



Image shown may not reflect actual package

## NATURAL GAS CONTINUOUS 2335 - 2900 ekw 50 Hz 1000 RPM 60 Hz 900 RPM

Caterpillar is leading the power generation marketplace with power solutions engineered to deliver unmatched flexibility, expandability, reliability and cost-effectiveness.

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## FEATURES

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### EMISSIONS

- Meets most worldwide emission levels down to 0.5 g/bhp-hr NO<sub>x</sub> without after treatment

### FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested.
- Flexible packaging options for easy and cost effective installation.

### PROVEN RELIABILITY

- Over 650 x G3612 gensets at 1700MW installed worldwide.
- High availability
- Field proven in a wide range of applications
- Certified torsional vibration analysis available

### WORLDWIDE PRODUCT SUPPORT

- Cat<sup>®</sup> dealers provide extensive post sales support including maintenance and repair agreements
- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- The Cat<sup>®</sup> S•O•S<sup>SM</sup> program cost effectively detects internal engine component conditions, even the presence of unwanted fluids and combustion by-products

### Cat<sup>®</sup> G3612 GAS ENGINE

- Robust design provides prolonged life and lower owning and operating costs
- High energy ignition systems for consistent firing
- Highly efficient enriched prechamber design for complete combustion
- Electronic controls to optimize performance

### CAT ELECTRONIC CONTROL SYSTEM

- Combustion event monitoring to protect your investment
- User friendly and easy to navigate
- Digital monitoring, metering and protection
- Remote control and monitoring options

### CUSTOMIZED OPTIONS AVAILABLE

- Customer service training
- Factory installation audit
- Factory commissioning
- Custom engine & generator configurations
- Custom factory testing
- Custom engine software

## FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
<b>Air Inlet</b>	Installed turbo air inlet adapters	Air cleaners (shipped loose)
<b>Control Panel</b>	Engine mounted instrument panel	ADVISOR electronic display panel
<b>Cooling</b>	Engine driven jacket water pumps Package mounted aftercooler	Engine driven aftercooler pumps Package mounted heat exchangers Up to four separate cooling circuits for JW, AC1, AC2, OC circuits Local or remote expansion tank
<b>Exhaust</b>	Dual 355 mm (14 in) diameter vertical exhaust outlet	
<b>Fuel</b>	High pressure fuel system	Ferrous and anti-corrosion fuel system Gas pressure regulator for supply pressure up to 1034 kPa (150 psi) 1 micron fuel filter
<b>Generator</b>	Cat 400 to 13,800 Volt generators	Customer specified generator
<b>Governing</b>	ADEM III with air-fuel ratio and timing control	
<b>Ignition</b>	Electronic ignition with individual cylinder detonation sensing and variable timing	
<b>Lubrication</b>	Engine driven main lubrication pump Simplex oil filter Temperature regulated oil cooler Oil pressure regulation Pre and post-lubrication system Front and rear oil pan drain ports	Air driven prelube pump Lube oil makeup systems Duplex oil filter
<b>Mounting</b>	Engine Lifting Eyes Heavy duty I-frame base rails	
<b>Starting / Charging</b>	Air starting system (turbine or vane style)	Pressure reducing valves Engine mounted charging alternator Jacket water heaters (88 to 110 °C)
<b>General</b>	Caterpillar Yellow paint	Customer specified paint Service and barring tools

## SPECIFICATIONS

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### GAS ENGINE

G3612 Lean Burn with Prechamber Combustion	
Allowable Methane Number*	65 - 100
Number of Cylinders	12
Bore --- mm (in)	300 (11.81)
Stroke --- mm (in)	300 (11.81)
Displacement --- L (cu in)	248 (15,530)
Compression Ratio	10.5:1
Aspiration	Turbocharged Separate Circuit Aftercooled
Engine Fuel Inlet Pressure	310 kPa (45 psi)
Governor Type	Electronic (ADEM III)

### CONTROL SYSTEM PROTECTIONS

- Low system voltage
- High engine coolant temperature
- Low jacket water pressure
- High jacket water inlet pressure
- Engine overspeed
- High engine oil temperature
- High engine oil pressure
- Low engine oil pressure below 600 rpm
- Low engine oil pressure above 600 rpm
- High oil filter differential pressure
- Low oil filter differential pressure
- High engine oil to jacket water temperature differential
- High crankcase pressure
- High inlet air temperature at low engine load
- High inlet air temperature at high engine load
- High exhaust port temperature
- High exhaust port temperature deviation
- High turbo inlet temperature
- High turbo outlet temperature
- Continuous cylinder misfire
- Crankcase explosion relief

