

# SG120/PG108 | 14.2L | 150 kVA

## INDUSTRIAL SPARK-IGNITED GENERATOR SET

Generac International Products

### Standby Power Rating - SG120

150 kVA, 120 kW, 50 Hz

### Prime Power Rating - PG108

135 kVA, 108 kW, 50 Hz



Image used for illustration purposes only



## Codes and Standards

Generac products are designed to the following standards:



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99, 110



NEC700, 701, 702, 708



ISO 3046, 7637, 8528, 9001



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41

## Powering Ahead

Generac ensures superior quality by designing and manufacturing most of its generator components, such as alternators, enclosures, control systems and communications software. Generac also makes its own spark-ignited engines, and you'll find them on every Generac gaseous-fueled generator. We engineer and manufacture them from the block up — all at our facilities throughout Wisconsin. Applying natural gas and LP-fueled engines to generators requires advanced engineering expertise to ensure reliability, durability and necessary performance. By designing specifically for these dry, hotter-burning fuels, the engines last longer and require less maintenance. Building our own engines also means we control every step of the supply chain and delivery process, so you benefit from single-source responsibility.

Plus, Generac Industrial Power's distribution network provides all parts and service so you don't have to deal with third-party suppliers. It all leads to a positive owner experience and higher confidence level. Generac spark-ignited engines give you more options in commercial and industrial generator applications as well as extended run time from utility-supplied natural gas.

**STANDARD FEATURES**

**ENGINE SYSTEM**

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Critical Exhaust Silencer (Enclosed Only)

**Fuel System**

- Fuel Line - NPT Connection
- Primary and Secondary Fuel Shutoff

**Cooling System**

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze

**Electrical System**

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

**ALTERNATOR SYSTEM**

- GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearing
- Amortisseur Winding
- Full Load Capacity Alternator

**GENERATOR SET**

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping (Enclosed Only)
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Only)

**ENCLOSURE (If Selected)**

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuation Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- Upward Facing Discharge Hoods (Radiator and Exhaust)
- Stainless Steel Lift Off Door Hinges
- Stainless Steel Lockable Handles
- RhinoCoat™ - Textured Polyester Powder Coat Paint

**CONTROL SYSTEM**



**Digital H Control Panel—Dual 4x20 Display**

**Program Functions**

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- 3-Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- Not in Auto (Flashing Light)

- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

**Full System Status Display**

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level

- Engine Speed
- Battery Voltage
- Frequency

**Alarms and Warnings**

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Low Fuel Pressure Alarm
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

**CONFIGURABLE OPTIONS**

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**ENGINE SYSTEM**

- Engine Coolant Heater
- Oil Heater
- Air Filter Restriction Indicator
- Stone Guard (Open Set Only)
- Critical Exhaust Silencer (Open Set Only)

**ELECTRICAL SYSTEM**

- 10A Battery Charger

**ALTERNATOR SYSTEM**

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

**CIRCUIT BREAKER OPTIONS**

- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breaker

**GENERATOR SET**

- GenLink® Communications Software (English Only)
- Extended Factory Testing (3-Phase Only)
- 8 Position Load Center

**ENCLOSURE**

- Weather Protected Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch

**CONTROL SYSTEM**

- 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indicator with Alarm
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- Remote Communication - Modem
- 10A Run Relay
- Ground Fault Indication and Protection Functions

**ENGINEERED OPTIONS**

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**ENGINE SYSTEM**

- Coolant Heater Ball Valves
- Fluid Containment Pan

**ALTERNATOR SYSTEM**

- 3rd Breaker System

**CONTROL SYSTEM**

- Spare Inputs (x4) / Outputs (x4)
- Battery Disconnect Switch

**GENERATOR SET**

- Special Testing
- Battery Box

**ENCLOSURE**

- Motorized Dampers

# SG120/PG108 | 14.2L | 150 kVA

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Generac International Products

