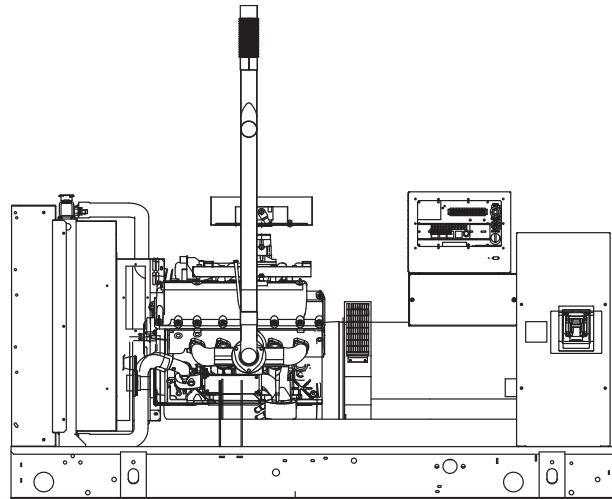


G50LG

Industrial Gaseous Generator Set

EPA Certified Stationary Emergency

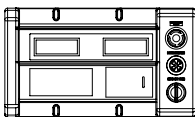
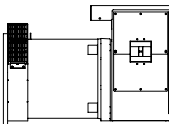
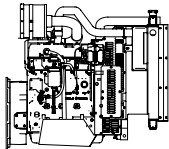
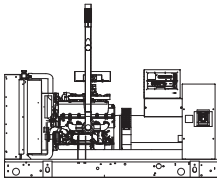
Standby Power Rating
63kVA 50kW 60 Hz



Generator image used for illustration purposes only

features

benefits



Generator Set

- PROTOTYPE & TORSIONALLY TESTED
- UL2200 TESTED
- RHINOCOAT PAINT SYSTEM
- WIDE RANGE OF ENCLOSURES
- ▶ PROVIDES A PROVEN UNIT
- ▶ ENSURES A QUALITY PRODUCT
- ▶ IMPROVES RESISTANCE TO ELEMENTS
- ▶ PROVIDES A SINGLE SOURCE SOLUTION

Engine

- EPA COMPLIANT
- INDUSTRIAL TESTED
- POWER-MATCHED OUTPUT
- INDUSTRIAL GRADE
- ▶ ENVIRONMENTALLY FRIENDLY
- ▶ ENSURES INDUSTRIAL STANDARDS
- ▶ ENGINEERED FOR PERFORMANCE
- ▶ IMPROVES LONGEVITY AND RELIABILITY

Alternator

- TWO-THIRDS PITCH
- LAYER WOUND ROTOR & STATOR
- CLASS H MATERIALS
- DIGITAL 3-PHASE VOLTAGE CONTROL
- ▶ ELIMINATES HARMFUL 3RD HARMONIC
- ▶ IMPROVES COOLING
- ▶ HEAT TOLERANT DESIGN
- ▶ FAST AND ACCURATE RESPONSE

Controls

- ENCAPSULATED BOARD W/ SEALED HARNESS
- 4-20mA VOLTAGE-TO-CURRENT SENSORS
- SURFACE-MOUNT TECHNOLOGY
- ADVANCED DIAGNOSTICS & COMMUNICATIONS
- ▶ EASY, AFFORDABLE REPLACEMENT
- ▶ NOISE RESISTANT 24/7 MONITORING
- ▶ PROVIDES VIBRATION RESISTANCE
- ▶ HARDENED RELIABILITY

primary codes and standards



G50LG

application and engineering data

ENGINE SPECIFICATIONS

General

EPA Emissions Compliance	Stationary Emergency
EPA Emissions Engine Reference	See Emissions Data Sheet
Cylinder #	10
Type	V
Displacement - L (Cu. In.)	6.8 (414.96)
Bore - mm (in.)	90.17 (3.55)
Stroke - mm (in.)	105.92 (4.17)
Compression Ratio	9:1
Intake Air Method	Naturally Aspirated
Number of Main Bearings	7
Connecting Rods	Forged
Cylinder Head	Aluminum
Cylinder Liners	No
Ignition	High Energy
Pistons	Aluminum Alloy
Crankshaft	Steel
Lifter Type	Overhead Cam
Intake Valve Material	Steel Alloy
Exhaust Valve Material	Steel Alloy
Hardened Valve Seats	Yes

