

SG100 SG130

Liquid Cooled Gas Engine Generator Sets

Standby Power Rating

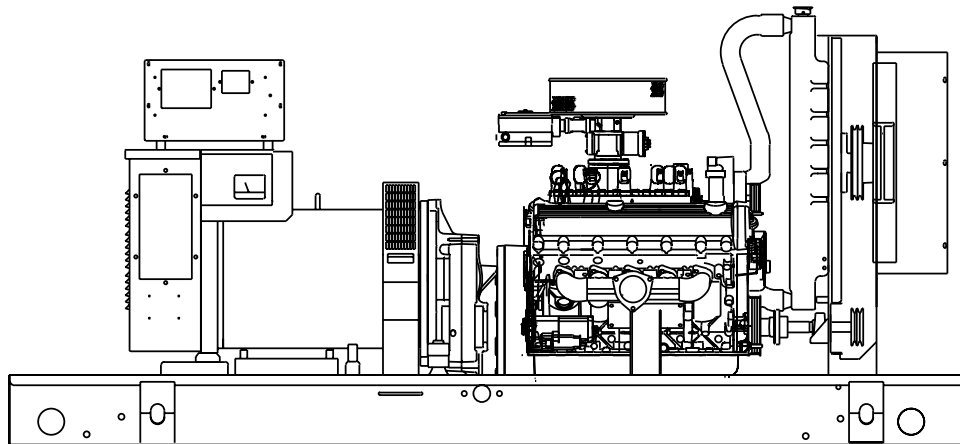
100KW 60 Hz / 100KVA 50 Hz

130KW 60 Hz / 130KVA 50 Hz

Prime Power Rating

80KW 60 Hz / 80KVA 50 Hz

104KW 60 Hz / 104KVA 50 Hz



Power Matched

GENERAC 6.8GN ENGINE

Naturally Aspirated - Gear Driven

FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
 - ✓ PROTOTYPE TESTED
 - ✓ SYSTEM TORSIONAL TESTED
 - ✓ ELECTRO-MAGNETIC INTERFERENCE
 - ✓ NEMA MG1 EVALUATION
 - ✓ MOTOR STARTING ABILITY
 - ✓ SHORT CIRCUIT TESTING
 - ✓ UL2200 COMPLIANCE AVAILABLE
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine.
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component. You are never on your own when you own a GENERAC POWER SYSTEM.
- **GENERAC TRANSFER SWITCHES, SWITCHGEAR AND ACCESSORIES.** Long life and reliability is synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems, accessories, switchgear and controls for total system compatibility.

GENERAC®

POWER SYSTEMS, INC.

APPLICATION & ENGINEERING DATA

SG100/SG130

GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
TELEPHONE INTERFERENCE FACTOR (TIF)	<50
ALTERNATOR	Self-ventilated and drip-proof
BEARINGS (PRE-LUBED & SEALED)	1
COUPLING	Direct, Flexible Disc
LOAD CAPACITY (STANDBY)	100%

NOTE: Emergency loading in compliance with NFPA 99, NFPA 110, paragraph 5-13.2.6. Generator rating and performance in accordance with ISO8528-5, BS5514, SAE J1349, ISO3046 and DIN6271 standards.

EXCITATION SYSTEM

<input type="checkbox"/> BRUSHLESS	Magnetically coupled DC current ✓
	Eight-pole exciter w/ battery-driven field boost ✓
	Mounted outboard of main bearing ✓
<input type="checkbox"/> PERMANENT MAGNET EXCITER	Eighteen pole exciter ✓
	Magnetically coupled DC current ✓
	Mounted outboard of main bearing ✓
REGULATION	Solid-state ✓
	±1% regulation ✓

GENERATOR FEATURES

- Four pole, revolving field generator, connected to the engine shaft through a heavy-duty, gear reduction unit for permanent alignment.
- Generator meets the temperature rise standards for class "F" insulation as defined by NEMA MG1-32.6, while the insulation system meets the requirements for the higher class "H" rating.
- All prototype models have passed a three-phase symmetrical short circuit test to assure system protection and reliability.
- All prototype models are tested for motor starting ability by measuring the instantaneous voltage dip with a waveform data acquisition system.
- All models utilize an advanced wire harness design for reliable interconnection within the circuitry.
- Magnetic circuit, including amortisseur windings, tooth and skewed stator design, provides a minimal level of waveform distortion and an electromagnetic interference level which meets accepted requirements for standard AM radio, TV, and marine radio telephone applications.
- Voltage waveform deviation, total harmonic content of the AC waveform, and T.I.F. (Telephone Influence Factor) have been evaluated to acceptable standards in accordance with NEMA MG1-32.
- Alternator is self-ventilated and drip-proof constructed.
- Fully life-tested protective systems, including "field circuit and thermal overload protection" and optional main-line circuit breakers capable of handling full output capacity.
- System Torsional acceptability confirmed during Prototype Testing.

