

# SD080 | 4.5L | 80 kW

## INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

**GENERAC®** | INDUSTRIAL  
POWER

### Standby Power Rating

80 kW, 100 kVA, 60 Hz

### Prime Power Rating\*

72 kW, 90 kVA, 60 Hz



\*Assembled in the USA using domestic and foreign parts

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

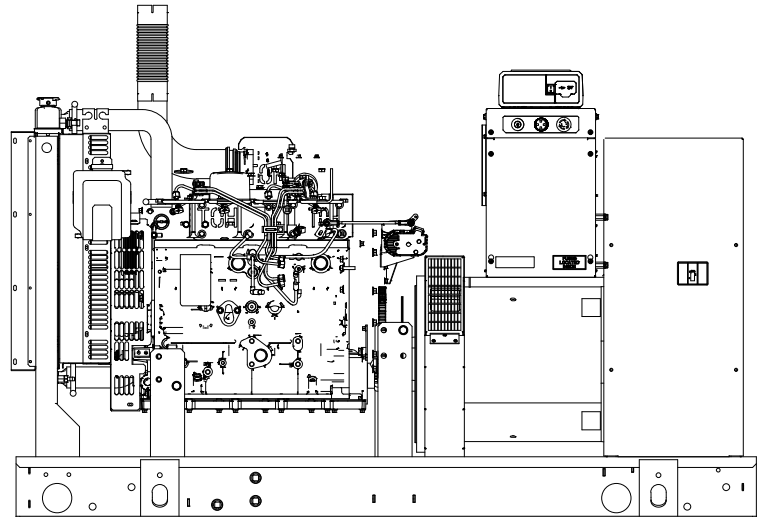


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## Codes and Standards

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.

**STANDARD FEATURES**

**ENGINE SYSTEM**

- Engine Block Heater
- Oil Drain Extension
- Air Cleaner
- Level 1 Fan and Belt Guard (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer (Enclosed Only)

**Fuel System**

- Fuel Lockoff Solenoid
- Primary Fuel Filter

**Cooling System**

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- Radiator Drain Extension
- 50/50 Ethylene Glycol Antifreeze
- 120 VAC Coolant Heater

**Electrical System**

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

**ALTERNATOR SYSTEM**

- UL2200 GENprotect™
- 12 Leads (3-Phase, Non 600V)
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Auxiliary Voltage Regulator Power Winding
- Brushless Excitation
- Sealed Bearing
- Rotor Dynamically Spin Balanced
- Amortisseur Winding
- Full Load Capacity Alternator
- Protective Thermal Switch

**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 (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)
- Silencer Mounted in the Discharge Hood (Enclosed Unit Only)

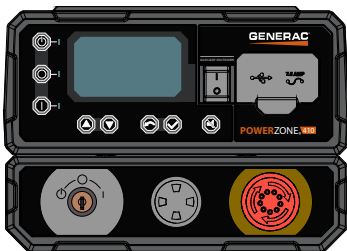
**ENCLOSURE (If Selected)**

- 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 Construction
- Normal and Emergency Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested
- 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
- I<sup>2</sup>T 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 Indication and Alarm
- 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 Make-Up System
- Oil Heater
- Shipped Loose Industrial Silencer (Open Set Only)
- Radiator Stone Guard (Open Set Only)
- Level One Fan and Belt Guards (Enclosed Units Only)
- Air Filter Restriction Indicator

### FUEL SYSTEM

- Flexible Fuel Lines

### ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

### ALTERNATOR SYSTEM

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

### GENERATOR SET

- 8 Position Load Center
- Extended Factory Testing

### CIRCUIT BREAKER OPTIONS

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

### 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
- Door Open Alarm Horn
- Pad Vibration Isolation
- Enclosure Heater (with Motorized Dampers Only)
- IBC Seismic Certification

### 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

### CONTROL SYSTEM

- NFPA 110 Compliant 21-Light Remote Annunciator
- Remote Relay Assembly (8 or 16)
- Oil Temperature Indication and 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)
- E-Stop Terminal
- 10A Engine Run Relay
- Ground Fault Annunciator
- Damper Alarm Contacts (with Motorized Dampers Only)
- 120V GCFI and 240V Outlets
- 100 dB Alarm Horn

### FUEL TANKS (Size On Last Page)

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

## ENGINEERED OPTIONS

### ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

### CONTROL SYSTEM

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

### ALTERNATOR SYSTEM

- 3rd Breaker System

### FUEL TANKS

- UL2085 Tank
- Stainless Steel Tanks

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## 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 - in <sup>3</sup> (L)	274.6 (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
Oil Filter Type	Full-Flow Cartridge
Crankcase Capacity - qt (L)	14.4 (13.6)

#### Cooling System

Cooling System Type	Closed
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 #2
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	K0080124Y21
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
Load Capacity - Standby	100%
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 - DIESEL

		Standby
Single-Phase 120/240 VAC @1.0pf	80 kW	Amps: 333
Three-Phase 120/208 VAC @0.8pf	80 kW	Amps: 278
Three-Phase 120/240 VAC @0.8pf	80 kW	Amps: 241
Three-Phase 277/480 VAC @0.8pf	80 kW	Amps: 120
Three-Phase 346/600 VAC @0.8pf	80 kW	Amps: 96

#### MOTOR STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip			
277/480 VAC	30%	208/240 VAC	30%
K0080124Y21	172	K0080124Y21	132
K0100124Y21	227	K0100124Y21	171
K0130124Y21	327	K0130124Y21	327

