

SG150 SG175

Liquid Cooled Gas Engine Generator Sets

Standby Power Rating

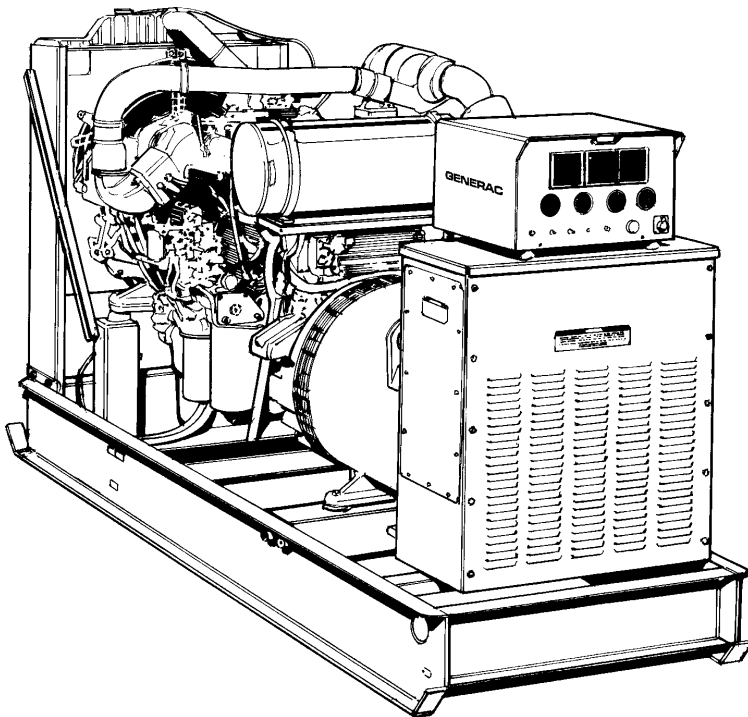
150KW 60 Hz / 150KVA 50 Hz

175KW 60 Hz / 175KVA 50 Hz

Prime Power Rating

123KW 60 Hz / 135KVA 50 Hz

144KW 60 Hz / 158KVA 50 Hz



Power Matched

GENERAC 13.3GTA ENGINE

Turbocharged/Aftercooled

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

SG150/SG175

GENERATOR SPECIFICATIONS

TYPE	Four-pole, revolving field
ROTOR INSULATION	Class H
STATOR INSULATION	Class H
TOTAL HARMONIC DISTORTION	<3%
TELEPHONE INTERFERENCE FACTOR (TIF)	<30
SHORT CIRCUIT CURRENT	300%
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 standards.

EXCITATION SYSTEM

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	13.3GTA
CYLINDERS	6 in-line
DISPLACEMENT	13.3 Liter (811 cu. in.)
BORE	137 mm (5.39 in.)
STROKE	150 mm (5.91 in.)
COMPRESSION RATIO	10.5:1
INTAKE AIR	Turbocharged/Aftercooled
NUMBER OF MAIN BEARINGS	7
CONNECTING RODS	6-Carbon Steel
CYLINDER HEAD	Cast Iron with Overhead Valve
CYLINDER LINERS	Wet/Replaceable
IGNITION	Altronic CD1
PISTONS	Heat-Resistant Alloy with 4 Rings
CRANKSHAFT	Induction-Hardened, Die-Forged Carbon Steel

VALVE TRAIN

LIFTER TYPE	Solid
INTAKE VALVE MATERIAL	Special Heat Resistant Steel
EXHAUST VALVE MATERIAL	Inconel Alloy High Temp.
HARDENED VALVE SEATS	High Temp. Alloy Stellite Faced

ENGINE GOVERNOR

ELECTRONIC	Standard
FREQUENCY REGULATION, NO-LOAD TO FULL LOAD ...	0.5%
STEADY STATE REGULATION	±0.25%

LUBRICATION SYSTEM

TYPE OF OIL PUMP	Gear Driven
OIL FILTER	Full flow, cartridge
CRANKCASE CAPACITY	27 Liters (7.13 gal.)

