SG050T | 4.5 L | 50 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary

Standby Power Rating

50 kW, 63 kVA, 60 Hz

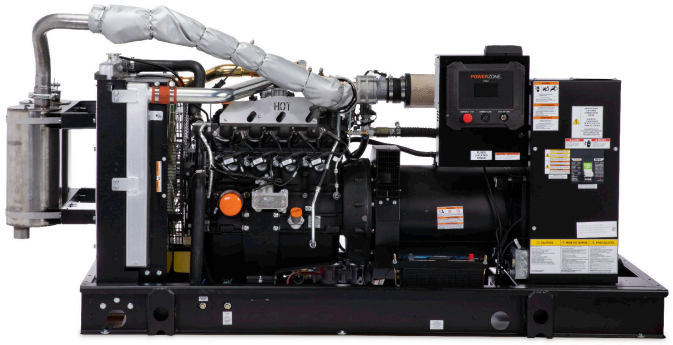

Image used for illustration purposes only

*Assembled in the USA using domestic and foreign parts

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.

SG050T | 4.5 L | 50 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

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STANDARD FEATURES

ENGINE SYSTEM
- Oil Drain Extension
- Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Critical Silencer
- Oil Temperature Sender with Alarm
- Air Filter Restriction Indicator

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

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 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® Pro Controller Continued
- 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
- 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^2T Algorithm)

4.3 Inch Color Touch Screen Display
- Resistive Color Touch Screen
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- Key Functioning 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

SG050T | 4.5 L | 50 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

EPA Certified Stationary

CONFIGURABLE OPTIONS

ENGINE SYSTEM
- Heater with Shutoff Valves
- Engine Coolant Heater
- Oil Heater
- Level 1 Fan and Belt Guards (Enclosed Units Only)
- Radiator Duct Adapter (Open Set Only)
- Heavy Duty Air Cleaner

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

ELECTRICAL SYSTEM
- 10A UL Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM
- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

CIRCUIT BREAKER OPTIONS
- Main Line Circuit Breaker
- 2nd Main Line Circuit Breaker
- 3rd Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

GENERATOR SET
- Extended Factory Testing (3-Phase Only)
- 8 Position Load Center

ENCLOSURE
- Level 0 Sound Attenuated
- 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

SG050T | 4.5 L | 50 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

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APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in^3 (L)	275.0 (4.5)
Bore - in (mm)	4.5 (114.3)
Stroke - in (mm)	4.25 (107.95)
Compression Ratio	9.1:1
Intake Air Method	Turbocharged
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)	22 (533)

Fuel System

Fuel Type	Natural Gas, Propane
Fuel Injection	Electronic
Fuel Shutoff	Generac
Operating Fuel Pressure (NG) - in H_2O (kPa)	5 - 14 (1.2 - 3.5)
Operating Fuel Pressure (LP) - in H_2O (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	K0050124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion (THD)	<5% (3-Phase Only)
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%

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INDUSTRIAL SPARK-IGNITED GENERATOR SET

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OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/240 VAC @1.0pf	50 kW/50 kVA	Amps: 208
Three-Phase 120/208 VAC @0.8pf	50 kW/63 kVA	Amps: 174
Three-Phase 120/240 VAC @0.8pf	50 kW/63 kVA	Amps: 151
Three-Phase 277/480 VAC @0.8pf	50 kW/63 kVA	Amps: 75
Three-Phase 346/600 VAC @0.8pf	50 kW/63 kVA	Amps: 60

STARTING CAPABILITIES (skVA)

		skVA vs. Voltage Dip			
120/240 VAC 1Ø	30%	277/480 VAC 3Ø	30%	208/240 VAC 3Ø	30%
A0050044N21	31	A0080044N21	98	K0050124Y21	75
A0080044N21	58	K0080124Y21	172	K0080124Y21	132

