



STANDBY 450 ekW CONTINUOUS 375 ekW

60 Hz

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

FEATURES

FULL RANGE OF ATTACHMENTS

- Wide range of bolt-on system expansion attachments, factory designed and tested

SINGLE-SOURCE SUPPLIER

- **Fully Prototype Tested** with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Worldwide parts availability through the Caterpillar dealer network
- With over 1,200 dealer outlets operating in 166 countries, you're never far from the Caterpillar part you need.
- 99.5% of parts orders filled within 48 hours. The best product support record in the industry.
- Caterpillar dealer service technicians are trained to service every aspect of your electric power generation system.
- Preventive maintenance agreements
- The Cat Scheduled Oil Sampling (S•O•SSM) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products



CAT® G3412 TA GAS ENGINE

- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Low pressure gas



CAT SR4B GENERATOR

- Designed to match performance and output characteristics of Caterpillar engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Segregated AC/DC, low voltage accessory box provides single point access to accessory connections



CAT CONTROL PANELS

- Two levels of controls, designed to meet individual customer needs:
 - EMCP II provides digital monitoring, metering, and protection
 - EMCP II+ provides EMCP II features along with full-featured power metering and protective relaying

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Single element canister type air cleaner Service indicator	
Cooling	Radiator with guard Coolant drain lines with valves Fan and belt guards Caterpillar Coolant Low coolant level sensors	Jacket water coolant heater with shutoff valves Radiator removal
Exhaust	Stainless steel exhaust flex with weld outlet flange	15 dBA muffler
Fuel	Gas pressure regulator Low pressure fuel system Energize To Run (ETR) gas shutoff valve	
Generator	Self excited Class H insulation Class F temperature rise (105° C continuous/130° C standby) VR6 Voltage Regulator, 3-phase sensing, with reactive droop 2:1 Volts/Hz or 1:1 Volts/Hz Bus bar termination Extension box	Permanent magnet excited Digital Voltage Regulator Digital Voltage Regulator with KVAR/PF control Anti-condensation space heater Oversize & premium generators Circuit breakers, UL, 3 pole with shunt trip Multiple breaker capability
Governor	2301A speed control with EG3P actuator	Electronic load sharing
Ignition	Digital ignition system	
Control Panels	EMCP II	EMCP II+ Customer Communication Module Local alarm & remote annunciator modules
Lube	Lubricating oil and filter Oil drain line with valve Fumes disposal	Manual sump pump
Mounting	Wide base Linear vibration isolators between base and engine-generator	
Starting/Charging	35 amp charging alternator 24 volt starting motor Batteries with rack and cables Battery disconnect switch	Battery chargers, 5 & 10 amp Oversize batteries
General		Automatic Transfer Switches (ATS) Floor standing circuit breakers

SPECIFICATIONS



CAT SR4B GENERATOR

Frame..... 592
 Type Self excited, static regulated, brushless
 Construction Single bearing, close coupled
 Three phase 12 lead reconnectable
 Insulation Class H with tropicalization and antiabrasion
 IP rating Drip proof 22
 Alignment..... Pilot shaft
 Overspeed capability
 Prototype tested 150%
 Production tested 125%
 Wave form..... Less than 5% deviation
 Paralleling capability..... Standard
 Voltage regulator 3-phasing sensing with Volts-per-Hertz
 Voltage regulation Less than ± 1/2% (steady state)
 Less than ± 1% (no load to full load)
 Voltage gain Automatic
 Telephone Influence Factor (TIF)..... Less than 50
 Harmonic Distortion (THD) Less than 5%



CAT ENGINE

G3412 TA, 4-stroke-cycle, SCAC
 Bore – mm (in) 137 (5.4)
 Stroke – mm (in) 152 (6.0)
 Displacement – L (cu in) 27.0 (1649)
 Compression ratio 9.7:1
 Aspiration Turbocharged-Aftercooled
 Ignition system Digital ignition
 Governor type Woodward 2301A



CAT CONTROL PANEL

24 Volt DC Control
 NEMA 1, IP22 enclosure
 Electrically dead front
 Lockable hinged door
 Generator instruments meet ANSI C-39-1
 Terminal box mounted
 Single location customer connector point

Consult your Caterpillar dealer for available voltages.