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-flow spin-on cartridge
Crankcase Capacity - L (qts)	5.7 (6)

Cooling System

Cooling System Type	Pressurized Closed
Water Pump Flow	38 gal/min
Fan Type	Pusher
Fan Speed (rpm)	2300
Fan Diameter mm (in.)	558 (22)
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120V

Fuel System

Fuel Type	natural gas, propane
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	11" - 14" H ₂ O

Engine Electrical System

System Voltage	12VDC
Battery Charging Alternator (Amps)	30
Battery Size	925CCA
Battery Group	31
Battery Voltage	12VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	390
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50
Standard Excitation	Brushless
Bearings	Sealed Ball
Coupling	Flexible Disc
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes

Voltage Regulator Type	Full Digital
Number of Sensed Phases	3
Regulation Accuracy (Steady State)	+/- 0.25%

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	+/- 0.25%

CODES AND STANDARDS COMPLIANCE (WHERE APPLICABLE)

NFPA 99	BS5514
NFPA 110	SAE J1349
ISO 8528-5	DIN6271
ISO 1708A.5	IEEE C62.41 TESTING
ISO 3046	NEMA ICS 1

Rating Definitions:

Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Prime – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. (Max. load factor = 80%) A 10% overload capacity is available for 1 out of every 12 hours.

G50LG

operating data (60Hz)

POWER RATINGS (kW)

	Natural Gas		Propane Vapor	
	50	Amps: 208	50	Amps: 208
Single-Phase 120/240VAC @1.0pf	50	Amps: 173	50	Amps: 173
Three-Phase 120/208VAC @0.8pf	50	Amps: 150	50	Amps: 150
Three-Phase 120/240VAC @0.8pf	50	Amps: 75	50	Amps: 75
Three-Phase 277/480VAC @0.8pf	50	Amps: 60	50	Amps: 60
Three-Phase 346/600VAC @0.8pf	50		50	

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

Alternator	kW	480VAC						208/240VAC					
		10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	50	34	52	69	86	103	120	26	39	52	65	77	90
Upsize 1	60	42	63	83	104	125	146	32	47	62	78	94	110
Upsize 2	70	59	88	117	147	176	205	44	66	88	110	132	154
Upsize 3	100	79	118	157	197	236	275	59	89	118	148	177	206
Upsize 4*	130	116	174	232	290	348	406	87	131	174	218	261	305

*Brushless excitation only

FUEL

Fuel Consumption Rates**

Natural Gas			Propane Vapor			
Percent Load	ft ³ /hr	m ³ /hr	Percent Load	ft ³ /hr	gal/hr	m ³ /hr
25%	258	7.3	25%	107	2.9	3.0
50%	425	12.0	50%	176	4.8	5.0
75%	592	16.8	75%	245	6.7	6.9
100%	760	21.5	100%	315	8.7	8.9

** Refer to "Emissions Data Sheet" for maximum fuel flow for EPA and SCAQMD permitting purposes.

COOLING

		STANDBY
Air Flow (inlet air combustion and radiator)	ft ³ /min (m ³ /min)	5760 (163.1)
System Coolant Capacity	Gal (Liters)	6.3 (23.9)
Heat Rejection to Coolant	BTU/hr	212,800
Max. Operating Air Temp on Radiator	°F (°C)	122 (50)
Max. Ambient Temperature	°F (°C)	104 (40)
Maximum Radiator Backpressure	in H ₂ O	1.50

COMBUSTION AIR REQUIREMENTS

		STANDBY
Flow at Rated Power	cfm	160

ENGINE

		STANDBY
Rated Engine Speed	rpm	1800
Horsepower at Rated kW***	hp	80
Piston Speed	ft/min	1251
BMEP	psi	84.7

*** Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		STANDBY
Exhaust Flow (Rated Output)	cfm (m ³ /min)	455 (12.9)
Maximum Recommended Back Pressure	inHg	1.5
Exhaust Temp (Rated Output)	°F (°C)	1000 (537.8)
Exhaust Outlet Size (Open Set)	in	2.5"

G50LG

standard features and options

GENERATOR SET

● Genset Vibration Isolation	Std
○ IBC Seismic Certified/Seismic Rated Vibration Isolators	Opt
○ Steel Enclosure	Opt
○ Aluminum Enclosure	Opt
○ Enclosure Lighting Kits	Opt

ENGINE SYSTEM

General

● Oil Drain Extension	Std
○ Oil Heater	Opt
○ Critical Exhaust Silencer (Enclosed Sets)	Opt
● Stainless steel flexible exhaust connection	Std
● Air cleaner	Std
● Fan guard	Std
● Radiator duct adapter	Std

Fuel System

● Fuel lockoff solenoid	Std
● Secondary Fuel Regulator	Std
○ Flexible fuel lines	Opt
○ Automatic Gaseous Dual Fuel	Opt

Cooling System

○ 120VAC Coolant Heater	Opt
○ 208VAC Coolant Heater	Opt
○ 240VAC Coolant Heater	Opt
○ Other Coolant Heater	Opt
● Closed Coolant Recovery System	Std
● UV/Ozone resistant hoses	Std
● Factory-Installed Radiator	Std
● Radiator Drain Extension	Std

Engine Electrical System

● Battery charging alternator	Std
● Battery cables	Std
● Battery tray	Std
○ Battery box	Opt
○ Battery heater	Opt
● Solenoid activated starter motor	Std
○ 2.5A UL battery charger	Opt
○ 10A UL float/equalize battery charger	Opt
● Rubber-booted engine electrical connections	Std

ALTERNATOR SYSTEM

● UL2200 GENprotect™	Std
○ Main Line Circuit Breaker	Opt
○ 2nd Circuit Breaker	Opt
○ 3rd Circuit Breaker	Opt
○ Alternator Upsizing	Opt
○ Anti-Condensation Heater	Opt
○ Tropical coating	Opt
○ Permanent Magnet Generator	Opt

CONTROL SYSTEM

Control Panel

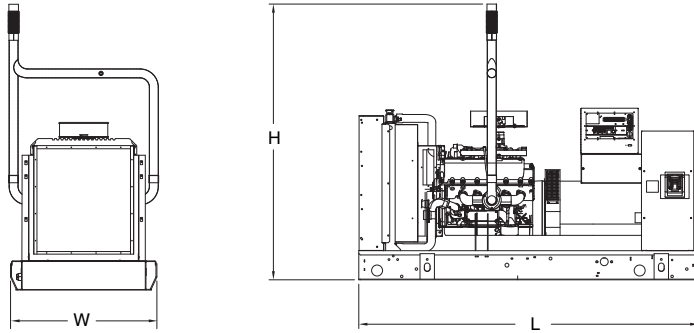
● Digital H-Panel Controller	Std
● Programmable Crank Limiter	Std
● Programmable Crank Limiter	Std
○ 21-Light Remote Annunciator	Opt
○ Remote Relay Panel (8 or 16)	Opt
● 7-Day Programmable Exerciser	Std
● Special Applications Programmable PLC	Std
● RS-485 Communications	Std
● All-Phase Sensing DVR	Std
● Full System Status	Std
● 2-Wire Start Compatible	Std
● Power Output (kW)	Std
● Power Factor	Std
● Reactive Power	Std
● All phase AC Voltage	Std
● All phase Currents	Std
● Oil Pressure	Std
● Coolant Temperature	Std
● Coolant Level	Std
○ Oil Temperature	Opt
● Low Fuel Pressure	Std
● Engine Speed	Std
● Battery Voltage	Std
● Frequency	Std
● Date/Time Fault History (Event Log)	Std
○ Low-Speed Exercise	-
● Isochronous Governor Control	Std
● -40deg C - 70deg C Operation	Std
● Waterproof Plug-In Connectors	Std
● Audible Alarms and Shutdowns	Std
● Not in Auto (Flashing Light)	Std
● Auto/Off/Manual Switch	Std
● E-Stop (Red Mushroom-Type)	Std
○ Remote E-Stop (Break Glass-Type, Surface Mount)	Opt
○ Remote E-Stop (Red Mushroom-Type, Surface Mount)	Opt
○ Remote E-Stop (Red Mushroom-Type, Flush Mount)	Opt
● NFPA 110 Level I and II (Programmable)	Std
● Remote Communication - RS232	Std
○ Remote Communication - Modem	-
○ Remote Communication - Ethernet	-
○ 10A Run Relay	-

