

SD050 | 4.5L | 50 kW
INDUSTRIAL DIESEL GENERATOR SET
 EPA Certified Stationary Emergency

GENERAC® | **INDUSTRIAL POWER**

Standby Power Rating

50 kW, 63 kVA, 60 Hz

Prime Power Rating*

45 kW, 56 kVA, 60 Hz



*EPA Certified Prime ratings are not available in the US or its Territories

Not for sale in CA/MA

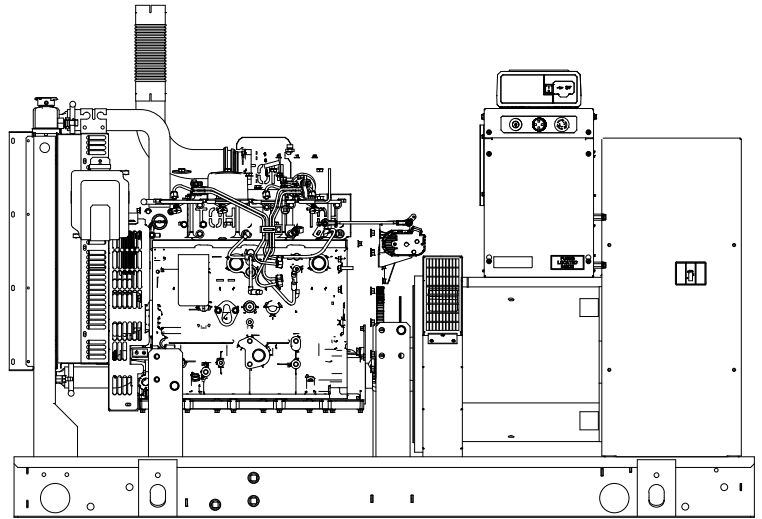


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Codes and Standards

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



UL2200, UL6200, UL1236, UL489, UL142



CSA C22.2, ULC S601



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99, 110



NEC700, 701, 702, 708



ISO 3046, 7637, 8528, 9001



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

For over 60 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 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.

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STANDARD FEATURES

ENGINE SYSTEM

- Coolant Heater
- Oil Drain Extension
- Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Radiator Duct Adapter (Open Set Only)
- Oil Temperature Indication and Alarm

FUEL SYSTEM

- Fuel Lockoff Solenoid
- Secondary Fuel Filter

COOLING SYSTEM

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 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
- Protective Thermal Switch

GENERATOR SET

- Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Dual Breakers
- Standard Factory Testing
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)

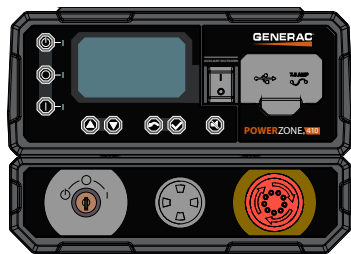
ENCLOSURE (If Selected)

- 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

FUEL TANKS (If Selected)

- UL 142, ULC S601
- Double Wall
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested - 2 psi
- Rupture Basin Alarm
- Fuel Level
- Check Valve In Supply and Return Lines
- RhinoCoat™ - Textured Polyester Powder Coat Paint
- Stainless Steel Hardware

CONTROL SYSTEM



Power Zone® 410 Controller

Features

- Programmable Auto Crank
- Selectable Low Speed Exercise
- RS-232 x2
- RS-485 x2
- All-Phase Sensing Digital Voltage Regulator
- Time
- Date
- On/Off/Manual Switch
- Not in Auto Flashing Light

- Emergency Stop
- Modbus® RTU
- Remote Ports
- CANbus
- Full Range Standby Operation
- 3-Phase AC Volts
- 3-Phase Amps
- kW
- Power Factor
- Ruptured Tank Detection
- Auxiliary Shutdown Switch
- Remote Communications
- Compatible with NFPA 110, Level 1 or 2 (When Optional Modules Selected)
- Line Power/Gen Power
- I²T Function for Full Generator Protection

Full System Status Display

- Multilingual 128x64 Graphical Display with Heater
- Easy Status View LED Screen
- Full System Status
- Run Hours
- Service Reminders
- Fault History (Alarm Log)

- Oil Pressure
- Oil Temperature (Optional/When Equipped)
- Oil Level (Optional/When Equipped)
- Output for Fuel Level High/Low Warning
- Water Temperature
- Water Level
- Fuel Pressure/Level
- Engine Speed
- Battery Voltage
- Alternator Frequency

Alarms and Warnings

- Common Alarm Output

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Oil Heater
- Level 1 Fan and Belt Guards (Enclosed Units Only)
- Critical Grade Silencer (Open Set Only)
- Radiator Stone Guard
- Air Cleaner
- Heavy Duty Air Cleaner

FUEL SYSTEM

- NPT Flexible Fuel Line

ELECTRICAL SYSTEM

- Battery Warmer
- 10A UL Listed Battery Charger

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- 2nd Circuit Breaker
- Shunt Trip Wand Auxiliary Contacts
- Electronic Trip Breakers