#### FUEL CONSUMPTION RATES\*

Fuel Pump Lift - ft (m)	Diesel - gph (Lph)	
	Percent Load	Standby
3 (1)	25%	2.1 (7.9)
	50%	3.7 (14.0)
	75%	5.2 (19.7)
	100%	6.3 (23.8)
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)		
13.6 (51.5)		

\* 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)	232,270 (68.0)
Inlet Air	cfm (m <sup>3</sup> /hr)	6,360 (180)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Ambient Temperature (Before Derate)	See Bulletin No. 0199280SSD	
Maximum Additional Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.5 (0.12)

#### COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power-cfm (m <sup>3</sup> /min)	306 (8.7)

#### ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	131
Piston Speed	ft/min (m/min)	1,559 (475)
BMEP	psi (kPa)	210 (1,448)

#### EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m <sup>3</sup> /min)	790 (22.4)
Maximum Allowable Backpressure	inHg (kPa)	1.5 (5.1)
Exhaust Temperature (Rated Output)	°F (°C)	887 (475)

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

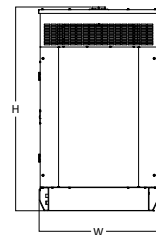
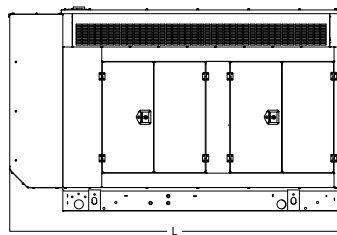
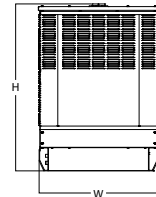
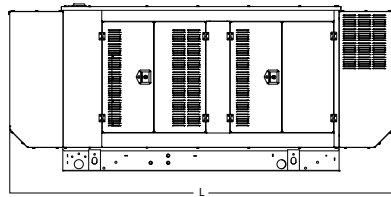
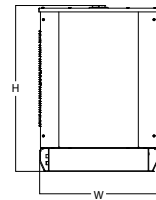
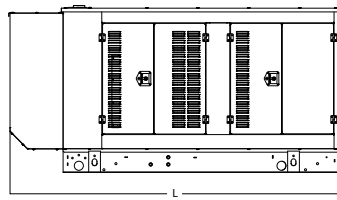
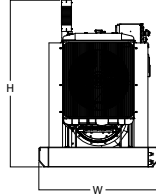
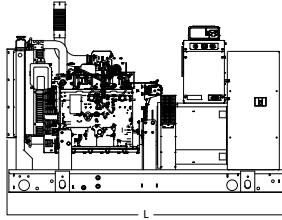
Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.

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 0187500SSB

Prime - See Bulletin 0187510SSB

**DIMENSIONS AND WEIGHTS\***



**OPEN SET**

Run Time - Hours	Usable Capacity - gal (L)	L x W x H - in (mm)	Weight - lbs (kg)
No Tank	-	93 (2,362) x 40 (1,016) x 49 (1,245)	2,425 (1,100)
13	79 (299)	93 (2,362) x 40 (1,016) x 62 (1,575)	2,947 (1,201)
30	189 (715)	93 (2,362) x 40 (1,016) x 74 (1,880)	3,183 (1,444)
48	300 (1,336)	93 (2,362) x 40 (1,016) x 86 (2,184)	3,407 (1,545)
56	350 (1,325)	110 (2,794) x 40 (1,016) x 86 (2,184)	Contact Factory
81	510 (1,931)	117 (2,972) x 47 (1,194) x 86 (2,184)	3,790 (1,719)
93	589 (2,230)	128 (3,251) x 49 (1,245) x 86 (2,184)	4,269 (1,936)

**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	-	112 (2,845) x 41 (1,041) x 56 (1,422)		
13	79 (299)	112 (2,845) x 41 (1,041) x 69 (1,753)		
30	189 (715)	112 (2,845) x 41 (1,041) x 81 (2,057)		
48	300 (1,336)	112 (2,845) x 41 (1,041) x 93 (2,362)	425 (193)	155 (70)
56	350 (1,325)	112 (2,845) x 41 (1,041) x 93 (2,362)		
81	510 (1,931)	117 (2,972) x 47 (1,194) x 93 (2,362)		
93	589 (2,230)	128 (3,251) x 49 (1,245) x 93 (2,362)		

**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	-	130 (3,302) x 41 (1,041) x 56 (1,422)		
13	79 (299)	130 (3,302) x 41 (1,041) x 69 (1,753)		
30	189 (715)	130 (3,302) x 41 (1,041) x 81 (2,057)		
48	300 (1,336)	130 (3,302) x 41 (1,041) x 93 (2,362)	450 (204)	285 (129)
56	350 (1,325)	130 (3,302) x 41 (1,041) x 93 (2,362)		
81	510 (1,931)	130 (3,302) x 47 (1,194) x 93 (2,362)		
93	589 (2,230)	130 (3,302) x 49 (1,245) x 93 (2,362)		

**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	-	112 (2,845) x 41 (1,041) x 69 (1,753)		
13	79 (299)	112 (2,845) x 41 (1,041) x 82 (2,083)		
30	189 (715)	112 (2,845) x 41 (1,041) x 94 (2,388)		
48	300 (1,336)	112 (2,845) x 41 (1,041) x 106 (2,692)	625 (284)	395 (180)
56	350 (1,325)	112 (2,845) x 41 (1,041) x 106 (2,692)		
81	510 (1,931)	117 (2,972) x 47 (1,194) x 106 (2,692)		
93	589 (2,230)	128 (3,251) x 49 (1,245) x 106 (2,692)		

\* All measurements are approximate and specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a Generac Power Systems Industrial Dealer for detailed installation drawings.