

SG050T | 4.5 L | 50 kW
INDUSTRIAL SPARK-IGNITED GENERATOR SET
EPA Certification Pending Stationary

GENERAC[®] INDUSTRIAL ENERGY

Standby Power Rating
50 kW, 63 kVA, 60 Hz



*Assembled in the USA using domestic and foreign parts

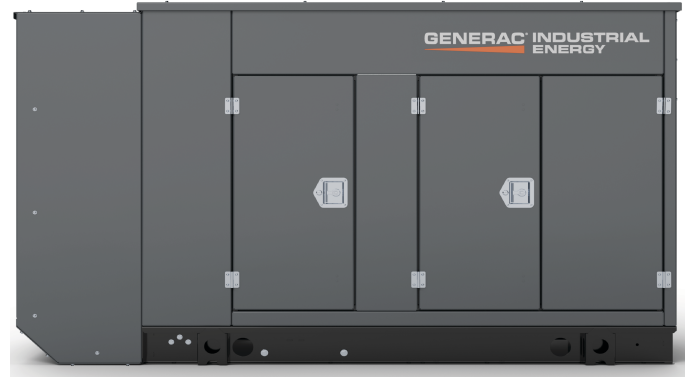


Image used for illustration purposes only

Codes and Standards

Not all codes and standards apply to all configurations. Contact your Generac Industrial dealer or sales representative for details.



UL2200, UL1236, UL489



CSA C22.2



DIN

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



Powering a Smarter World

For over 65 years, Generac has been at the forefront of power generation, pioneering innovative solutions and unparalleled manufacturing excellence. At the heart of our reputation for superior quality lies our commitment to meticulously designing and manufacturing key components of our generators—ranging from alternators and enclosures to base tanks, control systems, and cutting-edge communications software.

Generac's gensets stand out for their unparalleled versatility and reliability. Engineered to offer a wide range of options and configurations, they are tailored to meet the unique demands of virtually any application, seamlessly adapting to its complexity. Our commitment to reliability drives us to globally source only the most dependable engines, selected through stringent criteria for optimal performance under the toughest industrial conditions.

Beyond the sale, Generac's dedication to our customers extends to comprehensive service support, for peace of mind and reliability long after your purchase. Our commitment is to not only provide state-of-the-art power solutions but also enduring success and satisfaction of our customers through ongoing support and service excellence.

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GENERAC INDUSTRIAL
ENERGY

STANDARD FEATURES

ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan and Belt Guards
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Critical Silencer
- Oil Temperature Sender with Alarm
- Air Filter Restriction Sensor

FUEL SYSTEM

- NPT Fuel Connection on Frame
- Primary and Secondary Fuel Shutoff
- Fuel Inlet Pressure Sensor
- Vaporizer for Propane Liquid

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
- 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

DSE G8601 CONTROLLER



KEY FEATURES

- Advanced PLC Functionality
- Multi-Purpose PIDs
- Virtual Inputs
- On-Screen Mimic (SLDs)
- Multiple Application Support
- Multi-Level Pin Protected Front Panel Editor
- Integral LCD Display Heater
- Enhanced High-Resolution 240 x 128 Pixel Display
- Single Generator Control
- Latest ECU/ECM Support
- Touch Screen Panel PC Support
- Zero Sequence Voltage Protection
- Integral Gasket (IP65 protection)
- Temperature Rating -22 °F to 122 °F (-30 °C to 50 °C)

GOVERNOR FUNCTIONALITY

- Speed Control through ECM Integration
- Soft Start Ramping (Multiple Steps)

STANDARD PROTECTIONS

- Low Coolant Level
- High/Low Coolant Temperature

- Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over/Under Current
- Over Load
- Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I²T Algorithm)
- Ground Fault

CONTROL PANEL

- Auto/Off/Manual
- Indication Through Display Screen
- Audible Alarm and Silence
- Not in Auto Indication

VOLTAGE REGULATION

- Digital Control
- Three-Phase Sensing
- Negative Power Limit
- Loss of Sensing Protection
- Fault Protection (I²T Function)
- High Voltage Limit
- Low Voltage Limit
- Maximum Power Limit
- ±0.5% Voltage Regulation

CONNECTIONS (ACTUAL I/O MAY VARY DUE TO CONFIGURATION)

- 4 Analog Inputs

- 12 Digital Inputs
- 9 Active Low Digital Outputs

CUSTOMER PORTS

- Ethernet
- 2 RS-485
- 2 USB
- CANBus

CODES AND STANDARDS

- CE
- NFPA 110 Capable

MORE FEATURES

- Built-in Governor
- Digital AVR Support
- Multiple Language Support
- Three-Phase Generator Sensing and Protection
- Three-Phase Bus Sensing
- Generator Current, Protection and Power Monitoring
- Configurable Timers
- Integrated SNMP
- Data Logging
- PC Configuration
- DSENet® (Expansion Support)
- Flexible I/O (Inputs/Outputs)
- Automatic and Front Panel Breaker Control
- Power-Save Mode