COOLING SYSTEM

TYPE OF SYSTEM	Pressurized, closed recovery
WATER PUMP	Pre-lubed, self-sealing
TYPE OF FAN	Pusher
NUMBER OF FAN BLADES	6
DIAMETER OF FAN	30 in.
COOLANT HEATER	2-240V, 1000 W

FUEL SYSTEM

FUEL	<input type="checkbox"/> Natural Gas	Standard
CARBURETOR	Down draft	
SECONDARY FUEL REGULATOR	Nat. Gas	
AUTOMATIC FUEL LOCKOFF SOLENOID	Standard	
OPERATING FUEL PRESSURE SYSTEMS	7" to 15" H ₂ O	
	<input type="checkbox"/> OPTIONAL HIGH PRESSURE (2 to 20 PSI)	
LOW PRESSURE INPUT (7" to 15" H ₂ O)	Standard	

ELECTRICAL SYSTEM

BATTERY CHARGE ALTERNATOR	20 Amps at 24 V
STARTER MOTOR	24 V
RECOMMENDED BATTERY	(2) - 12 V, 135 A.H., 40
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).

SG150/SG175

OPERATING DATA

	STANDBY				PRIME			
	SG150		SG175		SG150		SG175	
GENERATOR OUTPUT VOLTAGE/KW-60Hz	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>
120/240V, 1-phase, 1.0 pf	100	417	120	500	100	417	120	500
120/208V, 3-phase, 0.8 pf	150	521	175	608	123	427	144	500
120/240V, 3-phase, 0.8 pf	150	452	175	527	123	370	144	434
277/480V, 3-phase, 0.8 pf	150	226	175	263	123	185	144	217
600V, 3-phase, 0.8 pf	150	181	175	211	123	148	144	173
	NOTE: Consult your Generac dealer for additional voltages.							
GENERATOR OUTPUT VOLTAGE/KVA-50Hz	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>	<u>N.G.</u>	<u>Rated AMP</u>
110/220V, 1-phase, 1.0 pf	100	455	120	545	100	455	120	545
115/200V, 3-phase, 0.8 pf	150	434	175	506	135	390	158	457
100/200V, 3-phase, 0.8 pf	150	434	175	506	135	390	158	457
231/400V, 3-phase, 0.8 pf	150	217	175	253	135	195	158	228
480V, 3-phase, 0.8 pf	150	181	175	211	135	163	158	190
	NOTE: Consult your Generac dealer for additional voltages.							
MOTOR STARTING KVA	Maximum at 35% instantaneous voltage dip with standard alternator—50/60 Hz		Maximum at 35% instantaneous voltage dip with optional alternator—50/60 Hz		Maximum at 35% instantaneous voltage dip with standard alternator—50/60 Hz		Maximum at 35% instantaneous voltage dip with optional alternator—50/60 Hz	
	<u>240V</u>	<u>480V</u>	<u>240V</u>	<u>480V</u>	<u>240V</u>	<u>480V</u>	<u>240V</u>	<u>480V</u>
	240/390	353/405	322/370	461/530	240/390	353/405	322/370	461/530
	797/960	1112/1340	797/960	1112/1340	797/960	1112/1340	797/960	1112/1340
FUEL	<u>N.G.</u>		<u>N.G.</u>		<u>N.G.</u>		<u>N.G.</u>	
Fuel consumption—60 Hz—100% Load								
ft. ³ hr.	1850		2200		1750		1800	
m ³ hr.	52		62		50		51	
Fuel consumption—50 Hz—100% Load								
ft. ³ hr.	1400		1675		1350		1400	
m ³ hr.	40		47		38		40	
COOLING								
Coolant capacity System - lit. (US gal.)	29 (7.7)		29 (7.7)		29 (7.7)		29 (7.7)	
Engine - lit. (US gal.)	21 (5.6)		21 (5.6)		21 (5.6)		21 (5.6)	
Radiator - lit. (US gal.)	8 (2.1)		8 (2.1)		8 (2.1)		8 (2.1)	
Coolant flow/min. 60 Hz (US gal.)	170 (45)		170 (45)		170 (45)		170 (45)	
50 Hz (US gal.)	142 (37.5)		142 (37.5)		142 (37.5)		142 (37.5)	
Heat rejection to coolant BTU/hr	440,000		440,000		380,000		400,000	
Inlet air 60 Hz - m ³ /min. (cfm)	493 (17400)		493 (17400)		493 (17400)		493 (17400)	
50 Hz - m ³ /min. (cfm)	410 (14500)		410 (14500)		410 (14500)		410 (14500)	
Max air temperature onto radiator °C (°F)	50 (122)		50 (122)		50 (122)		50 (122)	
Max. ambient air temperature °C (°F)	54 (130)		54 (130)		54 (130)		54 (130)	
COMBUSTION AIR REQUIREMENTS								
Flow at rated power 60 Hz - m ³ /min. (cfm)	10.1 (358)		11.1 (392)		9.8 (345)		10.1 (358)	
50 Hz - m ³ /min. (cfm)	8.8 (312)		9.7 (341)		8.5 (300)		8.8 (312)	
EXHAUST								
Exhaust flow at rated output 60 Hz - m ³ /min. (cfm)	23.6 (833)		26.8 (945)		22.1 (778)		22.8 (803)	
50 Hz - m ³ /min. (cfm)	20.6 (725)		23.3 (822)		19.2 (677)		19.8 (699)	
Maximum recommended back pressure Kpa(Hg)	5.0 (1.5")		5.0 (1.5")		5.0 (1.5")		5.0 (1.5")	
Exhaust temperature at rated output °F	1533		1542		1410		1507	
Exhaust outlet size I.D. (flange)	4"		4"		4"		4"	
ENGINE								
Rated RPM 60 Hz / 50 Hz	1800 / 1500		1800 / 1500		1800 / 1500		1800 / 1500	
HP at rated KW 60 Hz / 50 Hz	237 / 189		276 / 221		216 / 173		230 / 202	
Piston speed 60 Hz - m/min. (ft./min.)	541 (1773)		541 (1773)		541 (1773)		541 (1773)	
50 Hz	451 (1477)		451 (1477)		451 (1477)		451 (1477)	
BMEP 60 Hz / 50 Hz - psi	128 / 145		150 / 146		123 / 111		144 / 129	
DERATION FACTORS								
Temperature								
5% for every 10°C above - °C	43		43		43		43	
2.77% for every 10°F above - °F	110		110		110		110	
Altitude								
1.1% for every 100 m above - m	3049		2287		3049		2287	
3.5% for every 1000 ft. above - ft.	10,000		7500		10,000		7500	

