

SG160/PG144 | 14.2L | 200 kVA

INDUSTRIAL SPARK-IGNITED GENERATOR SET

Generac International Products

Standby Power Rating - SG160

200 kVA, 160 kW, 50 Hz

Prime Power Rating - PG144

180 kVA, 144 kW, 50 Hz



Image used for illustration purposes only



Codes and Standards

Generac products are designed to the following standards:

-   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

Powering Ahead

Generac ensures 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 to ensure 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
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Critical Exhaust Silencer (Enclosed Only)

Fuel System

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

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze

Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Brushless Excitation
- Sealed Bearing
- 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 Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Only)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuation Enclosures)
- Gasketed Doors
- Stamped Air-Intake Louvers
- 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



Digital H Control Panel—Dual 4x20 Display

Program Functions

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- 3-Phase Sensing Digital Voltage Regulator
- 2-Wire Start Capability
- 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)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus® Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

Full System Status Display

- Power Output (kW)
- Power Factor
- kW Hours, Total, and Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level

- Engine Speed
- Battery Voltage
- Frequency

Alarms and Warnings

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Low Fuel Pressure Alarm
- Engine Overspeed
- Battery Voltage
- Alarms and Warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Engine Coolant Heater
- Oil Heater
- Air Filter Restriction Indicator
- Stone Guard (Open Set Only)
- Critical Exhaust Silencer (Open Set Only)

ELECTRICAL SYSTEM

- 10A Battery Charger

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating

CIRCUIT BREAKER OPTIONS

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

GENERATOR SET

- GenLink® Communications Software (English Only)
- Extended Factory Testing (3-Phase Only)
- 8 Position Load Center

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch

CONTROL SYSTEM

- 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indicator with 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
- Ground Fault Indication and Protection Functions

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

ALTERNATOR SYSTEM

- 3rd Breaker System

CONTROL SYSTEM

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

GENERATOR SET

- Special Testing
- Battery Box

ENCLOSURE

- Motorized Dampers

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APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	6
Type	Inline
Displacement - L (in ³)	14.17 (864.71)
Bore - mm (in)	135 (5.31)
Stroke - mm (in)	165 (6.50)
Compression Ratio	9.5:1
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	Electronic
Piston Type	Aluminum
Crankshaft Type	Ductile Iron
Lifter Type	Solid
Intake Valve Material	Special Heat-Resistant Steel
Exhaust Valve Material	High Temp Steel Alloy
Hardened Valve Seats	High Temp Steel Alloy

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-Flow Spin-On Cartridge
Crankcase Capacity - L (qt)	34.3 (36.2)

Cooling System

Cooling System Type	Pressurized Closed Recovery
Fan Type	Pusher
Fan Speed - rpm	1,581
Fan Diameter - mm (in)	762 (30)

Fuel System

Fuel Type	Natural Gas, Propane Vapor
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure - kPa (in H ₂ O)	1.7 - 2.7 (7 - 11)

Engine Electrical System

System Voltage	24 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	(2) - 12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Generac 520 mm
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 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

	Natural Gas					Liquid Propane Vapor			
	Standby		Prime			Standby		Prime	
Single-Phase 110/220 VAC @1.0pf	160 kVA/160 kW	Amps: 727	144 kVA/144 kW	Amps: 655		120 kVA/120 kW	Amps: 546	108 kVA/108 kW	Amps: 491
Three-Phase 231/400 VAC @0.8pf	200 kVA/160 kW	Amps: 289	180 kVA/144 kW	Amps: 260		150 kVA/120 kW	Amps: 217	135 kVA/108 kW	Amps: 195

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

231/400 VAC								110/220 VAC							
Alternator	kVA	10%	15%	20%	25%	30%	35%	Alternator	kVA	10%	15%	20%	25%	30%	35%
Standard	200	155	232	310	388	465	542	Standard	200	92	138	183	229	275	321
Upsize 1	250	218	328	437	546	656	765	Upsize 1	-	-	-	-	-	-	-
Upsize 2	300	251	377	502	628	754	879	Upsize 2	-	-	-	-	-	-	-

FUEL CONSUMPTION RATES*

Natural Gas – m ³ /hr (ft ³ /hr)				Liquid Propane Vapor – m ³ /hr (ft ³ /hr)			
Percent Load	Standby	Prime		Percent Load	Standby	Prime	
25%	22.9 (810)	20.6 (729)		25%	15.8 (560)	14.2 (504)	
50%	39.3 (1,389)	35.4 (1,250)		50%	19.3 (682)	17.4 (613)	
75%	53.1 (1,875)	47.8 (1,688)		75%	23.5 (830)	21.2 (747)	
100%	65.5 (2,314)	59.0 (2,083)		100%	28.8 (1,016)	26.0 (915)	

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

COOLING

		Standby	Prime
Air Flow (Inlet Air Combustion and Radiator)	m ³ /min (ft ³ /min)	213.6 (7,546)	213.6 (7,546)
Coolant Flow	lpm (gpm)	333 (88)	333 (88)
Coolant System Capacity	L (gal)	39.7 (10.5)	39.7 (10.5)
Heat Rejection to Coolant	BTU/hr (kW)	695,432 (203.8)	556,345 (163.0)
Maximum Operating Ambient Temperature	°C (°F)	50 (122)	50 (122)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin No. 019927ASSD	
Maximum Radiator Backpressure	kPa (in H ₂ O)	0.12 (0.5)	0.12 (0.5)