TECHNICAL DATA

Open Generator Set — 1800 rpm/60 Hz/480 Volts			Standby DM5445		Continuous DM5446	
Package Performance						
Power rating		ekW	450		375	
Power rating @ 0.8 PF		kVA	563		469	
Aftercooler temperature	Deg C	Deg F	54	130	54	130
Fuel Consumption						
100% load with fan	N•m³/hr	scf/hr	148	5507	120	4472
75% load with fan	N•m³/hr	scf/hr	116	4360	96	3576
50% load with fan	N•m³/hr	scf/hr	86	3200	72	2702
Cooling System						
Ambient air temperature*	Deg C	Deg F	40	105	40	105
Air flow restriction (system)	kPa	in water	0.12	0.5	0.12	0.5
Air flow (maximum @ rated speed for standard radiator arrangement)	m³/min	cfm	1430	50,491	1430	50,491
Engine coolant capacity with radiator	L	Gal	140	37	140	37
Jacket water outlet temperature	Deg C	Deg F	99	210	99	210
Exhaust System						
Combustion air inlet flow rate	N•m³/min	scfm	29	1062	24	872
Exhaust gas stack temperature	Deg C	Deg F	502	936	478	892
Exhaust gas flow rate	N•m³/min	cfm	30	3124	25	2476
Exhaust flange size (internal diameter)	mm	in	203	8	203	8
Exhaust system backpressure (maximum allowable)	kPa	in water	6.7	27	6.7	27
Heat Rejection						
Low Heat Value (LHV) fuel input	kW	Btu/min	1484	84,410	1205	68,547
Heat rejection to jacket water (includes oil cooler)	kW	Btu/min	514	29,213	437	24,869
Total heat rejection to exhaust (LHV to 25° C)	kW	Btu/min	359	20,431	283	16,067
Heat rejection to exhaust (LHV to 120° C)	kW	Btu/min	284	13,741	218	10,412
Heat rejection to A/C	kW	Btu/min	37	2127	15	866
Heat rejection to atmosphere from engine	kW	Btu/min	59	3376	48	2742
Heat rejection to atmosphere from generator	kW	Btu/min	29	1660	29	1660
Generator						
Motor starting capability @ 30% voltage dip**		kVA	928		928	
Frame			592		592	
Temperature rise		Deg C	130		105	
Emissions***						
NOx		g/bhp-hr	21.7		21.3	
CO		g/bhp-hr	1.5		1.5	
HC (total)		g/bhp-hr	1.4		1.9	
HC (non-methane)		g/bhp-hr	0.21		0.29	
Exhaust O ₂ (dry)		%	4.0		4.0	

*Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer.

**Assumes synchronous driver

***Emissions data measurement is consistent with those described in EPA CFR 40 PART 89 SUBPART D and ISO 8178-1 for measuring HC, CO, CO₂ and NOx. Data shown is based on steady state engine operating conditions of 77° F, 28.43 inches HG and fuel having a LHV of 920 BTU per cubic foot at 30.00 inches HG absolute and 32° F. Not to exceed emission data shown is subject to instrumentation, measurement, facility and engine fuel system adjustments.

RATING DEFINITIONS AND CONDITIONS

Standby — Output available with varying load for the duration of the interruption of the normal source power.

Continuous — Output available without varying load for an unlimited time.

Ratings are based on ISO3046/1 standard reference conditions of 25° C (77° F) and 100 kPa (29.61 in Hg).

Ratings are based on pipeline natural gas having a LHV (low heat value) of 36.2 mJ/N•m³ (920 Btu/cu ft). Variations in altitude, temperature, and gas composition from standard conditions or the use of a three way catalyst may require a reduction in engine horsepower.

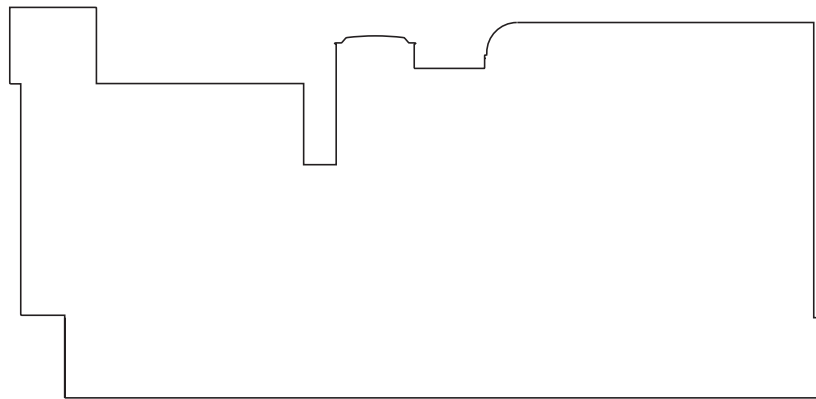
S T A N D B Y 4 5 0 e k W
C O N T I N U O U S 3 7 5 e k W
6 0 H z



STANDBY/CONTINUOUS POWER GENERATOR SET PACKAGE — TOP VIEW



STANDBY/CONTINUOUS POWER GENERATOR SET PACKAGE — SIDE VIEW



Package Dimensions		
Length	4543.1 mm	178.86 in
Width	2235.8 mm	88.02 in
Height	2685.5 mm	105.73 in
Shipping Weight	6356 kg	14,000 lb

Note: Do not use for installation design.
See general dimension drawings
for detail (Drawing #207-4502).