FUEL CONSUMPTION RATES*

Natural Gas – scfh (m^3/hr)		Propane Vapor – scfh (m^3/hr)		Propane Liquid – gph (Lph)	
Percent Load	Standby	Percent Load	Standby	Percent Load	Standby
25%	201 (5.7)	25%	50 (1.4)	25%	1.8 (6.9)
50%	352 (10.0)	50%	124 (3.5)	50%	3.7 (13.9)
75%	506 (14.3)	75%	193 (5.5)	75%	5.5 (20.8)
100%	665 (18.8)	100%	258 (7.3)	100%	7.3 (27.8)

*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 (m^3/min)	4,343 (123)
Coolant Flow	gpm (Lpm)	24 (90)
Coolant System Capacity	gal (L)	9 (34)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin No. 0199270SSD
Maximum Radiator Backpressure	in H_2O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m^3/min)	117 (3.3)

ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	82
Piston Speed	ft/min (m/min)	1,275 (389)
BMEP	psi (kPa)	137 (945)

** Refer to “Emissions Data Sheet” for maximum bHP for EPA and SCAQMD permitting purposes.

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	279 (7.9)
Maximum Exhaust Back pressure	inHg (Kpa)	0.75 (2.54)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1,305 (707)

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

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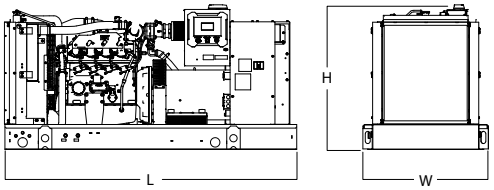
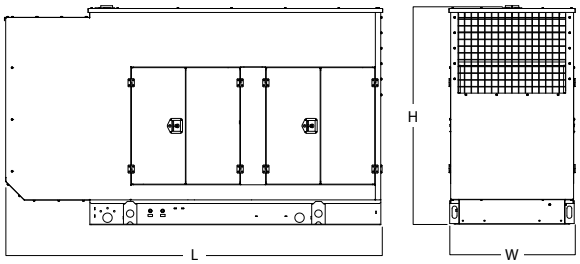
DIMENSIONS AND WEIGHTS*



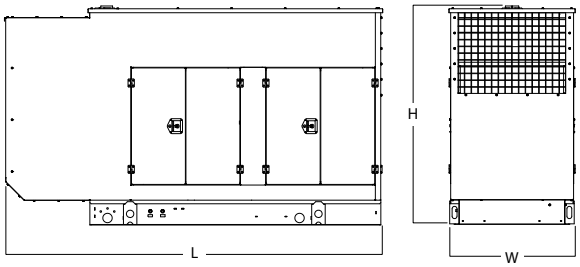
OPEN SET

L x W x H - in (mm)	92.9 (2,360) x 39.9 (1,014) x 46.0 (1,170)
Weight - lbs (kg)	1,845 - 1,856 (837 - 842)



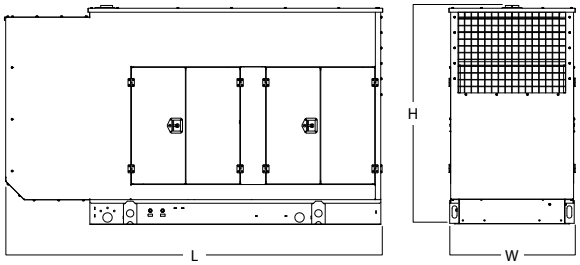
LEVEL 0 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	120.8 (3,068) x 40.5 (1,028) x 69.0 (1,754)
Weight - lbs (kg)	Steel: 2,584 - 2,596 (1,172 - 1,177) Aluminum: 2,232 - 2,244 (1,013 - 1,018)



LEVEL 1 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	120.8 (3,068) x 40.5 (1,028) x 69.0 (1,754)
Weight - lbs (kg)	Steel: 2,675 - 2,687 (1,213 - 1,219) Aluminum: 2,323 - 2,335 (1,054 - 1,059)



LEVEL 2 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	120.8 (3,068) x 40.5 (1,028) x 69.0 (1,754)
Weight - lbs (kg)	Steel: 2,753 - 2,765 (1,249 - 1,254) Aluminum: 2,380 - 2,391 (1,079 - 1,085)

* 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.

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