COMBUSTION AIR REQUIREMENTS

	Natural Gas		Liquid Propane Vapor	
	Standby	Prime	Standby	Prime
Flow at Rated Power m ³ /min (cfm)	9.5 (337)	8.9 (317)	7.2 (254)	6.5 (228)

ENGINE

EXHAUST

		Natural Gas		Liquid Propane Vapor		Standby	Prime		
		Standby	Prime	Standby	Prime				
Rated Engine Speed	rpm	1,500	1,500	1,500	1,500	Exhaust Flow (Rated Output) m ³ /min (cfm)	33.1 (1,169)	29.8 (1,052)	
Horsepower at Rated kW	hp	243	219	190	171	Maximum Exhaust Backpressure	kPa (inHg)	2.54 (0.75)	2.54 (0.75)
Piston Speed	m/min (ft/min)	450 (1,477)	450 (1,477)	475 (1,559)	475 (1,559)	Exhaust Temp (Rated Output - Post Silencer)	°C (°F)	689 (1,273)	633 (1,171)
BMEP	kPa (psi)	1,020 (148)	917 (133)	752 (109)	676 (98)				

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 0187500SSB

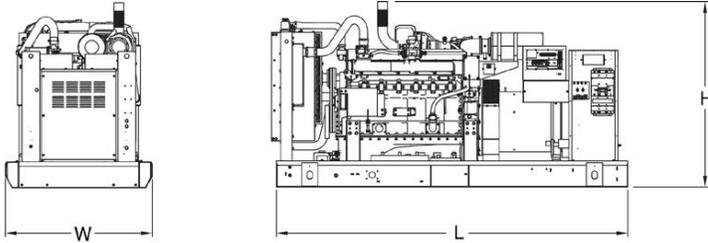
Prime - See Bulletin 0187510SSB

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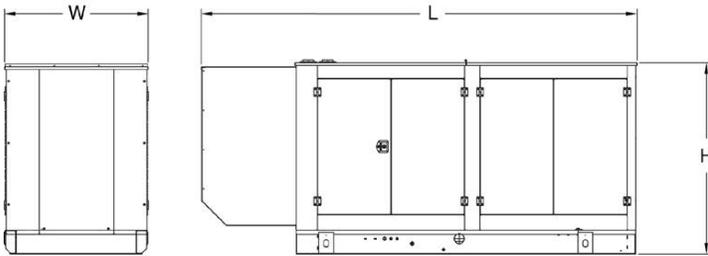
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DIMENSIONS AND WEIGHTS*



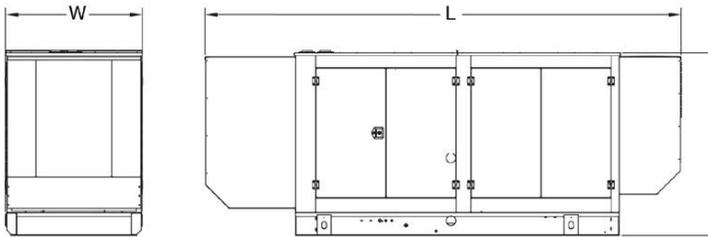
OPEN SET (Includes Exhaust Flex)

L x W x H - mm (in)	3,250 (128.0) x 1,357 (53.4) x 1,583 (62.3)
Weight - kg (lbs)	2,477 (5,460)



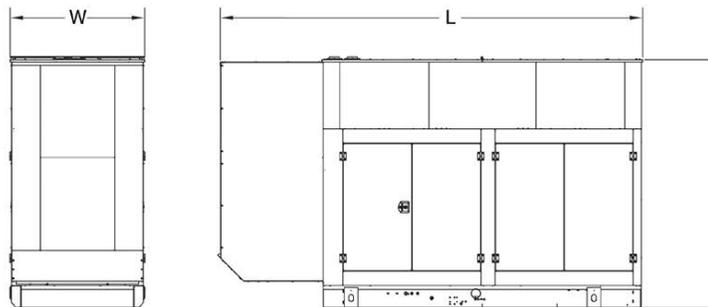
STANDARD ENCLOSURE

L x W x H - mm (in)	3,909 (154.4) x 1,371 (54.0) x 1,772 (69.8)
Weight - kg (lbs)	Steel: 2,921 (6,440) Aluminum: 2,710 (5,974)



LEVEL 1 ACOUSTIC ENCLOSURE

L x W x H - mm (in)	4,569 (179.9) x 1,371 (54.0) x 1,772 (69.8)
Weight - kg (lbs)	Steel: 3,059 (6,744) Aluminum: 2,769 (6,104)



LEVEL 2 ACOUSTIC ENCLOSURE

L x W x H - mm (in)	3,923 (154.5) x 1,371 (54.0) x 2,370 (93.3)
Weight - kg (lbs)	Steel: 3,166 (6,980) Aluminum: 2,815 (6,206)

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

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