STANDARD ENGINE & SAFETY FEATURES

SG150/SG175

- 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
- Isochronous Governor
- 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
- 24 Volt, Solenoid-Activated Starter Motor
- Air Cleaner
- Fan Guard
- Control Console
- Radiator Duct Adaptor

OPTIONS

■ OPTIONAL FUEL ACCESSORIES

- Flexible Fuel Lines

■ OPTIONAL EXHAUST ACCESSORIES

- Critical Exhaust Silencer

■ OPTIONAL ELECTRICAL ACCESSORIES

- Battery, (2) - 12 Volt, 135 A.H., 4DLT
- Battery, (2) - 12 Volt, 225 A.H., 8D
- Battery Heater
- 2A Battery Charger
- 10A Dual Rate Battery Charger

■ OPTIONAL ALTERNATOR ACCESSORIES

- Alternator Upsizing
- Alternator Strip Heater
- Alternator Tropicalization
- Voltage Changeover Switch
- 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

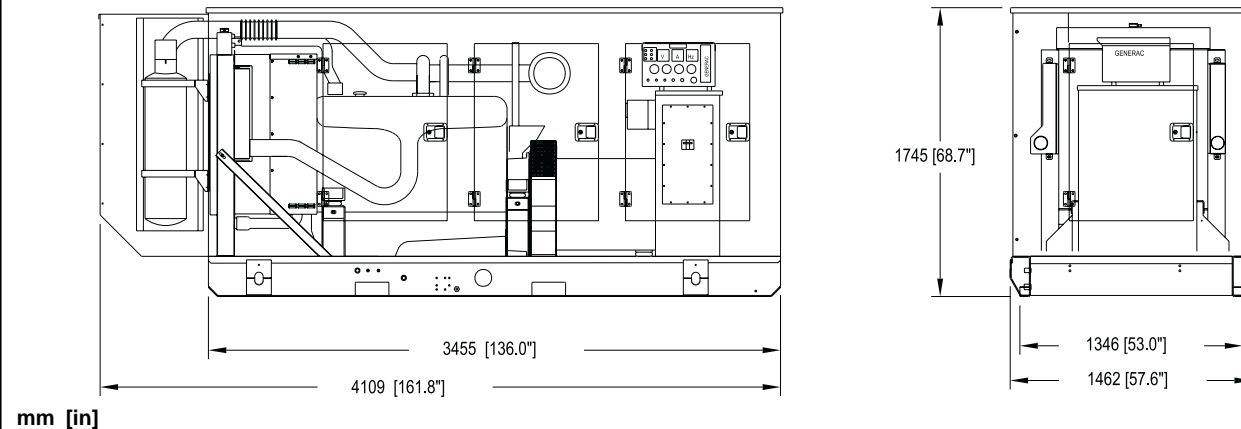
- Remote Relay Panels
- Unit Vibration Isolators
- Oil Make-Up System
- Oil Heater
- 5 Year Warranties
- Export Boxing
- GenLink® Communication Software

■ 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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