GENERAC® | INDUSTRIAL POWER

SG230 230 kW

SG230

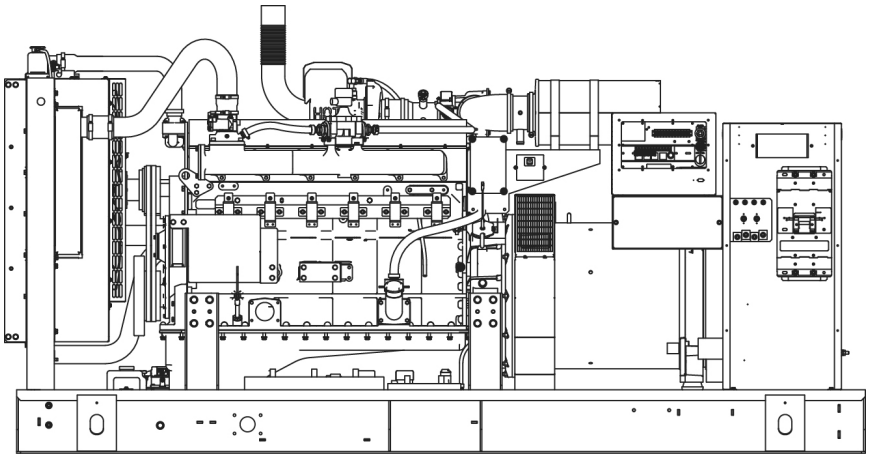
12.9L

Industrial Spark-Ignited Generator Set

EPA Certified Stationary Emergency

Standby Power Rating

230 kW 288 kVA 60 Hz



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Codes and Standards

Generac products are designed to the following standards:

UL2200, UL508, UL142, UL498, ETL

NFPA70, 99, 110, 37

NEC700, 701, 702, 708

ISO9001, 8528, 3046, 7637, Pluses #2b, 4

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

American National Standards Institute

IBC 2009, CBC 2010, IBC 2012, ASCE 7-05, ASCE7-10, ICC-ES AC-156 (2012)

Powering Ahead

For over 50 years, Generac has led the industry with 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's 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 application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

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SG230

Standard Features

ENGINE SYSTEM

General

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel flexible exhaust connection
- Critical Exhaust Silencer
- Factory Filled Oil
- Radiator duct adapter (open set only)

Fuel System

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

Cooling System

- Closed Coolant Recovery System
- UV/Ozone resistant hoses
- Factory-installed Radiator
- Radiator drain extension
- 50/50 Ethylene glycol antifreeze

Engine Electrical System

- Battery charging alternator
- Battery Cables
- Battery Tray
- Solenoid activated starter motor
- Rubber-booted engine electrical connections

ALTERNATOR SYSTEM

- UL2200 GENprotect™
- Class H insulation material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearings
- 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 Warranty
- Silencer mounted in the discharge hood (enclosed only)

ENCLOSURE

- Rust-proof fasteners with nylon washers to protect finish
- High performance sound-absorbing material
- Gasketed doors
- Stamped air-intake louvers
- Air discharge hoods for radiator-upward pointing
- Stainless steel lift off door hinges
- Stainless steel lockable handles
- Rhino Coat™ - Textured polyester powder coat

CONTROL SYSTEM

Control Panel

- Digital H Control Panel - Dual 4x20 Display
- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485
- All-Phase Sensing DVR
- Full System Status
- Utility Monitoring
- Low Fuel Pressure Indication
- 2-Wire Start Compatible
- Power Output (kW)
- Power Factor
- kW Hours, Total & Last Run
- Real/Reactive/Apparent Power
- All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage
- Frequency
- 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
- 15 channel data logging
- 0.2 msec high speed data logging
- Alarm information automatically comes up on the display

Alarms

- Oil Pressure (Pre-programmable Low Pressure Shutdown)
- Coolant Temperature (Pre-programmed High Temp Shutdown)
- Coolant Level (Pre-programmed Low Level Shutdown)
- Low Fuel Pressure Alarm
- Engine Speed (Pre-programmed Over speed Shutdown)
- Battery Voltage Warning
- Alarms & warnings time and date stamped
- Alarms & warnings for transient and steady state conditions
- Snap shots of key operation parameters during alarms & warnings
- Alarms and warnings spelled out (no alarm codes)

SG230

Configurable Options

ENGINE SYSTEM

General

- ○ Engine Block Heater
- ○ Oil Heater
- ○ Air Filter Restriction Indicator
- ○ Stone Guard (Open Set Only)