### APPLICATION AND ENGINEERING DATA

#### ENGINE SPECIFICATIONS

##### General

|                                     |                              |
|-------------------------------------|------------------------------|
| Make                                | Generac                      |
| Cylinder #                          | 6                            |
| Type                                | Inline                       |
| Displacement - L (in <sup>3</sup> ) | 14.17 (864.71)               |
| Bore - mm (in)                      | 135 (5.31)                   |
| Stroke - mm (in)                    | 165 (6.50)                   |
| Compression Ratio                   | 9.5:1                        |
| Intake Air Method                   | Turbocharged/Aftercooled     |
| Number of Main Bearings             | 7                            |
| Connecting Rods                     | Carbon Steel                 |
| Cylinder Head                       | Cast Iron GT250, OHV         |
| Cylinder Liners                     | Ductile Iron                 |
| Ignition                            | Electronic                   |
| Piston Type                         | Aluminum                     |
| Crankshaft Type                     | Ductile Iron                 |
| Lifter Type                         | Solid                        |
| Intake Valve Material               | Special Heat-Resistant Steel |
| Exhaust Valve Material              | High Temp Steel Alloy        |
| Hardened Valve Seats                | High Temp Steel Alloy        |

##### Engine Governing

|                                     |            |
|-------------------------------------|------------|
| Governor                            | Electronic |
| Frequency Regulation (Steady State) | ±0.25%     |

##### Lubrication System

|                             |                             |
|-----------------------------|-----------------------------|
| Oil Pump Type               | Gear                        |
| Oil Filter Type             | Full-Flow Spin-On Cartridge |
| Crankcase Capacity - L (qt) | 34.3 (36.2)                 |

##### Cooling System

|                        |                             |
|------------------------|-----------------------------|
| Cooling System Type    | Pressurized Closed Recovery |
| Fan Type               | Pusher                      |
| Fan Speed - rpm        | 1,581                       |
| Fan Diameter - mm (in) | 762 (30)                    |

##### Fuel System

|   |                    |
|---|--------------------|
| Fuel Type   | Natural Gas        |
| Carburetor  | Down Draft         |
| Secondary Fuel Regulator                          | Standard           |
| Fuel Shut Off Solenoid                            | Standard           |
| Operating Fuel Pressure in H <sub>2</sub> O (kPa) | 7 - 11 (1.7 - 2.7) |

##### Engine Electrical System

|                            |                              |
|----------------------------|------------------------------|
| System Voltage             | 24 VDC                       |
| Battery Charger Alternator | Standard                     |
| Battery Size               | See Battery Index 0161970SBY |
| Battery Voltage            | (2) - 12 VDC                 |
| Ground Polarity            | Negative                     |

#### ALTERNATOR SPECIFICATIONS

|                                     |                |
|-------------------------------------|----------------|
| Standard Model                      | Generac 520 mm |
| Poles                               | 4              |
| Field Type                          | Revolving      |
| Insulation Class - Rotor            | H              |
| Insulation Class - Stator           | H              |
| Total Harmonic Distortion           | <5%            |
| Telephone Interference Factor (TIF) | <50            |

|                                    |                          |
|------------------------------------|--------------------------|
| Standard Excitation                | Permanent Magnet         |
| Bearings                           | Sealed Ball              |
| Coupling                           | Direct via Flexible Disc |
| Prototype Short Circuit Test       | Yes                      |
| Voltage Regulator Type             | Full Digital             |
| Number of Sensed Phases            | All                      |
| Regulation Accuracy (Steady State) | ±0.25%                   |

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### OPERATING DATA

#### POWER RATINGS - NATURAL GAS

|                                 | Standby        |           | Prime          |           |
|---------------------------------|----------------|-----------|----------------|-----------|
| Single-Phase 110/220 VAC @1.0pf | 120 kVA/120 kW | Amps: 546 | 108 kVA/108 kW | Amps: 491 |
| Three-Phase 231/400 VAC @0.8pf  | 150 kVA/120 kW | Amps: 217 | 135 kVA/108 kW | Amps: 195 |