GENERATOR SET

- 8 Position Load Center
- Extended Factory Testing

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating
- Permanent Magnet Excitation

ENCLOSURE

- Level 0 Sound Attenuated Enclosure
- Level 1 Sound Attenuated Enclosure
- Level 2 Sound Attenuated Enclosure
- Level 2 Sound Attenuated Enclosure with Motorized Dampers
- Enclosure Heater (with Motorized Dampers Only)
- Steel Enclosure
- Aluminum Enclosure
- IBC Seismic Certified
- AC/DC Enclosure Light Kits (Enclosed Units Only)
- Door Open Alarm Horn
- Pad Vibration Isolators
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)

CONTROL SYSTEM

- NFPA 110 Level 1 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)
- E-Stop Terminal
- 10A Engine Run Relay
- Ground Fault Annunciator
- 100 dB Alarm Horn
- 120V GFCI and 240V Outlets
- Damper Alarm Contacts (with Motorized Dampers Only)

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

FUEL TANKS (Size on Last Page)

- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension
- 19 in (330.2 mm) Fill Extension
- Emergency Vents
- 12 ft Vent Extensions
- Overfill Protection Valve
- Fuel Drop Tube
- 5 Gallon Spill Box
- Spill Box Return Hose
- Tank Risers
- Fire Rated Stainless Steel Fuel Hose
- 90% High Fuel Alarm

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Battery Disconnect Switch
- Battery Box

GENERATOR SET

- Special Testing

FUEL TANKS

- UL 2085 Tank
- Special Fuel Tanks

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Iveco/FPT
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emission Data Sheet
Cylinder #	4
Type	In-Line
Displacement - in³ (L)	274 (4.5)
Bore - in (mm)	4.1 (105)
Stroke - in (mm)	5.2 (132)
Compression Ratio	17.5:1
Intake Air Method	Turbocharged
Cylinder Head Type	2-Valve
Piston Type	Aluminum
Crankshaft Type	Forged Steel

Engine Governing

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%

Lubrication System

Oil Pump Type	Gear Driven
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity - qt (L)	14.4 (13.6)

Cooling System

Cooling System Type	Closed Recovery
Water Pump Type	Belt Driven Centrifugal
Fan Type	Pusher
Fan Speed - RPM	2,538
Fan Diameter - in (mm)	26 (660)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specifications	ASTM
Fuel Filtering (Microns)	5
Fuel Pump Type	Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line - in (mm)	0.5 (12.7) NPT
Fuel Return Line - in (mm)	0.5 (12.7) NPT

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	<5% (3-Phase Only)
Telephone Interference Factor (TIF)	<50

Standard Excitation	Synchronous Brushless
Bearings	One, Pre-Lubed and Sealed
Coupling	Direct via Flexible Disc
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

	Standby	
Single-Phase 120/240 VAC @1.0pf	50 kW	Amps: 208
Three-Phase 120/208 VAC @0.8pf	50 kW	Amps: 173
Three-Phase 120/240 VAC @0.8pf	50 kW	Amps: 150
Three-Phase 277/480 VAC @0.8pf	50 kW	Amps: 75
Three-Phase 346/600 VAC @0.8pf	50 kW	Amps: 60

MOTOR STARTING CAPABILITIES (skVA)

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

FUEL CONSUMPTION RATES*

Fuel Pump Lift - ft (m)		Diesel - gph (Lph)	
		Percent Load	Standby
3 (1)		25%	1.2 (4.4)
		50%	2.3 (8.5)
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)		75%	3.2 (12.2)
13.6 (51.5)		100%	4.2 (15.8)

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

COOLING

		Standby
Coolant Flow	gpm (Lpm)	32.7 (123.8)
Coolant System Capacity	gal (L)	4.5 (17.4)
Heat Rejection to Coolant	BTU/hr (kW)	121,000 (35.5)
Inlet Air	cfm (m³/min)	6,360 (180)
Maximum Operating Radiator Air Temperature	°F (°C)	122 (50)
Maximum Ambient Temperature (Before Derate)		See Bulletin No. 0199270SSD
Maximum Additional Radiator Backpressure	in H ₂ O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power - cfm (m³/min)	205 (5.8)

ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	80
Piston Speed	ft/min (m/min)	1,559 (475)
BMEP	psi (kPa)	128.5 (886)

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	497 (14.1)
Maximum Allowable Backpressure (Post Silencer)	inHg (kPa)	1.5 (5.1)
Exhaust Temperature (Rated Output - Post Turbo)	°F (°C)	850 (454)

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

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 10000018933
Prime - See Bulletin 10000018926

