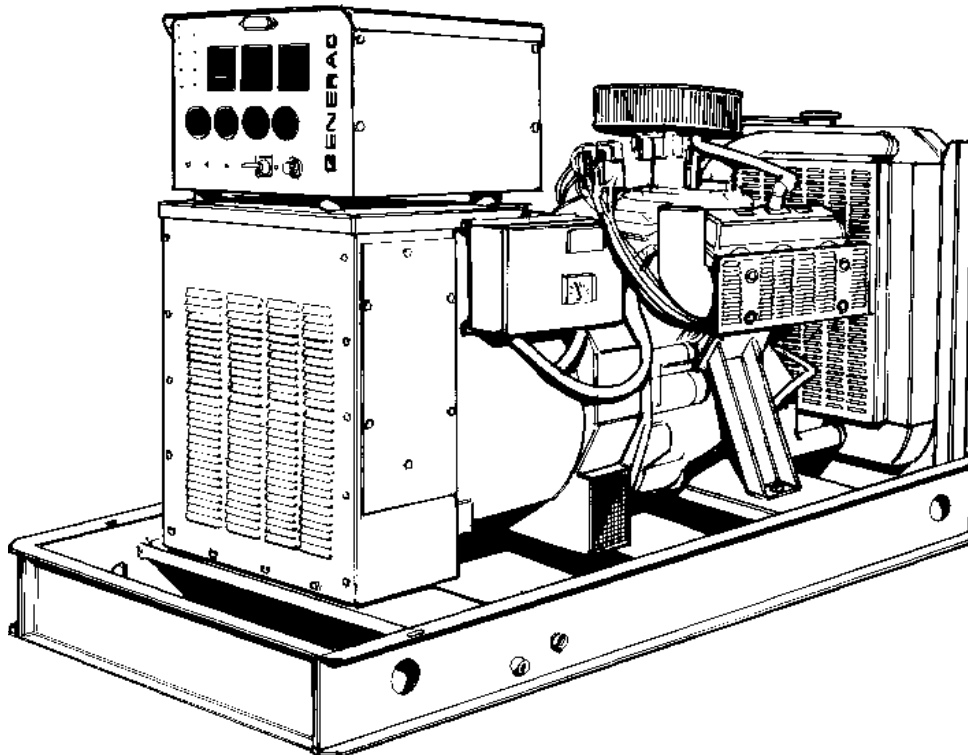


SG045

Liquid Cooled Gas Engine Generator Sets

Standby Power Rating
45KW 60 Hz / 45KVA 50 Hz

Prime Power Rating
36KW 60 Hz / 36KVA 50 Hz



Power Matched
GENERAC 4.3GN ENGINE
Naturally Aspirated

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
 - ✓ UL 2200 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

SG045

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%
LOAD CAPACITY (PRIME)	110%

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.

EXCITATION SYSTEM

<input type="checkbox"/> DIRECT	DC excitation system ✓
	Low-velocity brushes and slip rings ✓
<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, directly connected to the engine shaft through a heavy-duty, flexible disc 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	4.3GN
CYLINDERS	V-6
DISPLACEMENT	4.3 Liter (262 cu. in.)
BORE	101.6 mm (4.00 in.)
STROKE	88 mm (3.48 in.)
COMPRESSION RATIO	9.4:1
INTAKE AIR	Naturally Aspirated
NUMBER OF MAIN BEARINGS	4
CONNECTING RODS	6-Drop pm steel
CYLINDER HEAD	Cast Iron
PISTONS	6-Notched Head, Aluminum Alloy
CRANKSHAFT	Nodular Iron

VALVE TRAIN

LIFTER TYPE	Hydraulic Roller
INTAKE VALVE MATERIAL	Stainless Steel
EXHAUST VALVE MATERIAL	Stellite Faced
HARDENED VALVE SEATS	No

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	Gerotor
OIL FILTER	Full flow, spin on cartridge
CRANKCASE CAPACITY	4.25 Liters (4.5 qts.)

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, closed recovery
WATER PUMP	Pre-lubed, self-sealing
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	10
DIAMETER OF FAN	431 mm (17 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 15" H ₂ O

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	15 Amps at 12 V
STARTER MOTOR	12 V
RECOMMENDED BATTERY	(1) - 12 V, 700 CCA, 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).