#### STARTING CAPABILITIES (sKVA)

##### sKVA vs. Voltage Dip

| 231/400 VAC |     |     |     |     |     |     |     | 110/220 VAC |     |     |     |     |     |     |     |
|-------------|-----|-----|-----|-----|-----|-----|-----|-------------|-----|-----|-----|-----|-----|-----|-----|
| Alternator  | kVA | 10% | 15% | 20% | 25% | 30% | 35% | Alternator  | kVA | 10% | 15% | 20% | 25% | 30% | 35% |
| Standard    | 150 | 110 | 165 | 220 | 276 | 330 | 385 | Standard    | 150 | 65  | 98  | 130 | 163 | 196 | 228 |
| Upsize 1    | 175 | 155 | 232 | 310 | 388 | 465 | 542 | Upsize 1    | 175 | 92  | 138 | 183 | 229 | 275 | 321 |
| Upsize 2    | 200 | 155 | 232 | 310 | 388 | 465 | 542 | Upsize 2    | 200 | 92  | 138 | 183 | 229 | 275 | 321 |

#### FUEL CONSUMPTION RATES\*

##### Natural Gas – m<sup>3</sup>/hr (ft<sup>3</sup>/hr)

| Percent Load | Standby      | Prime        |
|--------------|--------------|--------------|
| 25%          | 18.5 (653)   | 16.7 (588)   |
| 50%          | 31.7 (1,119) | 28.5 (1,007) |
| 75%          | 42.8 (1,511) | 38.5 (1,360) |
| 100%         | 52.8 (1,865) | 47.5 (1,679) |

\* Fuel supply installation must accommodate fuel consumption rates at 100% load.

#### COOLING

|   |  | Standby                     | Prime           |
|---|--|-----------------------------|-----------------|
| Air Flow (Inlet Air Combustion and Radiator)          | m <sup>3</sup> /min (ft <sup>3</sup> /min) | 211.8 (7,479)               | 211.8 (7,479)   |
| Coolant Flow  | lpm (gpm)                                  | 264 (65)                    | 264 (65)        |
| Coolant System Capacity                               | L (gal)                                    | 23.1 (6.1)                  | 23.1 (6.1)      |
| Heat Rejection to Coolant                             | BTU/hr (kW)                                | 437,211 (128.1)             | 362,885 (106.3) |
| Maximum Operating Ambient Temperature                 | °C (°F)                                    | 50 (122)                    | 50 (122)        |
| Maximum Operating Ambient Temperature (Before Derate) |  | See Bulletin No. 019927ASSD |                 |
| Maximum Radiator Backpressure                         | kPa (in H <sub>2</sub> O)                  | 0.12 (0.5)                  | 0.12 (0.5)      |

#### COMBUSTION AIR REQUIREMENTS

|   | Standby   | Prime     |
|---|-----------|-----------|
| Flow at Rated Power m <sup>3</sup> /min (cfm) | 7.7 (272) | 7.2 (256) |

#### ENGINE

|                        |                | Standby     | Prime       |
|------------------------|----------------|-------------|-------------|
| Rated Engine Speed     | rpm            | 1,500       | 1,500       |
| Horsepower at Rated kW | hp             | 190         | 152         |
| Piston Speed           | m/min (ft/min) | 450 (1,477) | 450 (1,477) |
| BMEP                   | kPa (psi)      | 889 (129)   | 855 (124)   |

#### EXHAUST

|   |                           | Standby     | Prime       |
|---|---------------------------|-------------|-------------|
| Exhaust Flow (Rated Output)                 | m <sup>3</sup> /min (cfm) | 26.6 (939)  | 25.0 (883)  |
| Maximum Exhaust Backpressure                | kPa (inHg)                | 2.54 (0.75) | 2.54 (0.75) |
| Exhaust Temp (Rated Output - Post Silencer) | °C (°F)                   | 684 (1,263) | 628 (1,162) |

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.

