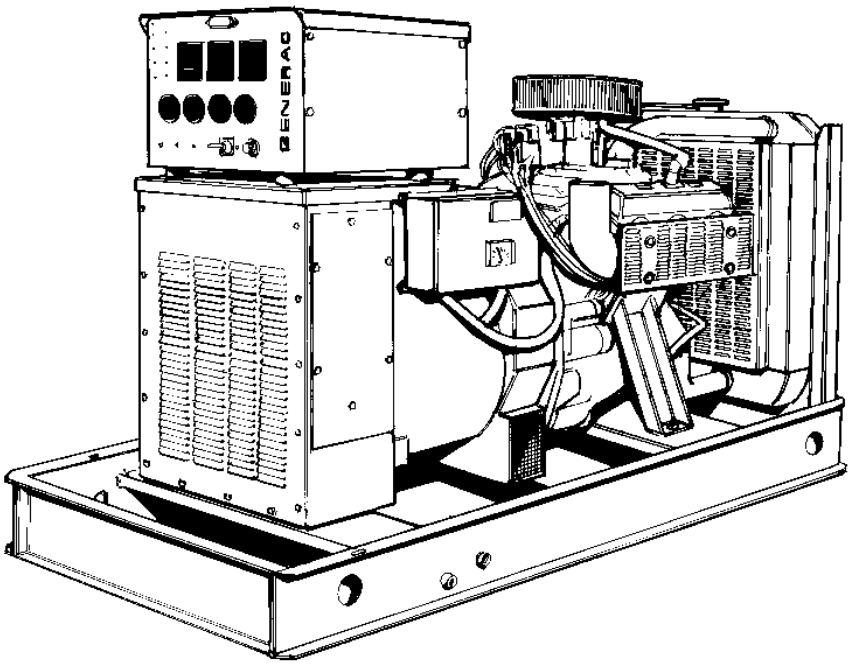
# SG050
# SG060

## Liquid Cooled Gas Engine Generator Sets

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

Prime Power Rating
**40KW 60 Hz / 40KVA 50 Hz**
**40KW 60 Hz / 45KVA 50 Hz**




**Power Matched**
**GENERAC 5.7GN 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



## 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**

❒ BRUSHLESS ..... Magnetically coupled DC current ✓
Eight-pole exciter w/ battery-driven field boost ✓
Mounted outboard of main bearing ✓
❒ 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 ..... 5.7GN
CYLINDERS ..... V-8
DISPLACEMENT ..... 5.7 Liter (350 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 ..... 5
CONNECTING RODS ..... 8 PM Steel
CYLINDER HEAD ..... Cast Iron
PISTONS ..... 8-Notched Head, Aluminum Alloy
CRANKSHAFT ..... Cast

**VALVE TRAIN**

LIFTER TYPE ..... Hydraulic Roller
INTAKE VALVE MATERIAL ..... Stainless Steel
EXHAUST VALVE MATERIAL ..... Stellite Faced
HARDENED VALVE SEATS ..... Yes

**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
OIL FILTER ..... Full flow, cartridge
CRANKCASE CAPACITY Lit. (qts.) ..... 4.7 (5.0)

**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 mm(in.) ..... 559 (22.0)
COOLANT HEATER ..... 120V, 1000 W

**FUEL SYSTEM**

FUEL
❒ Natural Gas or L.P. Vapor ..... Standard
❒ L.P. Liquid Withdrawal ..... Optional
CARBURETOR ..... Down draft
SECONDARY FUEL REGULATOR ..... Nat. Gas or L.P. Vapor System
HOT WATER VAPORIZER ..... L.P. Liquid Withdrawal System
AUTOMATIC FUEL LOCKOFF SOLENOID ..... Standard
OPERATING FUEL PRESSURE VAPOR SYSTEMS ..... 7" to 14" $H_2O$

**ELECTRICAL SYSTEM**

BATTERY CHARGE ALTERNATOR ..... 15 Amps @ 12V
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).

