GAS GENERATOR SET

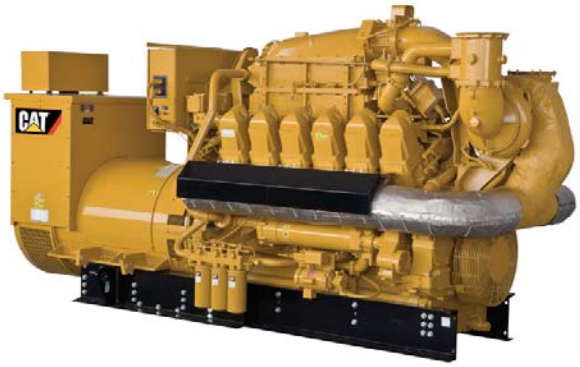

Image shown may not reflect actual package

NATURAL GAS CONTINUOUS

1200 ekW 1500 kVA

50 HZ 1500 RPM 400 Volts

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

FEATURES

EMISSIONS

- Meets TA Luft and 1/2 TA Luft Emission Levels

FULL RANGE OF ATTACHMENT

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

PROVEN SYSTEM

- Fully prototype tested.
- Field proven in a wide range of applications worldwide.
- Certified torsional vibration analysis available.

WORLDWIDE PRODUCT SUPPORT

- Cat® dealers provide extensive post sales support including maintenance and repair agreements
- Cat dealers have over 1,600 dealer branch stores operating in 200 countries
- The Cat S•O•S SM program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT G3512E 1.2MW GAS ENGINE

- Robust high speed diesel block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on low pressure gaseous fuel supply.
- Simple open chamber combustion system for reliability and fuel flexibility.

CAT SR4B GENERATOR

- Designed to match performance and output characteristics of Cat gas engines
- Industry leading mechanical and electrical design
- High efficiency

CAT EMCP II+ CONTROL PANEL

- Simple user friendly interface and navigation
- Digital monitoring, metering and protection setting
- Fully-featured power metering and protection setting
- UL 508A Listed
- Remote control and monitor capability options

CONTINUOUS 1200 ekW 1500 kVA

50 Hz 1500 rpm 400 Volts

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Gas Engine Control Module (GECM)	Fuel / air ratio control Start/stop logic: gas purge cycle, staged shutdown Engine Protection System: detonation sensitive timing, high exhaust temperature shutdown Governor: Transient richening and turbo bypass control Ignition	
Air Inlet		Two element, single-stage air cleaner with enclosure and service indicator Air cleaner with precleaner
Control Panel	Kilowatt transducer (ship loose)	EMCP II+ Local alarm module Remote annunciator Communication Module (PL1000T, PL1000E)
Cooling	Jacket water thermostats ANSI/DN customer flange connections for JW inlet and outlet Cat flanges on SCAC circuit SCAC thermostats	Inlet/Outlet connections Engine driven water pumps for jacket water and aftercooler Stainless steel aftercooler
Exhaust	Dry exhaust manifolds, insulated and shielded Center section cooled turbocharger with Cat flanged outlet Individual exhaust port and turbocharged outlet wired to Integrated Sensing Module (ITSM) with GECM providing alarms and shutdowns	Flange Exhaust expander Elbow Flexible fitting
Fuel	Electronic fuel metering valve Water cooled throttle, 24V DC actuator, controlled by GECM Fuel system is sized for 31.5 to 47.2 MJ/Nm^3 (800 to 1200 Btu/cu ft) dry pipeline natural gas with pressure of 10.2 to 34.5 kPa (1.5 to 5 psi) to the engine fuel control valve	Fuel Filter Gas pressure regulator Gas shutoff valve, 24V, ETR (Energize-To-Run)
Generator	SR4B generator, includes: Cat Digital Voltage Regulator (Cat DVR) with 3-phase sensing and kVAR / PF control Reactive droop Bus bar connections Bearing temperature detectors	Low voltage extension box Cable access box European bus bar
Governing	Electronic speed governor as part of GECM Electronically-controlled 24V DC actuator connected to throttle shaft	Woodward load sharing module
Ignition	Electronic Ignition System controlled by GECM Individual cylinder Detonation Sensitive Timing (DST)	
Lubrication	Gear type lube oil pump Oil filter, filler and dip stick Integral lube oil cooler Oil drain valve Crankcase breather	Lubricating oil Oil level regulator Preluble pump Positive crankcase ventilation system
Mounting	330 mm structural steel base	Spring-type anti-vibration mounts (shipped loose)
Starting / Charging	24V starting motors Battery disconnect switch	Battery with cable and rack (shipped loose) Battery charger Oversized battery Jacket water heater
General	Paint - Caterpillar Yellow except rails Damper guard Operation & Maintenance Manuals Parts book	Crankcase explosion relief valve Engine barring group EEC D.O.I and other certifications

CONTINUOUS 1200 ekW 1500 kVA

50 Hz 1500 rpm 400 Volts

SPECIFICATIONS

CAT LEAN BURN GAS ENGINE

G3512 LE SCAC 4-stroke-cycle, spark-ignited engine	
Number of Cylinders	V12
Bore --- mm (in)	170 (6.7)
Stroke --- mm (in)	190 (7.5)
Displacement --- L (cu in)	51.8 (3158)
Compression Ratio	11.9:1
Aspiration	Turbocharged Separate Circuit Aftercooled
Cooling Type	JW, Oil Cooler and Stage 1 of SCAC Combine
Fuel System	Low Pressure
Governor Type	Electronic (ADEM III)

