Rejection to Aftercooler		
Stage 1 (JW)	bkW (Btu/min)	73 (4142)
Stage 2 (SCAC)	bkW (Btu/min)	47 (2672)
Heat Rejection to Exhaust LHV To 25°C (77°F)	bkW (Btu/min)	444 (25225)
Heat Rejection to Atmosphere	bkW (Btu/min)	53 (3041)
Exhaust System		
Exhaust Gas Flow Rate	N*m^3/min (scfm)	422.5 (4007)
Exhaust Stack Temperature	°C (°F)	422 (792)
Intake System		
Air Inlet Flow Rate	N*m^3/min (scfm)	168 (1595)
Gas Pressure	kPag (psig)	48-276 (7-40)

All technical data is based on 100% load and speed
* listed as not to exceed
** Volatile organic compounds as defined in U.S. EPA 40 CFR 60, subpart JJJ
*** ISO 3046/1

G3508J Gas Engine



Note: General configuration not to be used for installation

Dimensions		
Length	2546 mm	100.2 in
Width	2029 mm	79.9 in
Height	2140 mm	84.3 in
Weight (wet)	6048 kg	13,306 lb

Rating Definitions and Conditions

Engine performance is obtained in accordance with SAE J1995, ISO3046/1, BS5514/1, and DIN6271/1 standards.

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.

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Subject to change without notice.
LEHW0341-00