# OPERATING DATA

| | | STANDBY | | | | | | | | PRIME | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | SG050 | | SG060 | | | | | | SG050 | | SG060 | | | | | |
| **GENERATOR OUTPUT VOLTAGE/KW—60Hz,** | | **kW** | **AMP** | **NG kW** | **AMP** | **LP kW** | **Amp** | | | **kW** | **AMP** | **NG kW** | **AMP** | **LP kW** | **Amp** | | |
| 120/240 1-phase, 1.0 pf | NOTE: Consult your Generac dealer for additional voltages. | 50 | 208 | 54 | 225 | 59 | 246 | | | 40 | 167 | 40 | 167 | 50 | 208 | | |
| 120/208V, 3-phase, 0.8 pf | | 50 | 173 | 57 | 198 | 62 | 215 | | | 40 | 139 | 45 | 156 | 50 | 173 | | |
| 120/240V, 3-phase, 0.8 pf | | 50 | 150 | 57 | 171 | 62 | 186 | | | 40 | 120 | 45 | 135 | 50 | 150 | | |
| 277/480V, 3-phase, 0.8 pf | | 50 | 75 | 60 | 90 | 65 | 96 | | | 40 | 60 | 45 | 68 | 50 | 75 | | |
| 600V, 3-phase, 0.8 pf | | 50 | 60 | 60 | 72 | 65 | 78 | | | 40 | 48 | 45 | 54 | 50 | 60 | | |
| **GENERATOR OUTPUT VOLTAGE/KVA-50Hz** | | **KVA** | **AMP** | **NG kW** | **AMP** | **LP kW** | **Amp** | | | **KVA** | **AMP** | **KVA** | **AMP** | | | | |
| 110/220V, 1-phase, 1.0 pf | NOTE: Consult your Generac dealer for additional voltages. | 40 | 181 | 48 | 218 | 52 | 236 | | | 32 | 145 | 36 | 163 | | | | |
| 115/200V, 3-phase, 0.8 pf | | 50 | 144 | 60 | 173 | 65 | 188 | | | 40 | 115 | 45 | 130 | | | | |
| 100/200V, 3-phase, 0.8 pf | | 50 | 144 | 60 | 173 | 65 | 188 | | | 40 | 115 | 45 | 130 | | | | |
| 231/400V, 3-phase, 0.8 pf | | 50 | 72 | 60 | 87 | 65 | 94 | | | 40 | 58 | 45 | 65 | | | | |
| **MOTOR STARTING KVA** | | **231/240** | **400/480** | **231/240** | **400/480** | | | | | **231/240** | **400/480** | **231/240** | **400/480** | | | | |
| with standard alternator | 50 / 60 Hz | 83/100 | 94/113 | 100/120 | 117/141 | | | | | 83/100 | 94/113 | 100/120 | 117/141 | | | | |
| with optional alternator | 50 / 60 Hz | 234/281 | 276/331 | 234/281 | 276/331 | | | | | 234/281 | 276/331 | 234/281 | 276/331 | | | | |
| **FUEL** | Load | **50%** | **75%** | **100%** | **50%** | **75%** | **100%** | | | **50%** | **75%** | **100%** | **50%** | **75%** | **100%** | | |
| Natural Gas—60 Hz | $ft^3$/hr. | 413 | 515 | 655 | 495 | 625 | 785 | | | 340 | 420 | 530 | 415 | 490 | 625 | | |
| | $m^3$/hr. | 11.7 | 14.6 | 18.6 | 14.0 | 17.7 | 22.2 | | | 9.6 | 11.9 | 15.0 | 11.8 | 13.9 | 17.7 | | |
| Liquid Propane—60 Hz | $ft^3$/hr. | 161 | 201 | 255 | 193 | 244 | 305 | | | 133 | 164 | 207 | 162 | 191 | 244 | | |
| | $m^3$/hr. | 4.6 | 5.7 | 7.2 | 5.5 | 6.9 | 8.6 | | | 3.8 | 4.6 | 5.9 | 4.6 | 5.4 | 6.9 | | |
| **COOLING** | | | | | | | | | | | | | | | | | |
| Coolant capacity | System - lit. (US gal.) | 18.9 (5) | | 18.9 (5) | | | | | | 18.9 (5) | | 18.9 (5) | | | | | |
| Coolant flow/min. | 60 Hz - lit. (US gal.) | 90.8 (24) | | 90.8 (24) | | | | | | 90.8 (24) | | 90.8 (24) | | | | | |