ENGINE SPECIFICATIONS

MAKE	GENERAC
MODEL	6.8GN
CYLINDERS	V-10
DISPLACEMENT	6.8 Liter (417 cu. in.)
BORE	90.2 mm (3.55 in.)
STROKE	105.8 mm (4.17 in.)
COMPRESSION RATIO	9:1
INTAKE AIR	Naturally Aspirated
NUMBER OF MAIN BEARINGS	6
CONNECTING RODS	Aluminum Alloy
CYLINDER HEAD	Cast Iron
PISTONS	Aluminum Alloy
CRANKSHAFT	Forged Steel

VALVE TRAIN

CAM FOLLOWER	Hydraulic
INTAKE VALVE MATERIAL	Copper Infiltrated Iron Base
EXHAUST VALVE MATERIAL	Copper Infiltrated Iron Base
HARDENED VALVE SEATS	Standard

ENGINE GOVERNOR

<input type="checkbox"/> ELECTRONIC	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ...	0.5%
STEADY STATE REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear
OIL FILTER	Full flow, Spin-On Cartridge
CRANKCASE CAPACITY	(6 qts.)

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, closed recovery
WATER PUMP	Pre-lubed, self-sealing
TYPE OF FAN	Puller
NUMBER OF FAN BLADES	7
DIAMETER OF FAN	580 mm (23 in.)
COOLANT HEATER	120V, 1800 W

FUEL SYSTEM

FUEL	
<input type="checkbox"/> Natural Gas or L.P. Vapor	Standard
<input type="checkbox"/> L.P. Liquid Withdrawal	Optional
CARBURETOR	Down draft
SECONDARY FUEL REGULATOR	Nat. Gas or L.P. Vapor Systems
HOT WATER VAPORIZER	L.P. Liquid Withdrawal Systems
AUTOMATIC FUEL LOCKOFF SOLENOID	Standard
OPERATING FUEL PRESSURE VAPOR SYSTEMS	7" to 14" H ₂ O

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	18 Amps at 12 V
STARTER MOTOR	12 V
RECOMMENDED BATTERY	(1) - 12 V, 90 A.H., 27F
GROUND POLARITY	Negative

Rating definitions - Standby: Applicable for supplying emergency power for the duration of the utility power outage. No overload capability is available for this rating. (All ratings in accordance with BS5514, ISO3046 and DIN6271). Prime (Unlimited Running Time): Applicable for supplying electric power in lieu of commercially purchased power. Prime power is the maximum power available at variable load. A 10% overload capacity is available for 1 hour in 12 hours. (All ratings in accordance with BS5514, ISO3046, ISO8528 and DIN6271).

