

# SG120/PG108 | 14.2L | 150 kVA

## INDUSTRIAL SPARK-IGNITED GENERATOR SET

Generac International Products

**GENERAC®** | **INDUSTRIAL POWER**

### Standby Power Rating - SG120

150 kVA, 120 kW, 50 Hz

### Prime Power Rating - PG108

135 kVA, 108 kW, 50 Hz



\*Assembled in the USA using domestic and foreign parts

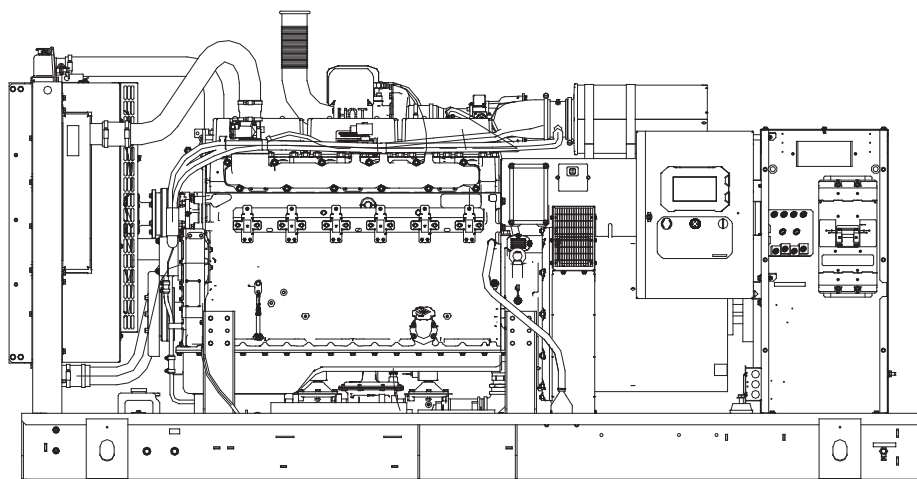


Image used for illustration purposes only

## Codes and Standards

Not all codes and standards apply to all configurations. Contact factory for details.



BS5514 and DIN 6271



SAE J1349



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
- Air Cleaner
- Stainless Steel Flexible Exhaust Connection
- Critical Silencer
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Level 1 Fan and Belt Guards (Open Set Only)
- Shipped Loose Catalyst Silencer (Open Set Only)
- Oil Temperature Indication and Alarm

#### Fuel System

- NPT Fuel Connection on Frame
- Primary and Secondary Fuel Shutoff

#### Cooling System

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

#### 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
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Units Only)
- Ready to Accept Full Load in <10 Seconds

#### ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- 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



#### Power Zone® Pro Sync Controller

##### Program Functions

- NFPA 110 Level 1 Compliant
- Engine Protective Functions
- Alternator Protective Functions
- Digital Engine Governor Control
- Digital Voltage Regulator
- Multiple Programmable Inputs and Outputs
- Remote Display Capability
- Remote Communication via Modbus® RTU, Modbus TCP/IP, and Ethernet 10/100
- Alarm and Event Logging with Real Time Stamping
- Expandable Analog and Digital Inputs and Outputs

- Remote Wireless Software Update Capable
- Wi-Fi®, Bluetooth®, BMS and Remote Telemetry
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Ethernet Based Communications Between Generators
- Programmable I/O Channel Properties
- Built-In Diagnostics

##### Protections

- Low Oil Pressure
- Low Coolant Level
- High/Low Coolant Temperature
- Sensor Failure
- Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over/Under Current
- Over Load
- High/Low Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I²T Algorithm)

#### 7 Inch Color Touch Screen Display

- Resistive Color Touch Screen
- Sunlight Readable (1400 NITS)
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- Key Function Monitoring
- Three Phase Voltage, Amperage, kW, kVA, and kVAR
- Selectable Line to Line or Line to Neutral Measurements
- Frequency
- Engine Speed
- Engine Coolant Temperature
- Engine Oil Pressure
- Engine Oil Temperature
- Battery Voltage
- Hourmeter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

**CONFIGURABLE OPTIONS****ENGINE SYSTEM**

- Engine Coolant Heater
- Baseframe Cover/Rodent Guard
- Oil Heater
- Air Filter Restriction Indicator
- Radiator Stone Guard (Open Set Only)
- Level 1 Fan and Belt Guards (Enclosed Units 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**

- Extended Factory Testing (3-Phase Only)
- Vapor Recovery Heater

**ENCLOSURE**

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

**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)
- 10A Engine Run Relay
- Ground Fault Annunciator
- 100 dB Alarm Horn

**WARRANTY (Standby Gensets Only)**

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

**ENGINEERED OPTIONS****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
- Enclosure Heater (with Motorized Dampers Only)

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APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	6
Type	Inline
Displacement - L (in <sup>3</sup> )	14.2 (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 Temperature Steel Alloy
Hardened Valve Seats	High Temperature Steel Alloy

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear Driven
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, Propane
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	57.5 A
Battery Size	See Battery Index 0161970SBY
Battery Voltage	(2) - 12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	R0120124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5% (3-Phase Only)
Telephone Interference Factor (TIF)	<50

Standard Excitation	Permanent Magnet
Bearings	Sealed Ball
Coupling	Direct
Prototype Short Circuit Test	Yes
Voltage Regulator Type	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: 545	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

#### MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip	
231/400 VAC	30%
R0120124Y21	273
R0160124Y21	401
R0200124Y21	436
R0240124Y21	538