| | 50 Hz - lit. (US gal.) | 75.6 (20) | | 75.6 (20) | | | | | | 75.6 (20) | | 75.6 (20) | | | | | |
| Heat rejection to coolant | 60 Hz - BTU/hr. | 213,000 | | 255,000 | | | | | | 175,000 | | 192,000 | | | | | |
| Inlet air | 60 Hz - $m^3$/min. (cfm) | 207.6 (7330) | | 207.6 (7330) | | | | | | 207.6 (7330) | | 207.6 (7330) | | | | | |
| | 50 Hz - $m^3$/min. (cfm) | 184 (6500) | | 184 (6500) | | | | | | 184 (6500) | | 184 (6500) | | | | | |
| Max. operating air temp onto radiator *see note | °C (°F) | 60 (140) | | 60 (140) | | | | | | 60 (140) | | 60 (140) | | | | | |
| Max. operating ambient temp *see note | °C (°F) | 50 (122) | | 50 (122) | | | | | | 50 (122) | | 50 (122) | | | | | |
| **COMBUSTION AIR REQUIREMENTS** | | | | | | | | | | | | | | | | | |
| Flow at rated power | 60 Hz - $m^3$/min. (cfm) | 4.1 (145) | | 4.9 (173) | | | | | | 3.25 (115) | | 3.48 (123) | | | | | |
| | 50 Hz - $m^3$/min. (cfm) | 3.3 (116) | | 4.1 (148) | | | | | | 2.63 (93) | | 2.75 (97) | | | | | |
| **EXHAUST** | | | | | | | | | | | | | | | | | |
| Exhaust flow at rated output | 60 Hz - $m^3$/min. (cfm) | 13.56 (479) | | 16.7 (590) | | | | | | 9.7 (342) | | 11.2 (395) | | | | | |
| Max recommended back pressure - "Hg | 1.5 | 1.5 | | 1.5 | | | | | | 1.5 | | | | | | | |
| Exhaust temp at rated output | 60 Hz - C° (°F) | 677 (1250) | | 732 (1350) | | | | | | 621 (1150) | | 660 (1220) | | | | | |
| Exhaust outlet size | N.P.T. (female) | (2) - 2.5" | | (2) - 2.5" | | | | | | (2) - 2.5" | | (2) - 2.5" | | | | | |
| **ENGINE** | | | | **NG** | | **LP** | | | | | | **NG** | | **LP** | | | |
| Rated RPM | 60 Hz | 1800 | | 1800 | | | | | | 1800 | | 1800 | | | | | |
| | 50 Hz | 1500 | | 1500 | | | | | | 1500 | | 1500 | | | | | |
| HP at rated KW | 60 Hz | 80 | | 91 | | 99 | | | | 66 | | 73 | | 78 | | | |
| | 50 Hz | 63 | | 72 | | 77 | | | | 51 | | 57 | | 62 | | | |
| Piston speed - m/min (ft/min) | 60 Hz | 318 (1044) | | 318 (1044) | | | | | | 318 (1044) | | 318 (1044) | | | | | |
| m/min (ft/min) | 50 Hz | 265 (870) | | 265 (870) | | | | | | 265 (870) | | 265 (870) | | | | | |
| BMEP - psi | 60 Hz | 101 | | 116 | | 125 | | | | 83 | | 92 | | 99 | | | |
| | 50 Hz | 95 | | 109 | | 118 | | | | 77 | | 87 | | 94 | | | |
| **POWER ADJUSTMENTS FOR AMBIENT CONDITIONS** | | | | | | | | | | | | | | | | | |
| Temperature | | | | | | | | | | | | | | | | | |
| -5% for every 10°C above - °C | | 25 | | 25 | | | | | | 25 | | 25 | | | | | |
| -2.77% for every 10°F above - °F | | 77 | | 77 | | | | | | 77 | | 77 | | | | | |
| Altitude | | | | | | | | | | | | | | | | | |
| -1.1% for every 100 m above - m | | 150 | | 150 | | | | | | 150 | | 150 | | | | | |
| -3.5% for every 1000 ft. above - ft. | | 500 | | 500 | | | | | | 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.

