

SG/PG Series

**GENERAC**<sup>®</sup>

**INDUSTRIAL  
POWER**

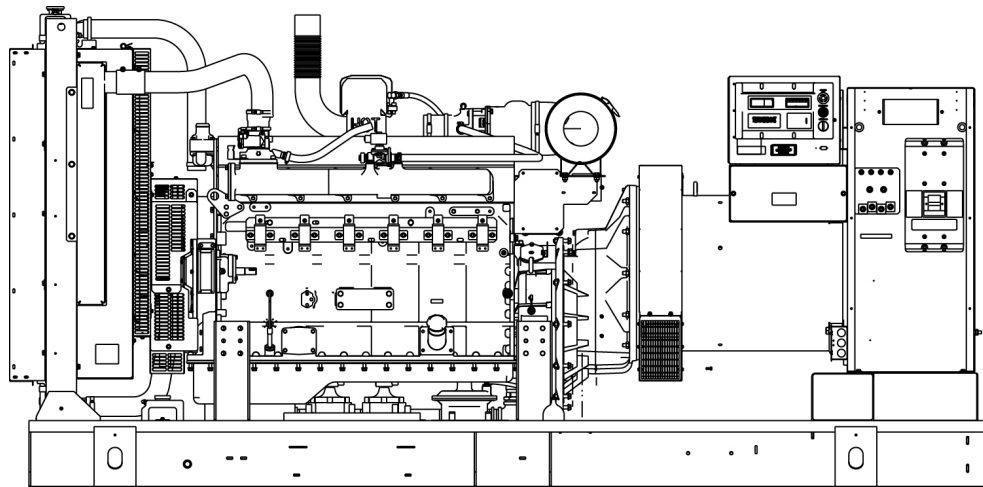
50 Hz

**275 kVA**

**Industrial Spark-Ignited Generator Set**

Generac International Products

**12.9L**



\*Built in the USA using domestic and foreign parts

Image used for illustration purposes only

Power Ratings		
Standby	SG220	275 kVA / 220 kW
Prime	PG176	220 kVA / 176 kW

## Powering Ahead

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

# SG/PG Series

## Standard Features

### ENGINE SYSTEM

#### General

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer (enclosed only)
- Factory Filled Oil

#### Fuel System

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

#### Cooling System

- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory-installed Radiator
- 50/50 Ethylene glycol antifreeze

#### Engine Electrical System

- Battery charging alternator
- Battery Cables
- Battery Tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

### ALTERNATOR SYSTEM

- Class H insulation material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearings
- 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 Warranty (Standby rated units)
- 1 Year Warranty (Prime rated units)
- Silencer mounted in the discharge hood (enclosed only)

### ENCLOSURE

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel lift off door hinges
- Stainless steel lockable handles
- Rhino Coat™ - Textured polyester powder coat

## CONTROL SYSTEM



#### Control Panel

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485
- All-Phase Sensing DVR
- Full System Status
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage

- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- 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)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance algorithm
- Sealed Boards
- Password parameter adjustment protection
- Single point ground
- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

#### Alarms

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Low Fuel Pressure Alarm
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

## SG/PG Series

### Configurable Options

#### ENGINE SYSTEM

- General
- Engine Block Heater
- Air Filter Restriction Indicator
- Stone Guard (Open Set Only)
- Critical Exhaust Silencer (Open Set Only)
- Engine Electrical System
- 10A battery charger

#### ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical coating

#### GENERATOR SET

- Gen-Link Communications Software (English Only)
- Extended Factory Testing (3 Phase Only)
- Pad Vibration Isolators
- 150 MPH Wind Kit

#### CIRCUIT BREAKER OPTIONS

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

#### ENCLOSURE

- Weather Protected
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Steel Enclosure
- Aluminum Enclosure
- 12 VDC Enclosure Lighting Kits
- Door Alarm Switch

#### CONTROL SYSTEM

- 21-Light Remote Annunciator
- Remote Relay Panel (8 or 16)
- Oil Temperature Sender with Indication / 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

### Engineered Options

#### ENGINE SYSTEM

- Coolant heater ball valves
- Fluid containment pans

#### ALTERNATOR SYSTEM

- 3rd Breaker Systems

#### GENERATOR SET

- Special Testing
- Battery Box

#### ENCLOSURE

- Motorized Dampers

#### CONTROL SYSTEM

- Spare inputs (x4) / outputs (x4) - H Panel Only
- Battery Disconnect Switch

### Rating Definitions

**Standby** – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

**Prime** – Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications.

Power ratings in accordance with ISO 8528-1, Second Edition dated 2005-06-01, definitions for Prime Power (PRP) and Emergency Standby Power (ESP).