Alarms (Programmable Tolerances, Pre-Alarms and Shutdowns)

○ Low Fuel	
● Oil Pressure (Pre-programmed Low Pressure Shutdown)	Std
● Coolant Temperature (Pre-programmed High Temp Shutdown)	Std
● Coolant Level (Pre-programmed Low Level Shutdown)	Std
○ Oil Temperature	Opt
● Engine Speed (Pre-programmed Overspeed Shutdown)	Std
● Voltage (Pre-programmed Overvoltage Shutdown)	Std
● Battery Voltage	Std

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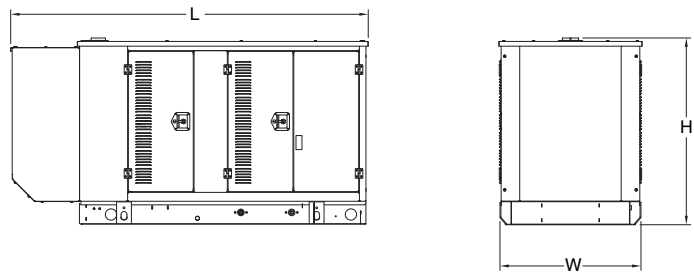
dimensions, weights and sound levels



OPEN SET (Includes Exhaust Flex)

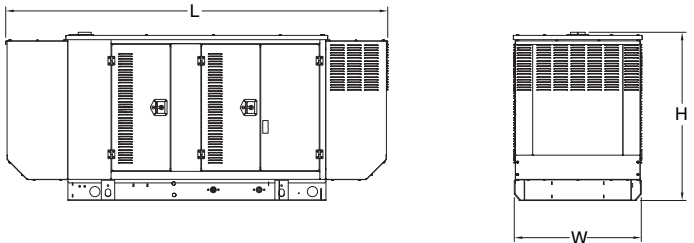
L	W	H	WT	dBA*
93	40	75	1930	84

5 of 5



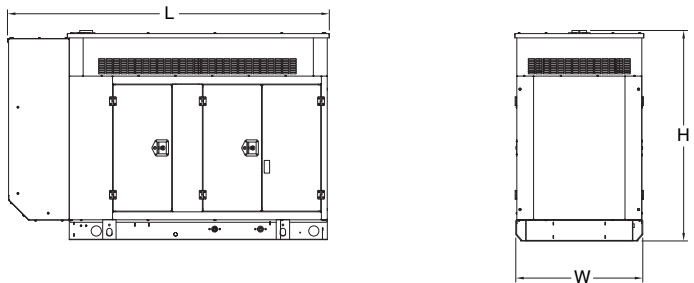
STANDARD ENCLOSURE

L	W	H	WT	dBA*
112	41	55	2371	76



LEVEL 1 ACOUSTIC ENCLOSURE

L	W	H	WT	dBA*
129	41	55	2591	73



LEVEL 2 ACOUSTIC ENCLOSURE

L	W	H	WT	dBA*
112	41	68	2812	71

*All measurements are approximate and for estimation purposes only. Sound levels measured at 23ft (7m) and does not account for ambient site conditions.

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Cat® Dealer for detailed installation drawings.

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