Standby - See Bulletin 0187500SSB

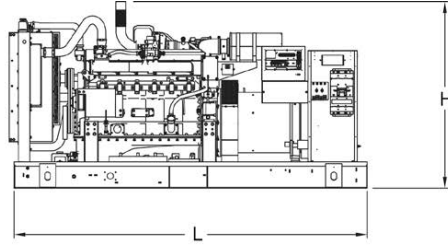
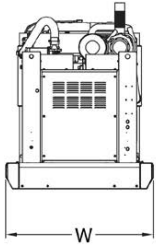
Prime - See Bulletin 0187510SSB

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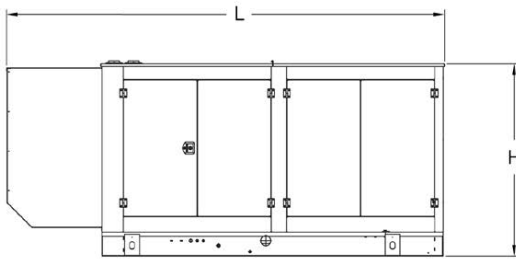
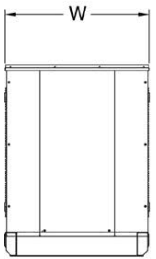
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### DIMENSIONS AND WEIGHTS\*



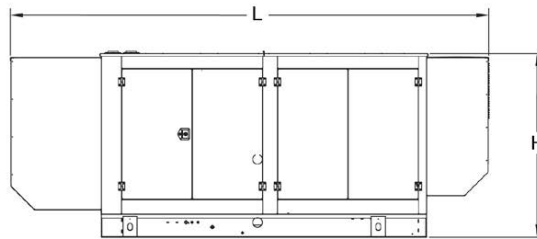
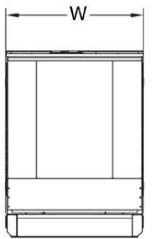
#### OPEN SET (Includes Exhaust Flex)

|                     |   |
|---------------------|---|
| L x W x H - mm (in) | 3,250 (128.0) x 1,357 (53.4) x 1,583 (62.3) |
| Weight - kg (lbs)   | 2,445 (5,389)                               |



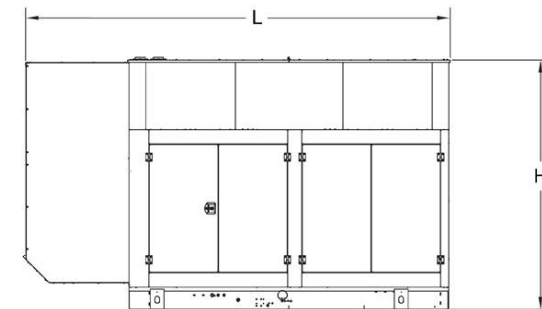
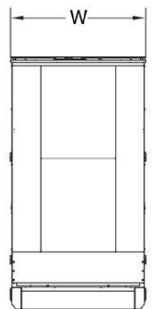
#### STANDARD ENCLOSURE

|                     |   |
|---------------------|---|
| L x W x H - mm (in) | 3,909 (154.4) x 1,371 (54.0) x 1,772 (69.8)     |
| Weight - kg (lbs)   | Steel: 2,889 (6,369)<br>Aluminum: 2,678 (5,903) |



#### LEVEL 1 ACOUSTIC ENCLOSURE

|                     |   |
|---------------------|---|
| L x W x H - mm (in) | 4,569 (179.9) x 1,460 (57.5) x 1,772 (69.8)     |
| Weight - kg (lbs)   | Steel: 3,072 (6,674)<br>Aluminum: 2,737 (6,034) |



#### LEVEL 2 ACOUSTIC ENCLOSURE

|                     |   |
|---------------------|---|
| L x W x H - mm (in) | 3,839 (151.1) x 1,371 (54.0) x 2,370 (93.3)     |
| Weight - kg (lbs)   | Steel: 3,134 (6,909)<br>Aluminum: 2,783 (6,135) |

\* All measurements are approximate and for estimation purposes only.

**YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER**

Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.