Engine Electrical System

- ○ 10A UL float/equalized battery charger
- ○ 2.5A UL battery charger

GENERATOR SET

- ○ Gen-Link Communications Software (English Only)
- ○ Extended Factory Testing (3 Phase Only)
- ○ Pad Vibration Isolators
- ○ 150 MPH Wind Kit
- ○ 2 Year Extended Warranty
- ○ 5 Year Warranty
- ○ 5 Year Extended Warranty

ENCLOSURE

- ○ Weather Protected
- ○ Level 1 Sound Attenuation
- ○ Level 2 Sound Attenuation
- ○ Steel Enclosure
- ○ Aluminum Enclosure
- ○ 12VDC Enclosure Lighting Kits
- ○ Door Alarm Switch

ALTERNATOR SYSTEM

- ○ Alternator Upsizing
- ○ Anti-Condensation Heater
- ○ Tropical coating
- ○ Permanent Magnet Excitation

CIRCUIT BREAKER OPTIONS

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

CONTROL SYSTEM

- ○ 21-Light Remote Annunciator
- ○ Remote Relay Panel (8 or 16)
- ○ Oil Temperature Sender with Indication 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
- ○ Remote Communication - Ethernet
- ○ 10A Run Relay

Engineered Options

ENGINE SYSTEM

- ○ Coolant heater ball valves
- ○ Fluid containment pans

GENERATOR SET

- ○ Special Testing
- ○ Battery Box

CONTROL SYSTEM

- ○ Spare inputs (x4) / outputs (x4) - H Panel Only
- ○ Battery Disconnect Switch

ALTERNATOR SYSTEM

- ○ 3rd Breaker Systems

ENCLOSURE

- ○ Motorized Dampers

Rating Definitions

Standby – Applicable for a varying emergency load for the duration of a utility power outage with no overload capability. (Max. load factor = 70%)

Power ratings in accordance with ISO 8528-1, Second Edition dated 2005-06-01, definitions for Prime Power (PRP) and Emergency Standby Power (ESP).

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SG230 application and engineering data

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	6
Type	In-line
Displacement - L (Cu In)	12.88 (785.99)
Bore - mm (in)	135 (5.31)
Stroke - mm (in)	150 (5.91)
Compression Ratio	10.1:1
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	Altronic CD1
Pistons	Aluminum
Crankshaft	Ductile Iron
Lifter Type	Solid
Intake Valve Material	Special Heat-Resistant Steel
Exhaust Valve Material	Alloy Steel, High Temp
Hardened Valve Seats	Alloy Steel, High Temp

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full-flow Cartridge
Crankcase Capacity - L (qts)	34.3 (36.2)

Cooling System

Cooling System Type	Pressurized Closed Recovery
Water Pump Flow - gpm (lpm)	79 (299)
Fan Type	Pusher
Fan Speed (rpm)	1894
Fan Diameter mm (in)	762 (30)
Coolant Heater Wattage	2000
Coolant Heater Standard Voltage	120 V

Fuel System

Fuel Type	Natural Gas
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard
Operating Fuel Pressure	11" - 15" H2O

Engine Electrical System

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

ALTERNATOR SPECIFICATIONS

Standard Model	520
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, Flexible Disc
Prototype Short Circuit Test	Yes

Voltage Regulator Type	Full Digital
Number of Sensed Phases	3
Regulation Accuracy (Steady State)	(+/-) 0.25%

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	(+/-) 0.25%

SG230 operating data

POWER RATINGS

	Natural Gas	
Three-Phase 120/208 VAC @0.8pf	230 kW	Amps: 798
Three-Phase 120/240 VAC @0.8pf	230 kW	Amps: 692
Three-Phase 277/480 VAC @0.8pf	230 kW	Amps: 346
Three-Phase 346/600 VAC @0.8pf	230 kW	Amps: 277

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480 VAC						208/240 VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	230	263	395	527	658	790	922	197	296	395	494	593	692
Upsize 1	250	263	395	527	658	790	922	197	296	395	494	593	692
Upsize 2	300	303	454	605	757	908	1059	227	341	454	568	681	794

FUEL CONSUMPTION RATES*

Natural Gas – ft^3/hr (m^3/hr)

Percent Load	Standby
25%	971 (27.5)
50%	1665 (47.1)
75%	2247 (63.6)
100%	2775 (78.6)

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

COOLING

		Standby
Air Flow (inlet air combustion and radiator)	ft^3/min (m^3/min)	10,078 (285.4)
Coolant Flow per Minute	gpm (lpm)	79 (299)
Coolant System Capacity	gal (L)	19 (71.9)
Heat Rejection to Coolant	BTU/hr	743,830
Max. Operating Air Temp on Radiator	^0F (^0C)	122 (50)
Max. Ambient Temperature	^0F (^0C)	104 (40)
Maximum Radiator Backpressure	in H_2O	0.5

COMBUSTION AIR REQUIREMENTS

		Standby
Flow at Rated Power	cfm (m3/min)	408 (11.6)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	368
Piston Speed	ft/min (m/min)	1773 (540)
BMEP	psi	206

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

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	1442 (40.8)
Maximum Recommended Back Pressure	inHg	1.5
Exhaust Temp (Rated Output)	^0F (^0C)	1446
Exhaust Outlet Size (Open Set)	in	3.5" I.D. Flex (No Muffler)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards. All power ratings are +/- 5%.