**ENGINE SPECIFICATIONS**
**General**

Make	Generac
Cylinder #	6
Type	Inline
Displacement - L (Cu In)	12.88 (785.99)
Bore - mm (in)	135 (5.31)
Stroke - mm (in)	150 (5.91)
Compression Ratio	10.1:1
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	Altronic CD1
Pistons	Aluminum
Crankshaft	Ductile Iron
Lifter Type	Solid
Intake Valve Material	Special Heat-Resistant Steel
Exhaust Valve Material	Alloy Steel, High Temp
Hardened Valve Seats	Alloy Steel, High Temp

**Lubrication System**

Oil Pump Type	Gear
Oil Filter Type	Full-flow cartridge
Crankcase Capacity - L (qts)	34.3 (36.2)

**Cooling System**

Cooling System Type	Pressurized Closed Recovery
Water Pump Flow gal (min)	77 (291)
Fan Type	Pusher
Fan Speed (rpm)	1178
Fan Diameter mm (in)	863 (34)
Optional Coolant Heater Wattage	2000
Optional Coolant Heater Voltage	240 V

**Fuel System**

Fuel Type	Natural Gas
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard (Dual)
Operating Fuel Pressure	11" - 15" H2O

**Engine Electrical System**

System Voltage	24 VDC
Battery Charging Alternator	Std
Min. Recommended Battery Size	1155 CCA
Battery Voltage	(2) 12 VDC
Ground Polarity	Negative

**ALTERNATOR SPECIFICATIONS**

Standard Model	520mm
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, Flexible Disc
Prototype Short Circuit Test	Yes

Voltage Regulator Type	Full Digital
Number of Sensed Phases	3
Regulation Accuracy (Steady State)	+/- 0.25%

**Engine Governing**

Governor	Electronic
Frequency Regulation (Steady State)	+/- 0.25%

# SG/PG Series

# operating data

**50 Hz**
**POWER RATINGS – NATURAL GAS**

Three Phase 231/400 VAC @0.8pf	Standby		Prime	
	275 kVA / 220 kW	397 Amps	220 kVA / 176 kW	317 Amps

**STARTING CAPABILITIES (sKVA)**

Alternator	kVA	sKVA vs. Voltage Dip					
		380/480 VAC					
		10%	15%	20%	25%	30%	35%
Standard	275	251	377	502	628	754	879
Upsize 1	300	251	377	502	628	754	879

**FUEL CONSUMPTION RATES\***

Percent Load	Natural Gas – ft <sup>3</sup> /hr (m <sup>3</sup> /hr)	
	Standby	Prime
25%	907 (25.7)	726 (20.6)
50%	1384 (39.2)	1107 (31.3)
75%	1862 (52.7)	1489 (42.2)
100%	2339 (66.2)	1871 (53.0)

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

**COOLING**

		Standby	Prime
		Air Flow (inlet air combustion and radiator)	ft <sup>3</sup> /min (m <sup>3</sup> /min)
System Coolant Capacity	Gal (Liters)	19 (71.9)	19 (71.9)
Heat Rejection to Coolant	BTU/hr	645,619	516,495
Max. Ambient Temp. (before derate)	°F (°C)	110 (43)	110 (43)
Maximum External Static Resistance	in H <sub>2</sub> O	N/A	N/A

**COMBUSTION AIR REQUIREMENTS**

Flow at Rated Power	cfm (m <sup>3</sup> /min)	Standby	Prime
		475 (13.5)	475 (13.5)

**ENGINE**

		Standby	Prime
Rated Engine Speed	rpm	1720	1720
Horsepower at Rated kW	hp	372	372
Piston Speed	ft/min (m/min)	1603 (488)	1603 (488)
BMEP	psi	204	204

