

**SG045 | 4.5 L | 45 kW**  
**INDUSTRIAL SPARK-IGNITED GENERATOR SET**  
EPA Certified Stationary Emergency

**GENERAC<sup>®</sup> INDUSTRIAL  
ENERGY**

**Standby Power Rating**  
45 kW, 56 kVA, 60 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.**



UL2200, UL6200, UL1236, UL489



CSA C22.2



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99, 110



NEC700, 701, 702, 708



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41



IBC 2009, CBC 2010, IBC 2012,  
ASCE 7-05, ASCE 7-10, ICC-ES  
AC-156 (2012)



## Powering Ahead

Generac provides 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 for 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
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Oil Temperature Sender with Alarm
- Air Filter Restriction Indicator
- Heavy Duty Air Cleaner

## 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

- UL2200 GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Brushless Excitation
- Sealed Bearing
- 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 and Demand Response Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)

## 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<sup>®</sup> Pro Controller

- 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

Power Zone<sup>®</sup> Pro Controller Continued

- Remote Communication via Modbus<sup>®</sup> 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
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Programmable I/O Channel Properties
- Built-In Diagnostics

## Alarms and Warnings

- High/Low Oil Pressure
- High/Low Coolant Level
- High/Low Coolant Temperature
- Sender/Sensor Failure
- High/Low Oil Temperature
- Over Total kW
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over Current
- High/Low Battery Voltage

## Alarms and Warnings Continued

- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I<sup>2</sup>T Algorithm)

## 4.3 Inch Color Touch Screen Display

- Resistive Color Touch Screen
- 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 Temperature
- Battery Voltage
- Hourmeter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

## CONFIGURABLE OPTIONS

### ENGINE SYSTEM

- Heater with Shutoff Valves
- Fluid Containment Pan
- Engine Coolant Heater
- Oil Heater
- Level 1 Fan and Belt Guards (Enclosed Units Only)
- Radiator Duct Adapter (Open Set Only)
- Baseframe Cover/Rodent Guard
- Industrial Grade Air Cleaner
- Critical Silencer

### ELECTRICAL SYSTEM

- 10A UL Battery Charger
- Battery Warmer

### ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

### CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2<sup>nd</sup> Main Line Circuit Breaker
- 3<sup>rd</sup> Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

### FUEL OPTIONS

- NPT Flexible Fuel Line
- Dual Fuel NG/LPV
- Dual Fuel NG/LPL

### GENERATOR SET

- Extended Factory Testing (3-Phase Only)
- 8 Position Load Center
- Pad Vibration Isolators
- Spring Vibration Isolators

### ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Enclosure Heaters (with Motorized Dampers Only)
- Door Open Alarm Horn

### CONTROL SYSTEM

- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- 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
- 120 V GFCI and 240 V Outlets
- 100 dB Alarm Horn
- Damper Alarm Contacts (with Motorized Dampers Only)

### WARRANTY (STANDBY GENSETS ONLY)

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

## ENGINEERED OPTIONS

### CONTROL SYSTEM

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

### GENERATOR SET

- Special Testing
- Battery Box

## APPLICATION AND ENGINEERING DATA

### ENGINE SPECIFICATIONS

#### General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in <sup>3</sup> (L)	270.4 (4.43)
Bore - in (mm)	4.5 (114.3)
Stroke - in (mm)	4.25 (107.95)
Compression Ratio	9.94:1
Intake Air Method	Naturally Aspirated
Number of Main Bearings	5
Connecting Rods	Forged Steel, Fractured Split, Bushingless
Cylinder Head	Cast Iron
Cylinder Liners	Cast Iron
Ignition	Coil Near Plug Solid State Inductive
Piston Type	Cast Aluminum Flat Top
Crankshaft Type	Forged Steel
Lifter Type	Hydraulic
Intake Valve Material	Stainless Steel
Exhaust Valve Material	Stainless Steel
Hardened Valve Seats	High Steel Iron Alloy

#### Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	± 0.25

#### Lubrication System

Oil Pump	Gear Driven
Oil Filter Type	Full-Flow Spin-On Cartridge
Engine Oil Capacity: qt (L)	21 (20)

#### Cooling System

Cooling System Type	Pressurized Closed
Fan Type	Pusher
Fan Speed (rpm)	2,100
Fan Diameter - in (mm)	20 (508)

#### Fuel System

Fuel Type	Natural Gas, Propane
Fuel Control	Down Draft
Fuel Shutoff	Dual
G Operating Fuel Pressure - in H <sub>2</sub> O (kPa)	5 - 14 (1.2 - 3.5)
LP Operating Fuel Pressure - in H <sub>2</sub> O (kPa)	7 - 14 (1.7 - 3.5)

\*When designing the external fuel system, assume a 20% safety factor to the upper and lower limit of the specified fuel pressure range to account for site variation and measurement at the generator test port. Refer to Generac Document 10000046207, latest rev., for proper gas supply design guidelines, or contact factory for details.