SG100/SG130

OPERATING DATA

	STANDBY				PRIME							
	SG100		SG130		SG100		SG130					
GENERATOR OUTPUT VOLTAGE/KW-60Hz	KW-NG	AMP	KW-LP	AMP	KW-NG	AMP	KW-LP	AMP	KW-NG	AMP	KW-LP	AMP
120/240V, 1-phase, 1.0 pf	100	417	105	438	130	542	135	563	80	333	84	350
120/208V, 3-phase, 0.8 pf	100	347	105	364	130	451	135	468	80	278	84	291
120/240V, 3-phase, 0.8 pf	100	301	105	316	130	391	135	406	80	241	84	253
277/480V, 3-phase, 0.8 pf	100	150	105	158	130	195	135	203	80	120	84	126
600V, 3-phase, 0.8 pf	100	120	105	126	130	156	135	162	80	96	84	101
	NOTE: Consult your Generac dealer for additional voltages.											
GENERATOR OUTPUT VOLTAGE/KVA-50Hz	KVA-NG	AMP	KVA-LP	AMP	KVA-NG	AMP	KVA-LP	AMP	KVA-NG	AMP	KVA-LP	AMP
110/220V, 1-phase, 1.0 pf	80	291	84	305	104	378	108	393	64	233	67	244
115/200V, 3-phase, 0.8 pf	100	289	105	303	130	375	135	390	80	231	84	242
100/200V, 3-phase, 0.8 pf	100	289	105	303	130	375	135	390	80	231	84	242
231/400V, 3-phase, 0.8 pf	100	144	105	152	130	188	135	195	80	115	84	121
480V, 3-phase, 0.8 pf												
	NOTE: Consult your Generac dealer for additional voltages.											
MOTOR STARTING KVA	240V		480V		240V		480V		240V		480V	
Maximum at 35% instantaneous voltage dip with standard alternator—50/60 Hz	175/210	212/254	234/281	276/331	175/210	212/254	234/281	276/331	175/210	212/254	234/281	276/331
with optional alternator—50/60 Hz	417/500	575/690	417/500	575/690	417/500	575/690	417/500	575/690	417/500	575/690	417/500	575/690
FUEL	N.G.	L.P.	N.G.	L.P.	N.G.	L.P.	N.G.	L.P.	N.G.	L.P.	N.G.	L.P.
Fuel consumption—60 Hz—100% Load												
ft. ³ hr.	1158	465	1494	600	926	372	1195	480	1195	480	926	372
m ³ hr.	32.8	13.2	42.3	17.0	26.2	10.5	33.8	13.6	33.8	13.6	26.2	10.5
Fuel consumption—50 Hz—100% Load												
ft. ³ hr.	926	372	1195	480	741	298	956	384	956	384	741	298
m ³ hr.	26.2	10.5	33.8	13.6	21.0	8.4	27.1	10.9	27.1	10.9	21.0	8.4
COOLING												
Coolant capacity System - lit. (US gal.)	23.7 (6.3)		23.7 (6.3)		23.7 (6.3)		23.7 (6.3)		23.7 (6.3)		23.7 (6.3)	
Engine - lit. (US gal.)	12.3 (3.3)		12.3 (3.3)		12.3 (3.3)		12.3 (3.3)		12.3 (3.3)		12.3 (3.3)	
Radiator - lit. (US gal.)	11.4 (3.0)		11.4 (3.0)		11.4 (3.0)		11.4 (3.0)		11.4 (3.0)		11.4 (3.0)	
Coolant flow/min. 60 Hz - lit. (US gal.)	198 (52.3)		268 (70.5)		198 (52.3)		268 (70.5)		198 (52.3)		268 (70.5)	
50 Hz - lit. (US gal.)	165 (43.6)		223 (58.9)		165 (43.6)		223 (58.9)		165 (43.6)		223 (58.9)	
Heat rejection to coolant BTU/hr.	340,000		460,000		272,000		368,000		272,000		368,000	
Inlet air 60 Hz - m ³ /min. (cfm)	156 (5510)		170 (6000)		156 (5510)		170 (6000)		156 (5510)		170 (6000)	
50 Hz - m ³ /min. (cfm)	130 (4590)		142 (5015)		130 (4590)		142 (5014)		130 (4590)		142 (5014)	
Max. operating air temp onto radiator												
*see note °C (°F)	60 (140)		60 (140)		60 (140)		60 (140)		60 (140)		60 (140)	
Max. operating ambient temp												
*see note °C (°F)	50 (122)		50 (122)		60 (140)		60 (140)		60 (140)		60 (140)	
Max. external pressure drop on radiator in. H ₂ O	0.5		0.5		0.5		0.5		0.5		0.5	
COMBUSTION AIR REQUIREMENTS												
Flow at rated power 60 Hz - m ³ /min. (cfm)	8.3 (295)		10.7 (379)		6.7 (236)		8.6 (303)		6.7 (236)		8.6 (303)	
50 Hz - m ³ /min. (cfm)	6.6 (235)		8.5 (302)		5.3 (188)		6.8 (241)		5.3 (188)		6.8 (241)	
EXHAUST												
Exhaust flow at rated output 60 Hz - m ³ /min. (cfm)	26.6 (938)		34.0 (1206)		21.3 (751)		27.0 (965)		21.3 (751)		27.0 (965)	
50 Hz - m ³ /min. (cfm)	21.2 (748)		28.0 (1005)		16.9 (598)		23.0 (804)		16.9 (598)		23.0 (804)	
Maximum recommended back pressure Kpa (Hg)	10.0 (2.9")		10.0 (2.9")		10.0 (2.9")		10.0 (2.9")		10.0 (2.9")		10.0 (2.9")	
Exhaust temp at rated output °C (°F)	677 (1250.0)		677 (1250.0)		619 (1146.0)		619 (1146.0)		619 (1146.0)		619 (1146.0)	
Exhaust outlet size (2) mm (in.)	64 (2.5)		64 (2.5)		64 (2.5)		64 (2.5)		64 (2.5)		64 (2.5)	
ENGINE												
Rated RPM 60 / 50 Hz	2300 / 1917		3000 / 2500		2300 / 1917		3000 / 2500		2300 / 1917		3000 / 2500	
HP at rated KW 60 / 50 Hz	147 / 117		189 / 151		119 / 94		152 / 121		119 / 94		152 / 121	
Piston speed 60 Hz - m/sec. (ft./min.)	8.1 (1597)		10.6 (2083)		8.1 (1597)		10.6 (2083)		8.1 (1597)		10.6 (2083)	
50 Hz - m/sec. (ft./min.)	6.8 (1331)		8.8 (1736)		6.8 (1331)		8.8 (1736)		6.8 (1331)		8.8 (1736)	
BMEP 60 / 50 Hz - psi	122.3 / 116.9		120.5 / 115.1		98.5 / 94.0		96.9 / 92.5		98.5 / 94.0		96.9 / 92.5	
POWER ADJUSTMENT FOR AMBIENT CONDITIONS												
Temperature												
5% for every 10°C above - °C	25		25		25		25		25		25	
2.77% for every 10°F above - °F	77		77		77		77		77		77	
Altitude												
1.1% for every 100 m above - m	183		183		183		183		183		183	
3.5% for every 1000 ft. above - ft.	600		600		600		600		600		600	