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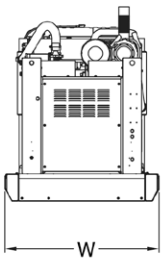
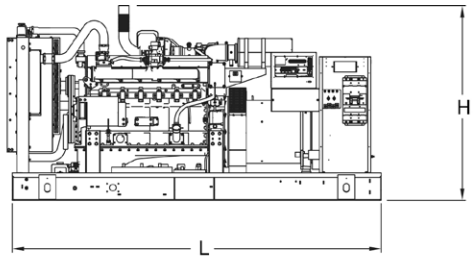
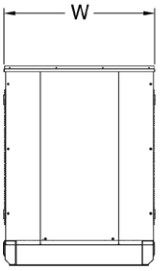
SG230 dimensions, weights, and sound levels

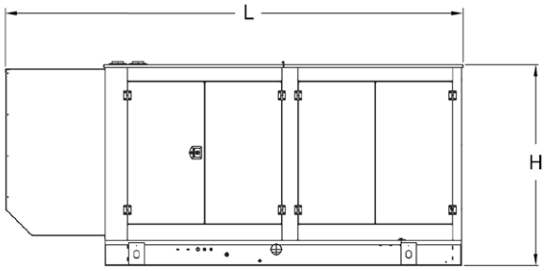




OPEN SET (Includes Exhaust Flex)

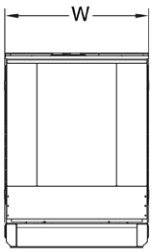
L x W x H in (mm)	138.74 (3524.1) x 57.6 (1463.1) x 68.04 (1728.3)
Weight lbs (kg)	6364 (2887)
Sound Level (dBA*)	84.1

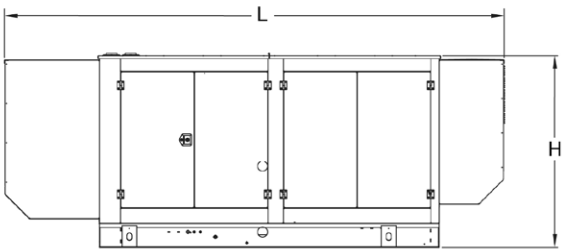




STANDARD ENCLOSURE

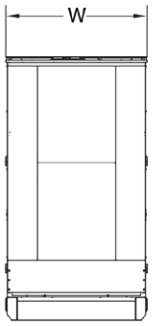
L x W x H in (mm)	174.7 (4437.4) x 52.98 (1345.7) x 77.8 (1976.1)
Weight lbs (kg)	Steel: 7538 (3420) Aluminum: 6765 (3069)
Sound Level (dBA*)	81.3

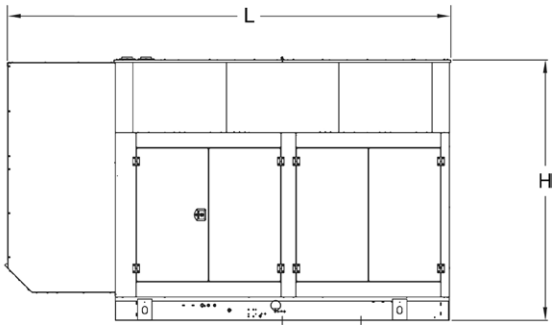




LEVEL 1 ACOUSTIC ENCLOSURE

L x W x H in (mm)	200.19 (5084.7) x 57.49 (1460.4) x 77.80 (1976.1)
Weight lbs (kg)	Steel: 8094 (3672) Aluminum: 6955 (3155)
Sound Level (dBA*)	76.4





LEVEL 2 ACOUSTIC ENCLOSURE

L x W x H in (mm)	180.65 (4588.4) x 57.49 (1460.4) x 107.3 (2725.4)
Weight lbs (kg)	Steel: 8656 (3927) Aluminum: 7156 (3246)
Sound Level (dBA*)	71.6

*All measurements are approximate and for estimation purposes only. Sound levels measured at 23 ft (7 m) and does not account for ambient site conditions.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

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

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