#### FUEL CONSUMPTION RATES\*

Natural Gas – m³/hr (scfh)		
Percent Load	Standby	Prime
25%	22.1 (780)	20.4 (720)
50%	30.6 (1,080)	28.9 (1,020)
75%	39.1 (1,380)	37.4 (1,320)
100%	47.6 (1,680)	44.2 (1,560)

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

#### COOLING

		Standby	Prime
Air Flow (Fan Air Flow Across Radiator) - Open Set	m³/min (cfm)	207.5 (7,330)	207.5 (7,330)
Coolant Flow	Lpm (gpm)	273 (72)	273 (72)
Coolant System Capacity	L (gal)	39.7 (10.5)	39.7 (10.5)
Maximum Operating Ambient Temperature	°C (°F)	50 (122)	50 (122)
Maximum Operating Ambient Temperature (Before Derate)	See Bulletin No. 019927ASSD		
Maximum Additional 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 - m³/min (cfm)	7.6 (270)	6.9 (244)

#### ENGINE

		Standby	Prime
Rated Engine Speed	RPM	1,500	1,500
Horsepower at Rated kW	hp	185	166
Piston Speed	m/min (ft/min)	495 (1,625)	495 (1,625)
BMEP	kPa (psi)	777 (113)	699 (101)

#### EXHAUST

		Standby	Prime
Exhaust Flow (Rated Output)	m³/min (cfm)	24 (841)	21 (751)
Maximum Allowable Backpressure (Post Silencer) kPa (inHg)		2.54 (0.75)	2.54 (0.75)
Exhaust Temperature (Rated Output)	°C (°F)	661 (1,221)	650 (1,202)

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

Please contact 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

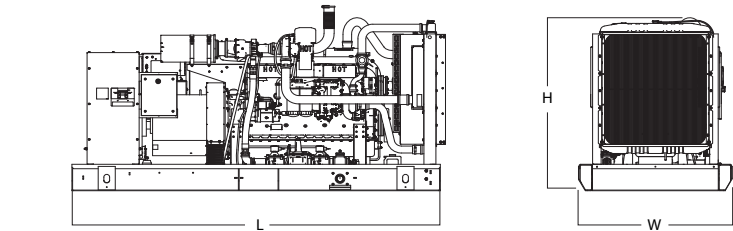
Prime - See Bulletin 0187510SSB

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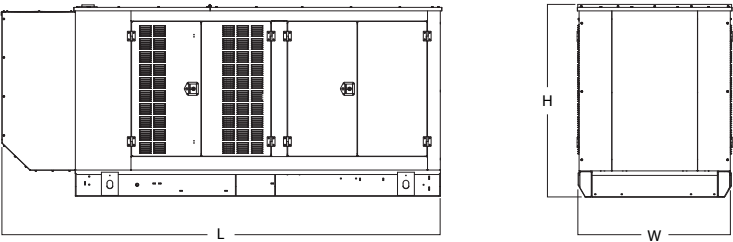
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DIMENSIONS AND WEIGHTS\*



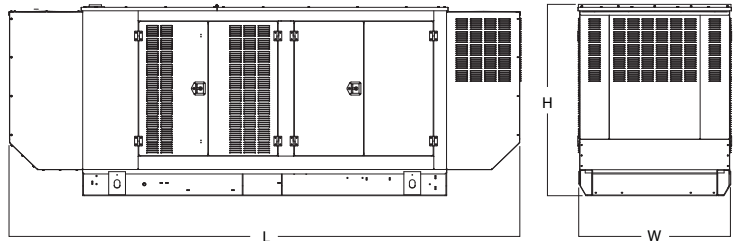
OPEN SET

L x W x H - mm (in)	3,250 (128.0) x 1,357 (53.4) x 1,583 (62.3)
Weight - kg (lbs)	5,281 - 5,389 (2,396 - 2,445)



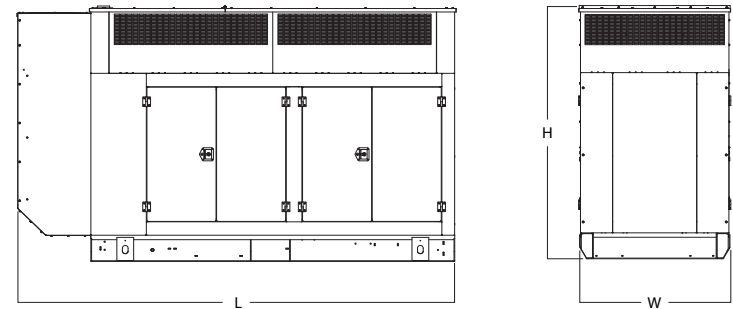
WEATHER PROTECTED ENCLOSURE

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: 6,261 - 6,369 (2,840 - 2,889) Aluminum: 5,795 - 5,903 (2,629 - 2,678)



LEVEL 1 SOUND ATTENUATED 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: 6,566 - 6,674 (2,978 - 3,027) Aluminum: 5,926 - 6,034 (2,688 - 2,767)



LEVEL 2 SOUND ATTENUATED ENCLOSURE

L x W x H - mm (in)	3,923 (154.5) x 1,371 (54.0) x 2,370 (93.3)
Weight - kg (lbs)	Steel: 6,801 - 6,909 (3,085 - 3,134) Aluminum: 6,027 - 6,135 (2,734 - 2,783)

\* 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.