SG045

OPERATING DATA

	STANDBY				PRIME			
	SG045				SG045			
GENERATOR OUTPUT VOLTAGE/KW—60Hz	NG	Rated AMP	LP	Rated AMP	NG	Rated AMP	LP	Rated AMP
120/240V, 1-phase, 1.0 pf	40	167	45	188	33	138	36	150
120/208V, 3-phase, 0.8 pf	40	139	45	156	33	115	36	125
120/240V, 3-phase, 0.8 pf	40	120	45	135	33	99	36	108
277/480V, 3-phase, 0.8 pf	40	60	45	68	33	50	36	54
NOTE: Consult your Generac dealer for additional voltages.								
GENERATOR OUTPUT VOLTAGE/KVA-50Hz	NG	Rated AMP	LP	Rated AMP	NG	Rated AMP	LP	Rated AMP
110/220V, 1-phase, 1.0 pf	32	145	36	164	26	114	29	127
115/200V, 3-phase, 0.8 pf	40	116	45	130	33	95	36	104
100/200V, 3-phase, 0.8 pf	40	116	45	130	33	95	36	104
231/400V, 3-phase, 0.8 pf	40	58	45	65	33	48	36	52
NOTE: Consult your Generac dealer for additional voltages.								
MOTOR STARTING KVA								
Maximum at 35% instantaneous voltage dip with standard alternator—50/60 Hz	231/240V		400/480V		231/240V		400/480V	
with optional alternator—50/60 Hz	83/100		94/113		83/100		94/113	
	175/210		212/254		175/210		212/254	
FUEL	N.G.		L.P.		N.G.		L.P.	
Fuel consumption—60 Hz—100% Load								
ft. ³ hr.	735		310		683		251	
m ³ hr.	20.8		8.8		19.3		7.1	
Fuel consumption—50 Hz—100% Load								
ft. ³ hr.	648		261		492		212	
m ³ hr.	18.3		7.4		13.9		6.0	
COOLING								
Coolant capacity System - lit. (US gal.)	17 (4.5)				17 (4.5)			
Coolant flow/min. 60 Hz - lit. (US gal.)	90 (24)				90 (24)			
50 Hz - lit. (US gal.)	75 (20)				75 (20)			
Heat rejection to coolant BTU/hr.	235,000				200,000			
Inlet air 60 Hz - m ³ /min. (cfm)	68 (2400)				68 (2400)			
50 Hz - m ³ /min. (cfm)	57 (2000)				57 (2000)			
Max. operating air temp. onto radiator								
*see note °C (°F)	60 (140)				60 (140)			
Max. operating ambient temp								
*see note °C (°F)	50 (122)				50 (122)			
COMBUSTION AIR REQUIREMENTS								
Flow at rated power 60 Hz - m ³ /min. (cfm)	4.0 (124.6)				3.2 (99.7)			
50 Hz - m ³ /min. (cfm)	3.3 (101.6)				2.5 (81.3)			
EXHAUST								
Exhaust flow at rated output								
60 Hz - m ³ /min. (cfm)	10.3 (362)				8.2 (289.6)			
50 Hz - m ³ /min. (cfm)	8.4 (295)				6.7 (236.1)			
Max recommended back pressure Kpa/(Hg)	5.0 (1.5")				5.0 (1.5")			
Exhaust temp at rated output °C (°F)	650 (1200)				593 (1100)			
Exhaust outlet size N.P.T. (female)	(2) - 2.5"				(2) - 2.5"			
ENGINE								
Rated RPM 60 Hz / 50 Hz	1800 / 1500				1800 / 1500			
HP at rated KW 60 Hz / 50 Hz	62.3 / 50.8				50.3 / 39.7			
Piston speed 60 Hz	318 (1044)				318 (1044)			
50 Hz	265 (870)				265 (870)			
BMEP 60 Hz / 50 Hz - psi	119 / 114				80 / 77			
POWER ADJUSTMENT FOR AMBIENT CONDITIONS								
Temperature								
5% for every 10°C above - °C	43				43			
2.77% for every 10°F above - °F	110				110			
Altitude								
1.1% for every 100 m above - m	150				150			
3.5% for every 1000 ft. above - ft.	500				500			

* 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.

- 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.)
- 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
- Isochronous Governor
- Radiator Duct Adaptor
- Coolant Heater

OPTIONS

■ OPTIONAL COOLING SYSTEM ACCESSORIES

- 208/240V Coolant Heater

■ OPTIONAL FUEL ACCESSORIES

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

■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer (Std. on enclosed gensets)
- Single Exhaust Kit for Indoor Installations

■ OPTIONAL ELECTRICAL ACCESSORIES

- Battery, 12 Volt, 90 A.H., 27F
- Battery Heater
- 2A Battery Charger
- 10A Dual Rate Battery Charger

■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Strip Heater
- Alternator Tropicalization
- Voltage Changeover Board
- Main Line Circuit Breaker

■ CONTROL CONSOLE OPTIONS

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

■ ADDITIONAL OPTIONAL EQUIPMENT

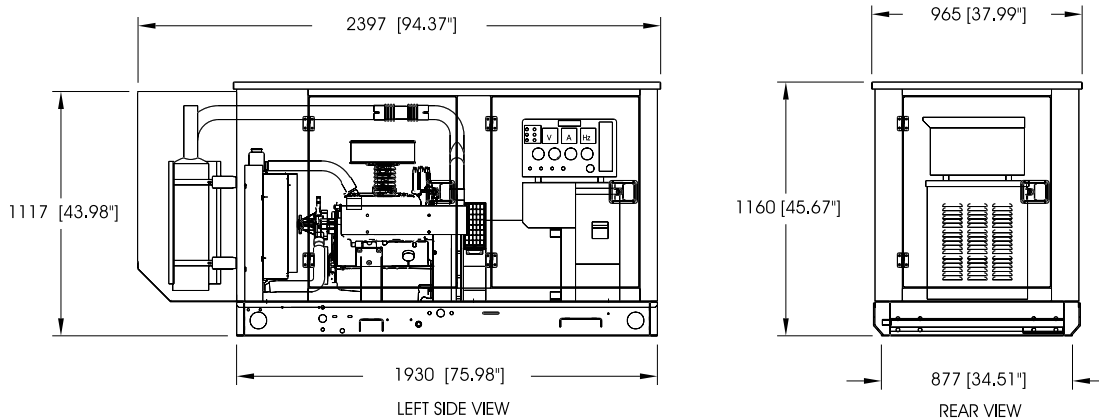
- Automatic Transfer Switch
- 3 Light Remote Annunciator
- 5 Light Remote Annunciator
- 20 Light Remote Annunciator
- Road Ready Trailer
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- Remote Relay Panels

■ OPTIONAL ENCLOSURE

- Weather Protective
- Sound Attenuating
- 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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