#### Engine Electrical System

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

### ALTERNATOR SPECIFICATIONS

Standard Model	K0045124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion (THD)	<5% (3-Phase)
Telephone Interference Factor (TIF)	<50

Standard Excitation	Synchronous Brushless
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%

# SG045 | 4.5 L | 45 kW

## INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary Emergency

**GENERAC** INDUSTRIAL  
ENERGY

### OPERATING DATA

#### POWER RATINGS NATURAL GAS/PROPANE VAPOR

		Standby
Single-Phase 120/240 VAC @1.0pf	45 kW/45 kVA	Amps: 188
Three-Phase 120/208 VAC @0.8pf	45 kW/56 kVA	Amps: 156
Three-Phase 120/240 VAC @0.8pf	45 kW/56 kVA	Amps: 135
Three-Phase 277/480 VAC @0.8pf	45 kW/56 kVA	Amps: 68

#### STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip			
277/480 VAC	30%	208/240 VAC	30%
K0045124Y21	98	K0050124Y21	75
K0060124Y21	124	K0060124Y21	95

#### FUEL CONSUMPTION RATES\*

Natural Gas – scfh (m³/hr)		LP Vapor – scfh (m³/hr)	
Percent Load	Standby	Percent Load	Standby
25%	195 (5.5)	25%	02 (2.9)
50%	322 (9.1)	50%	147 (4.2)
75%	427 (12.1)	75%	184 (5.2)
100%	554 (15.7)	100%	228 (6.5)

\*Fuel supply installation must accommodate fuel consumption rates at 100% load. 1.5X maximum site rated fuel consumption should be used for gas supply design practices. Refer to Generac 10000046207, latest rev., for more information or contact factory for details.

#### COOLING

		Standby
Air Flow (Fan Air Flow Across Radiator) - Open Set	cfm (m³/min)	3,511 (99.4)
Coolant Flow	gpm (Lpm)	37.7 (142.7)
Coolant System Capacity	gal (L)	3 (11.4)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)	See Bulletin No. 0199270SSD	
Maximum Additional Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.5 (0.12)

#### COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - cfm (m³/min)	90.3 (2.6)

#### ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	69
Piston Speed	ft/min (m/min)	1,275 (389)
BMEP	psi (kPa)	113 (778)

\*\* Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

#### EXHAUST

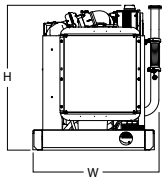
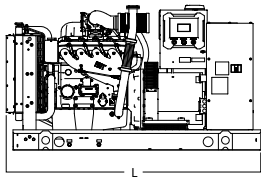
		Standby
Exhaust Flow (Rated Output)	scfm (m³/min)	255.3 (7.2)
Maximum Allowable Back Pressure (Post Silencer)	in g (Kpa)	0.75 (2.54)
Exhaust Temperature (Rated Output)	°F (°C)	1,361 (738)

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 BS5514 and DIN6271 standards.

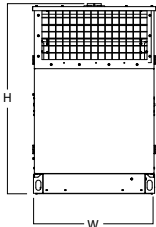
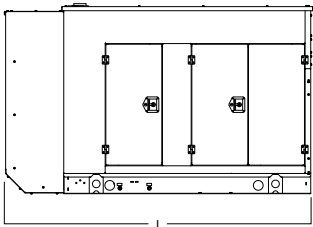
Standby - See Bulletin 0187500SSB

DIMENSIONS AND WEIGHTS\*



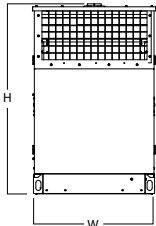
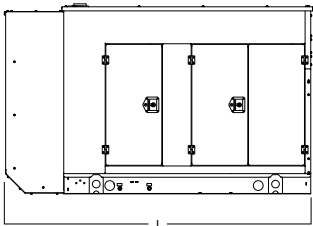
OPEN SET

L x W x H - in (mm)	78.1 (1,984) x 37.3 (947) x 44.4 (1,128)
Weight - lbs (kg)	1,675 - 1,748 (760 - 793)



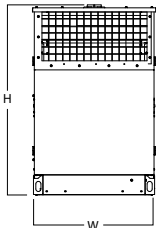
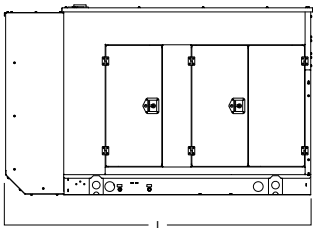
WEATHER PROTECTED ENCLOSURE

L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)
Weight - lbs (kg)	Steel: 2,160 - 2,233 (980 - 1,013) Aluminum: 1,894 - 1,965 (859 - 891)



LEVEL 1 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)
Weight - lbs (kg)	Steel: 2,258 - 2,329 (1,024 - 1,056) Aluminum: 1,987 - 2,061 (901 - 935)



LEVEL 2 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)
Weight - lbs (kg)	Steel: 2,341 - 2,414 (1,062 - 1,095) Aluminum: 2,071 - 2,144 (939 - 972)

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

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.