**EXHAUST**

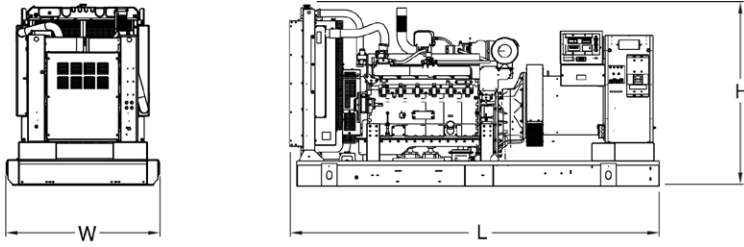
		Standby	Prime
Exhaust Flow (Rated Output)	cfm (m <sup>3</sup> /min)	2297 (65.1)	2075 (58.8)
Maximum Additional Backpressure (Post Silencer)	inHg	0.75	0.75
Exhaust Temperature (Rated Output - Post Silencer)	°F (°C)	1350 (732)	1315 (712)
Exhaust Outlet Size (Open Set)	in	3.5" I.D. Flex (No Muffler)	

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. All power ratings are +/- 5%.

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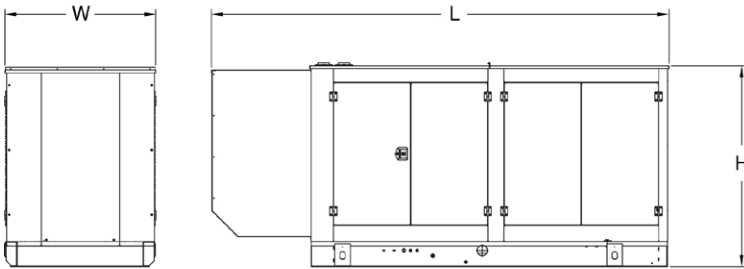
**dimensions and weights**

50 Hz



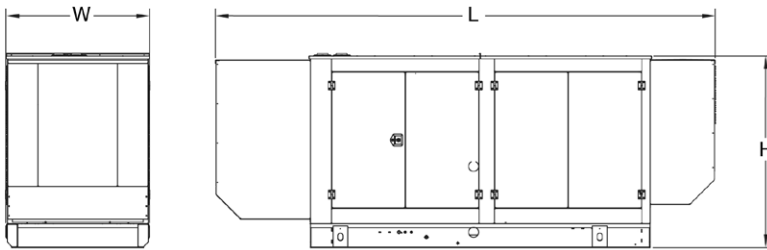
**OPEN SET (Includes Exhaust Flex)**

L x W x H in (mm)	138.74 (3524.1) x 57.6 (1463.1) x 68.04 (1728.3)
Weight lbs (kg)	6027 (2734)



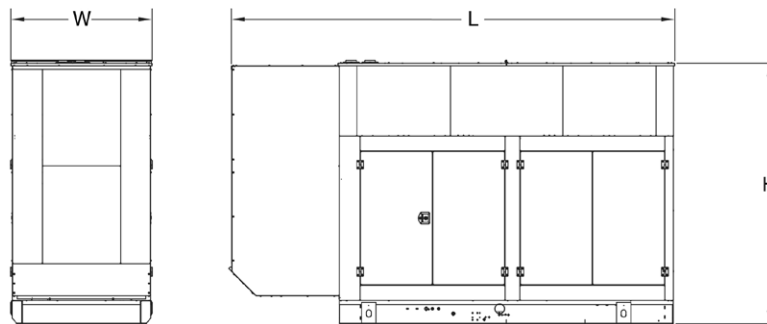
**STANDARD ENCLOSURE**

L x W x H in (mm)	174.7 (4437.4) x 52.98 (1345.7) x 77.8 (1976.1)
Weight lbs (kg)	Steel: 7592 (3444) Aluminum: 6799 (3084)



**LEVEL 1 ACOUSTIC ENCLOSURE**

L x W x H in (mm)	200.19 (5084.7) x 57.49 (1460.4) x 77.80 (1976.1)
Weight lbs (kg)	Steel: 8056 (3654) Aluminum: 6997 (3174)



**LEVEL 2 ACOUSTIC ENCLOSURE**

L x W x H in (mm)	180.65 (4588.4) x 57.49 (1460.4) x 107.3 (2725.4)
Weight lbs (kg)	Steel: 8629 (3914) Aluminum: 7244 (3286)

**YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER**

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