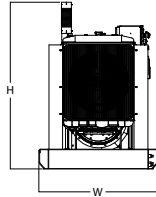
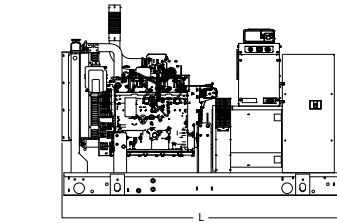
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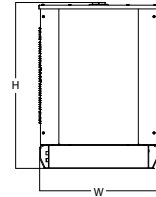
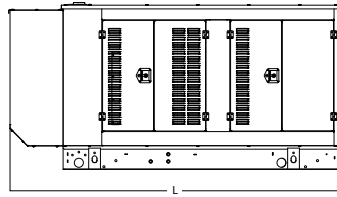
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DIMENSIONS AND WEIGHTS*



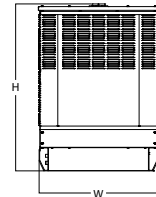
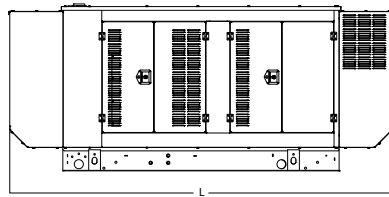
OPEN SET

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	76.5 (1,942) x 37.4 (950) x 43.1 (1,095)	2,086 - 2,488 (946 - 1,128)
12	54 (204)	76.5 (1,942) x 37.4 (950) x 56.1 (1,425)	2,566 - 2,968 (1,164 - 1,346)
31	132 (500)	76.5 (1,942) x 37.4 (950) x 68.1 (1,730)	2,796 - 3,198 (1,268 - 1,450)
45	190 (719)	106.0 (2,692) x 37.4 (950) x 72.1 (1,831)	3,010 - 3,412 (1,366 - 1,548)
50	211 (799)	76.5 (1,942) x 37.4 (950) x 80.1 (2,035)	3,005 - 3,407 (1,363 - 1,545)
71	300 (1,136)	92.9 (2,360) x 37.4 (950) x 83.6 (2,124)	3,068 - 3,470 (1,391 - 1,573)
121	510 (1,931)	116.5 (2,960) x 46.5 (1,180) x 85.5 (2,171)	3,451 - 3,853 (1,567 - 1,749)



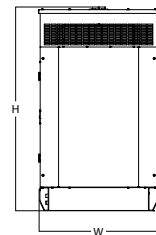
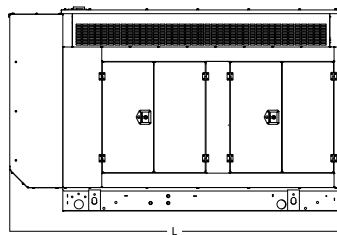
LEVEL 0 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	94.8 (2,409) x 38.0 (965) x 49.5 (1,258)	447 (203)	225 (102)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 62.5 (1,588)		
31	132 (500)	94.8 (2,409) x 38.0 (965) x 74.5 (1,893)		
45	190 (719)	106.0 (2,692) x 38.0 (965) x 78.5 (1,994)		
50	211 (799)	94.8 (2,409) x 38.0 (965) x 86.5 (2,198)		
71	300 (1,136)	94.8 (2,409) x 38.0 (965) x 90.0 (2,287)		
121	510 (1,931)	116.5 (2,960) x 46.5 (1,180) x 91.9 (2,334)		



LEVEL 1 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	112.5 (2,857) x 38.0 (965) x 49.5 (1,258)	526 (239)	225 (118)
12	54 (204)	112.5 (2,857) x 38.0 (965) x 62.5 (1,588)		
31	132 (500)	112.5 (2,857) x 38.0 (965) x 74.5 (1,893)		
45	190 (719)	112.5 (2,857) x 38 (965) x 78.5 (1,994)		
50	211 (799)	112.5 (2,857) x 38.0 (965) x 86.5 (2,198)		
71	300 (1,136)	112.5 (2,857) x 38.0 (965) x 90.0 (2,287)		
121	510 (1,931)	116.5 (2,960) x 46.5 (1,180) x 91.9 (2,334)		



LEVEL 2 SOUND ATTENUATED ENCLOSURE

Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)	Weight - lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	94.8 (2,409) x 38.0 (965) x 62.0 (1,574)	679 (308)	324 (147)
12	54 (204)	94.8 (2,409) x 38.0 (965) x 75.0 (1,904)		
31	132 (500)	94.8 (2,409) x 38.0 (965) x 87.0 (2,209)		
45	190 (719)	106.0 (2,692) x 38.0 (965) x 91.0 (2,310)		
50	211 (799)	94.8 (2,409) x 38.0 (965) x 99.0 (2,514)		
71	300 (1,136)	94.8 (2,409) x 38.0 (965) x 102.5 (2,603)		
121	510 (1,931)	116.5 (2,960) x 46.5 (1,180) x 104.4 (2,650)		

* All measurements are approximate and for estimation purposes only. Specification characteristics may change without notice. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.