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CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Fluid Containment Pan
- Engine Coolant Heater with Shutoff Valves
- Oil Heater
- Radiator Duct Adapter (Open Set Only)
- Two-Stage Heavy Duty Air Cleaner
- Critical Grade Silencer
- Baseframe Cover/Rodent Guard
- Crankcase Ventilation Heater (Recommended at Operating Temperatures of 0° F)

FUEL SYSTEM

- NPT Flexible Fuel Line

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
- IBC Seismic Certification (Contact Factory for Availability)
- OSHPD Seismic Certification (Contact Factory for Availability)
- Elevated Stand
- Pad Vibration Isolators
- Spring Vibration Isolators

ENCLOSURE

- Weather Protected Enclosure
- 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)
- Enclosure LED Lighting Kit
- Enclosure Heaters (with Motorized Dampers Only)
- Door Open Alarm Horn

REMOTE MONITORING AND CONTROL

- Generac Link Manager



- Generac Link Gateway
- Historical trending, alarming and alerts
- Cellular communications to software cloud
- 2 Serial Ports: CAN, RS 485
- 2 TCP Ports: Ethernet 1, Ethernet 2
- GPS
- Antenna Connectors: LTE, GPS
- SIM Card: Rugged 2FF
- Flexible subscription options for Generac Link Manager

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 Outlets
- 100 dB Alarm Horn
- Damper Alarm Contacts (with Motorized Dampers Only)
- Spare Inputs/Outputs

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

- 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 ³ (L)	270.4 (4.43)
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 Vapor; Propane Liquid
Fuel Control	Electronic
Fuel Shutoff	Dual
Operating Fuel Pressure (NG) - in H ₂ O (kPa)	5 - 14 (1.2 - 3.5)
Operating Fuel Pressure (LP) - in H ₂ 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	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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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 (m³/hr)		Propane Vapor – scfh (m³/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 (m³/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 ₂ O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m³/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

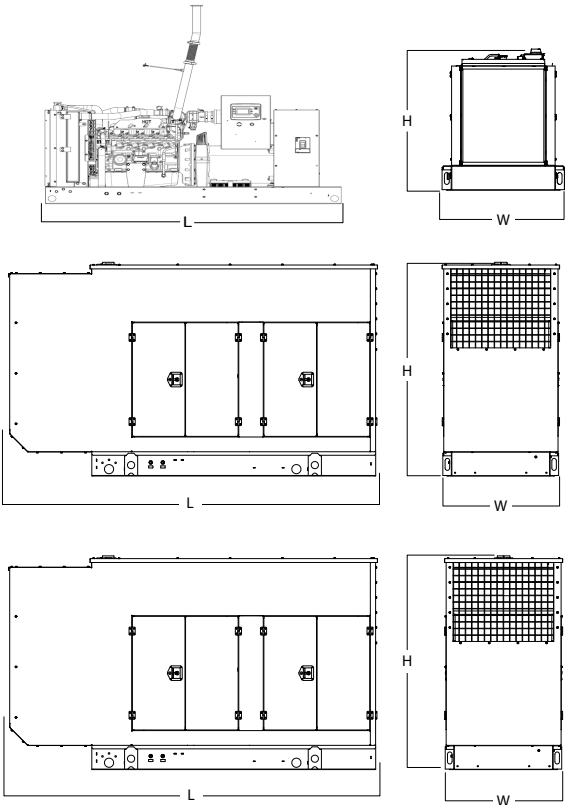
Standby		
Exhaust Flow (Rated Output)	cfm (m³/min)	279 (7.9)
Maximum Exhaust Back pressure	inHg (Kpa)	0.75 (2.54)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1,305 (707)

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

DIMENSIONS AND WEIGHTS*



OPEN SET (Includes Exhaust Flex)	
L x W x H - in (mm)	92.9 (2,359.7) x 39.9 (1,014) x 84.6 (2,150)
Weight - lbs (kg)	2,328(1,055.8)

WEATHER PROTECTED ENCLOSURE	
L x W x H - in (mm)	111.7 (2,837.2) x 40.5 (1,027.7) x 68.4 (1,737.4)
Weight - lbs (kg)	Steel: 3,294 (1,493.9) Aluminum: 2,731 (1,238.5)

LEVEL 2 ACOUSTIC ENCLOSURE	
L x W x H - in (mm)	111.7 (2,837.2) x 40.5 (1,028) x 68.6 (1,743)
Weight - lbs (kg)	Steel: 3,304 (1,498.4) Aluminum: 2,746 (1,245.4)

* 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