* Note: Values given are maximum temperatures to which power adjustments can be applied. Consult your Generac Power Systems representative if operating conditions exceed these maximums.

STANDARD ENGINE & SAFETY FEATURES

SG100/SG130

- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Rubber-Booted Engine Electrical Connections
- Fuel Lockoff Solenoid
- Secondary Fuel Regulator (N.G. and L.P.)
- Stainless Steel Flexible Exhaust Connection
- Battery Charge Alternator
- Battery Cables
- Battery Tray
- Vibration Isolation of Unit to Mounting Base
- 12 Volt, Solenoid-Activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Ischronous Governor

OPTIONS

■ OPTIONAL COOLING SYSTEM ACCESSORIES

- Radiator Duct Adapter
- 208/240V Coolant Heater

■ OPTIONAL FUEL ACCESSORIES

- Flexible Fuel Lines
- L.P. Liquid Withdrawal
- Automatic Gaseous Dual Fuel

■ OPTIONAL EXHAUST ACCESSORIES

- Single Exhaust Kit for Indoor Installations

■ OPTIONAL ELECTRICAL ACCESSORIES

- Battery Heater
- 2A Battery Charger
- 10A Dual Rate Battery Charger

■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Strip Heater
- Alternator Tropicalization
- Main Line Circuit Breaker

■ CONTROL CONSOLE OPTIONS

- Analog Control "C" Panel (Bulletin 0151160SBY)
- Analog/Digital Control "E" Panel (Bulletin 0161310SBY)

■ ADDITIONAL OPTIONAL EQUIPMENT

- Automatic Transfer Switch
- 3 Light Remote Annunciator
- 5 Light Remote Annunciator
- 20 Light Remote Annunciator

■ ADDITIONAL OPTIONAL EQUIPMENT (CONT.)

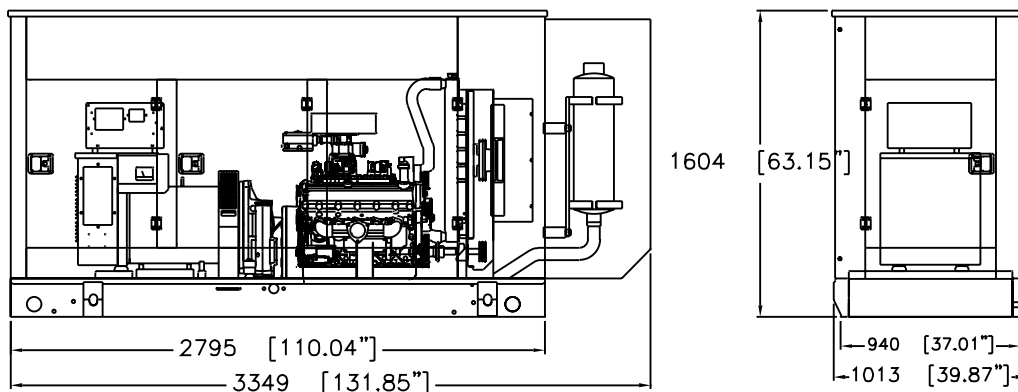
- Remote Relay Panels
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communications Software

■ OPTIONAL ENCLOSURES

- Weather Protective
- Sound Attenuated
- Aluminum and Stainless Steel
- Enclosed Muffler

Distributed by:

Design and specifications subject to change without notice. Dimensions shown are approximate. Contact your Generac dealer for certified drawings. DO NOT USE THESE DIMENSIONS FOR INSTALLATION PURPOSES.



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