# STANDARD ENGINE & SAFETY FEATURES

**SG050 / 060**

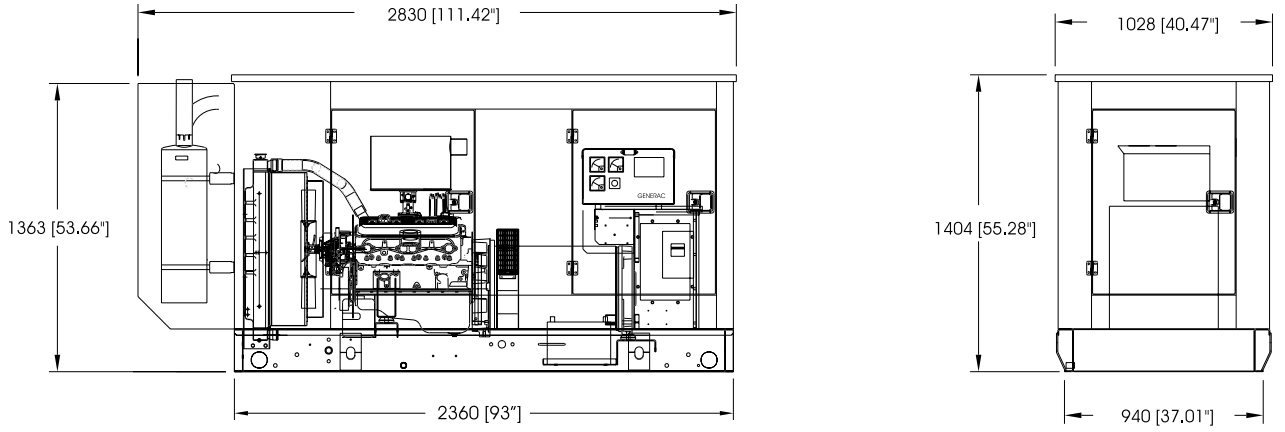
- High Coolant Temperature Automatic Shutdown
- Low Coolant Level Automatic Shutdown
- Low Oil Pressure Automatic Shutdown
- Overspeed Automatic Shutdown (Solid-state)
- Crank Limiter (Solid-state)
- Oil Drain Extension
- Radiator Drain Extension
- Factory-Installed Cool Flow Radiator
- Closed Coolant 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
- Air Duct Adapter

# OPTIONS

- **OPTIONAL COOLING SYSTEM ACCESSORIES**
  - ❍ 208/240V Coolant Heater
- **OPTIONAL FUEL ACCESSORIES**
  - ❍ Flexible Fuel Lines
- **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
  - ❍ Main Line Circuit Breaker
- **OPTIONAL ALTERNATOR ACCESSORIES**
  - ❍ Alternator Upsizing to 125kW
  - ❍ Alternator Strip Heater
  - ❍ Alternator Tropicalization
  - ❍ Voltage Changeover Switch
- **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 Panel
  - ❍ Unit Vibration Isolators
  - ❍ Oil Make-Up System
  - ❍ Oil Heater
  - ❍ 5 Year Warranties
  - ❍ Export Boxing
  - ❍ GenLink® Communications Software
- **OPTIONAL ENCLOSURES**
  - ❍ 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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**GENERAC**® POWER SYSTEMS, INC. • P.O. BOX 8 • WAUKESHA, WI 53187

262/544-4811 • FAX 262/544-4851

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