CAT SR4B GENERATOR

Frame size	825
Excitation	Permanent Magnet
Pitch	0.6667
Number of poles	4
Number of bearings	1
Number of leads	6
Insulation	Class H
IP rating	Drip proof IP22
Alignment	Pilot shaft
Overspeed capability -- % of rated	180%
Waveform deviation line to line, no load	less than 3.0%
Voltage regulator	CDVR
Voltage level adjustment	+/- 5.0%
Voltage regulation, steady state	+/- 0.5%
Voltage regulation with 3% speed change	+/- 0.5%
Telephone Influence Factor (TIF)	less than 50

Consult your Cat dealer for available voltage

CAT EMCPII+ CONTROL PANEL

- Power by 24 volts DC
- NEMA 12, IP44 dust-proof enclosure
- Lockable hinged door
- Single-location customer connection
- Auto start/stop control switch
- Voltage adjustment potentiomenter
- True RMS AC metering, 3 phase
- Purge cycle and staged shutdown logic
- Digital indication for:
  - RPM
  - Operating hours
  - Oil pressure
  - Coolant temperature
  - DC voltage
  - L-L volts, L-N volts, phase amps, Hz, ekW, kVA, kVAR, kWhr, %kW, pf
  - System diagnostic codes
- Shutdown with indicating lights;
  - Low oil pressure
  - High coolant temperature
  - High oil temperature
  - Overspeed
  - Overcrank
  - Emergency stop
  - High inlet air temperature (for TA engine only)
  - Detonation sensitive timing (for LE engine only)
- Programmable protective relaying functions:
  - Under / Over voltage
  - Under / Over frequency
  - Overcurrent
  - Reverse power
- Spare indicator LEDs
- Spare alarm/shutdown inputs

CONTINUOUS 1200 ekW 1500 kVA

50 Hz 1500 rpm 400 Volts

TECHNICAL DATA

G3512E Gas Generator Set	Ref.	DM8812	DM8814	DM8811	DM8813
Emission level (NO_x)	mg/Nm^3	250		500	
Aftercooler SCAC (Stage 2)	Deg C	54	43	54	43
Package Performance [1]					
Power Rating @ 0.8 pf (w/o water pumps and w/o fan)	ekW Continuous	1200			
Power Rating @ 1.0 pf (w/o water pumps and w/o fan)	ekW Continuous	1211			
Mechanical Power (w/o 2 pumps and w/o fan)	bkW Continuous	1245			
Electric Efficiency @ 1.0 pf (ISO 3046/1) [2]	%	41.3%	40.9%	42.3%	42.4%
Fuel Consumption [3]					
100% load w/o fan	Nm^3/hr	293	296	286	287
75% load w/o fan		226	228	220	221
50% load w/o fan		159	159	155	155
Altitude Capability [4]					
At 25 Deg C (77 Deg F) ambient, above sea level	m	400	400	900	900
Cooling System					
Ambient air temperature	Deg C	25	25	25	25
Jacket water temperature (Maximum outlet)	Deg C	99	94	99	94
Exhaust System					
Combustion air inlet flow rate	Nm^3/min	84.7	83.8	80.9	79.9
Exhaust stack gas temperature	Deg C	418	443	424	443
Exhaust gas flow rate	Nm^3/min	86.8	85.8	83.0	82.0
Heat Rejection [5]					
Heat rejection to Jacket Water+Oil Cooler+AC-Stage 1	kW	658	646	612	611
Heat rejection to AC-Stage 2	kW	103	116	95	107
Heat rejection to exhaust (LHV to 120 Deg C)	kW	629	643	614	612
Heat rejection to atmosphere from engine	kW	92	87	92	87
Heat rejection to atmosphere from generator	kW	45	45	45	45
Generator					
Frame		825	825	825	825
Temperature rise	Deg C	105	105	105	105
Motor starting capability @ 30% voltage dip [6]	skVA	3950	3950	3950	3950
Lubrication System					
Standard sump refill with filter change	L	310	310	310	310
Emissions [7]					
NO_x @ 5% O_2 (dry)	mg/Nm^3	250	250	500	500
CO @ 5% O_2 (dry)	mg/Nm^3	1064	1008	1046	1033
THC @ 5% O_2 (dry)	mg/Nm^3	3425	3429	2940	2945
NMHC @ 5% O_2 (dry)	mg/Nm^3	514	514	441	442
Exhaust O_2 (dry)	%	9.9%	9.6%	9.5%	9.3%

CONTINUOUS 1200 ekW 1500 kVA

50 Hz 1500 rpm 400 Volts

RATING DEFINITIONS AND CONDITIONS

(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^3 (905 Btu/ft^3)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.

(4) **Altitude** capability is based on 2.5 kPa air filter and 5.0 kPa exhaust stack restrictions.

(5) **Heat rejection-** Values based on nomial data with fuel tolerance of ±2.5% and 2.5 kPa inlet and 5.0 kPa

(6) Assumed **synchronous** driver.

(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_x.

Data shown is based on steady state engine operating conditions of 25°C (77° F), 96.28 kPa (28.43 in Hg) MJ/Nm^3 (905 Btu/ft^3) 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.

CONTINUOUS 1200 ekW 1500 kVA

50 Hz 1500 rpm 400 Volts

DIMENSIONS

Package Dimensions		
Length	4645 mm	183 in
Width	1828 mm	72 in
Height	2255 mm	89 in
Approx. Shipping Weight	12,250 kg	27,000 lb

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 267-9528)

Performance Number : DM8811-DM8814
Feature Codes: 512GE18
Generator Arr:: 368-6956
Source: US Sourced
LEHE0234-03 (08-11)

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