\*Derate may apply at lower Methane Numbers

## TECHNICAL DATA

G3612 Genset	Ref.	DM5008		DM5006		DM5396		DM5395	
Frequency	Hz	50				60			
Emission level (NO <sub>x</sub> )	mg/Nm <sup>3</sup> g/bhp-hr	241	0.5	248	0.5	250	0.5	254	0.5
Aftercooler SCAC (Stage 2)	Deg C Deg F	54	130	32	90	54	130	32	90
<b>Package Performance* <sup>(1)</sup> (w/ JW pump)</b>									
Power Rating @ 0.8 pf	ekW Continuous	2498		2900		2335		2615	
Power Rating @ 1.0 pf		2511		2915		2347		2629	
Electric Efficiency (1.0 pf, ISO 3046/1) <sup>(2)</sup>	%	38.7%		40.4%		40.0%		40.5%	
Mechanical Power	bkW Continuous	2575		2990		2407		2696	
<b>Fuel Consumption <sup>(3)</sup></b>									
100% load w/o fan	Nm <sup>3</sup> /hr scf/hr	636	24,450	730	27,206	635	22,122	728	24,462
75% load w/o fan	Nm <sup>3</sup> /hr scf/hr	493	18,939	563	20,958	489	17,022	562	18,890
50% load w/o fan	Nm <sup>3</sup> /hr scf/hr	346	11,355	395	14,706	339	11,795	394	13,249
<b>Altitude Capability <sup>(4)</sup></b>									
At 25 Deg C (77 Deg F) ambient, above sea level	m ft	500	1640	500	1640	323	1060	323	1060
<b>Cooling System</b>									
Ambient air temperature	Deg C Deg F	25	77	25	77	25	77	25	77
Jacket water temperature ( Maximum outlet )	Deg C Deg F	99	210	94	201	99	210	94	201
<b>Exhaust System</b>									
Combustion air inlet flow rate	Nm <sup>3</sup> /min scfm	231.0	8,900	250.0	9,637	217.0	8,353	236.0	9,097
Exhaust stack gas temperature	Deg C Deg F	413	775	405	761	392	738	380	716
Exhaust gas flow rate (Nm <sup>3</sup> @ 0C, ft <sup>3</sup> /min @ stack T)	Nm <sup>3</sup> /min ft <sup>3</sup> /min	247	22,229	268	23,808	232	20,216	252	21,600
<b>Heat Rejection <sup>(5)</sup></b>									
Heat rejection to Jacket Water+Oil Cooler+AC-Stage 1	kW Btu/min	1136	64,648	1234	70,209	1014	57,655	1087	61,849
Heat rejection to AC-Stage 2	kW Btu/min	224	12,710	359	20,406	192	10,913	323	18,389
Heat rejection to exhaust (LHV to 120 Deg C)	kW Btu/min	1656	75,838	1746	79,436	1438	64,658	1492	66,193
Heat rejection to atmosphere from engine	kW Btu/min	218	12,381	242	13,785	197	11,218	218	12,410
Heat rejection to atmosphere from generator*	kW Btu/min	77	4,397	77	4,397	77	4,397	77	4,397
<b>Generator</b>									
Voltages Available	V	400 - 13,800V		400 - 13,800V		400 - 13,800V		400 - 13,800V	
Typical Temperature rise	Deg C	105		105		105		105	
Typical motor starting capability @ 30% voltage dip <sup>(6)</sup>	skVA	6000 - 7500		6000 - 7500		6000 - 7500		6000 - 7500	
<b>Lubrication System</b>									
Standard sump refill with filter change	L Gal	1030	272	1030	272	1030	272	1030	272
<b>Emissions <sup>(7)</sup></b>									
NO <sub>x</sub> @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup> g/bhp-hr	241	0.5	248	0.5	250	0.5	254	0.5
CO @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup> g/bhp-hr	1267	2.6	1303	2.6	1373	2.8	1395	2.8
THC @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup> g/bhp-hr	3610	7.5	3586	7.2	4635	9.3	4549	9.0
NMHC @ 5% O <sub>2</sub> (dry)	mg/Nm <sup>3</sup> g/bhp-hr	542	1.1	538	1.1	696	1.4	683	1.4
Exhaust O <sub>2</sub> (dry)	%	12.0%		11.9%		12.6%		12.5%	

\* Assumed generator efficiency 97% @ 0.8pf, 97.5% @ 1.0pf

## RATING DEFINITIONS AND CONDITIONS

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(1) **Continuous** --- Maximum output available for an unlimited time

**Ratings** are based on pipeline natural gas having a Low Heat Value (LHV) of 35.6 MJ/Nm<sup>3</sup> (905 Btu/ft<sup>3</sup>) and 80 Cat Methane Number. For values in excess of altitude, ambient temperature, inlet / exhaust restriction, or different from the conditions listed, contact your local Cat dealer.

(2) **Efficiency** of standard generator is used. For higher efficiency generators, contact your local Cat dealer.

3) Ratings and fuel consumption are based on ISO3046/1 standard reference conditions of 25 °C (77 °F) of ambient temperature and 100 kPa (29.61 in Hg) of total barometric pressure, 30% relative humidity with 0,+5% fuel tolerance. Fuel conditions in Nm<sup>3</sup>/hr at 0°C, 100 kPa. Fuel conditions in scf/hr at 60°F, 1atm.

(4) **Altitude** capability is based on 2.5 kPa (0.7 in Hg) air filter and 3.0 kPa exhaust (0.9 in Hg) restrictions.

(5) **Heat rejection** - Values based on nominal data with fuel tolerance of ±2.5% and 2.5 kPa inlet and 5.0 kPa exhaust restrictions. Jacket and exhaust ± 10% tolerance. Atmosphere ± 50% tolerance. Lube oil ± 20% tolerance. Aftercooler ± 5% tolerance.

(6) Assumed **synchronous driver**.

Data shown is based on steady state engine operating conditions of 25 °C (77 °F), 96.28 kPa (28.43 in Hg) and fuel having a LHV of 35.6 MJ/Nm<sup>3</sup> (905 Btu/ft<sup>3</sup>) and 80 Cat Methane Number at 101.60 kPa (30.00 in Hg) absolute and 0 °C (32 °F). Emission data shown is subject to instrumentation, measurement, facility, and engine fuel system adjustment.

(7) Emissions data measurements are consistent with those described in EPA CFR 40 Part 89 Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NO<sub>x</sub>.

# CONTINUOUS 2335 - 2900 ekW



## DIMENSIONS

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Typical Package Dimensions		
Length	8077 mm	318 in
Width	2134 mm	84 in
Height	2438 mm	96 in
Approx. Shipping Weight	51,256 kg	113,000 lb

Note: Do not use for installation design.  
See general dimension drawings  
for details.

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