

# SD250 | 8.7L | 250 kW INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

## Standby Power Rating

250 kW, 313 kVA, 60 Hz

## Prime Power Rating\*

225 kW, 281 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

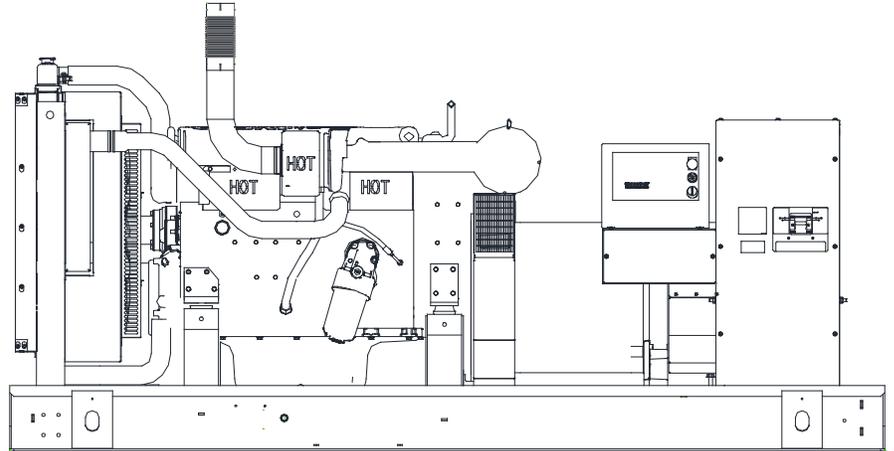


Image used for illustration purposes only

## 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**

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Level 1 Fan and Belt Guards (Open Set Only)
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Critical Silencer

**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**

- GENprotect™
- 12 Leads (3-Phase, Non 600V)
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Auxiliary Voltage Regulator Power Winding
- Permanent Magnet Excitation
- Sealed Bearings
- Automated Manufacturing (Winding, Insertion, Lacing, Varnishing)
- 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 Units Only)

**ENCLOSURE (If Selected)**

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuation 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**



**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
- All 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
- 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)

# SD250 | 8.7L | 250 kW INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

## CONFIGURABLE OPTIONS

### ENGINE SYSTEM

- Block Heater
- Oil Make-Up System
- Oil Heater
- Industrial Exhaust Silencer (Open Set Only)

### FUEL SYSTEM

- Flexible Fuel Lines
- Primary Fuel Filter

### ELECTRICAL SYSTEM

- 10A UL Listed 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
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

### GENERATOR SET

- Extended Factory Testing
- IBC Seismic Certification
- 8 Position Load Center

### ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Steel Enclosure
- Aluminum Enclosure
- Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Spring or Pad Vibration Isolators

### FUEL TANKS (Size On Last Page)

- Overfill Prevention Valve
- Fuel Fill Drop Tube
- 5 Gal Spill Return Hose
- Tank Risers
- Florida DEP-DERM
- Vent Extensions
- Fire Rated Fuel Hose
- 8 in (203.2 mm) Fill Extension
- 13 in (330.2 mm) Fill Extension

### 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)
- Remote Communication - Modem
- 10A Engine Run Relay
- Ground Fault Annunciator

### WARRANTY

- 2 Year Extended Limited Warranty
- 5 Year Limited Warranty
- 5 Year Extended Limited Warranty
- 7 Year Extended Limited Warranty
- 10 Year Extended Limited Warranty

## 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

### GENERATOR SET

- Motorized Dampers
- Door Open Alarm Horn
- Enclosure Heaters
- Special Testing

# SD250 | 8.7L | 250 kW INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

## APPLICATION AND ENGINEERING DATA

### ENGINE SPECIFICATIONS

#### General

Make	Iveco/FPT
EPA Emissions Compliance	Stationary Emergency
EPA Emissions Reference	See Emission Data Sheet
Cylinder #	6
Type	In-Line
Displacement - in <sup>3</sup> (L)	530.91 (8.7)
Bore - in (mm)	4.61 (117)
Stroke - in (mm)	5.31 (135)
Compression Ratio	16.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	4-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)	29.6 (28.0)

#### Cooling System

Cooling System Type	Closed
Water Pump Type	Pre-Lubed, Self Sealing
Fan Type	Pusher
Fan Speed - RPM	2,538
Fan Diameter - in (mm)	30 (762)

#### Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel #2
Fuel Specifications	ASTM
Fuel Filtering (Microns)	5
Fuel Inject Pump Make	Electronic
Fuel Pump Type	Engine Driven Gear
Injector Type	Common Rail
Engine Type	Direct Injection
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	24 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 0161970SBY
Battery Voltage	12 VDC
Ground Polarity	Negative

### ALTERNATOR SPECIFICATIONS

Standard Model	K0250124Y21
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 Excitation
Bearings	Single Sealed Cartridge
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%

# SD250 | 8.7L | 250 kW

## INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

### OPERATING DATA

#### POWER RATINGS - DIESEL

	Standby	
Three-Phase 120/208 VAC @0.8pf	250 kW	Amps: 867
Three-Phase 120/240 VAC @0.8pf	250 kW	Amps: 752
Three-Phase 277/480 VAC @0.8pf	250 kW	Amps: 376
Three-Phase 346/600 VAC @0.8pf	250 kW	Amps: 301

#### MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip			
277/480 VAC 3Ø	30%	208/240 VAC 3Ø	30%
K0250124Y21	630	K0250124Y21	506
K0300124Y21	996	K0300124Y21	730
K0350124Y21	1,190	K0350124Y21	987

#### FUEL CONSUMPTION RATES\*

Fuel Pump Lift- ft (m)	Diesel - gph (Lph)	
	Percent Load	Standby
3 (1)	25%	5.5 (20.8)
Total Fuel Pump Flow (Combustion + Return) - gph (Lph)	50%	10.4 (39.4)
	75%	14.8 (56.0)
	100%	18.5 (70.0)
26 (98)		

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

#### COOLING

		Standby
Coolant Flow	gpm (Lpm)	63.3 (240.0)
Coolant System Capacity	gal (L)	12.7 (49.2)
Heat Rejection to Coolant	BTU/hr (kW)	682,058 (200)
Inlet Air	cfm (m³/hr)	8,872 (251)
Maximum Operating Radiator Air Temperature	°F (°C)	122 (50)
Maximum Operating 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 (m³/min)	720 (20.4)

#### ENGINE

		Standby
Rated Engine Speed	RPM	1,800
Horsepower at Rated kW**	hp	389
Piston Speed	ft/min (m/min)	1,593 (486)
BMEP	psi (kPa)	332 (2,289)

#### EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	1,550 (43.9)
Maximum Allowable Backpressure	inHg (kPa)	1.5 (5.1)
Exhaust Temperature (Rated Output)	°F (°C)	1,000 (538)

\*\* 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.

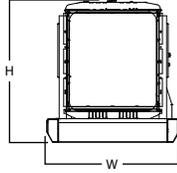
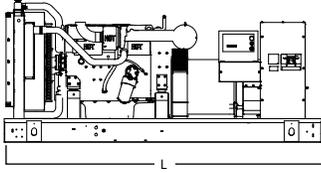
Standby - See Bulletin 0187500SSB

Prime - See Bulletin 0187510SSB

**SD250 | 8.7L | 250 kW**  
**INDUSTRIAL DIESEL GENERATOR SET**

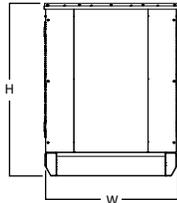
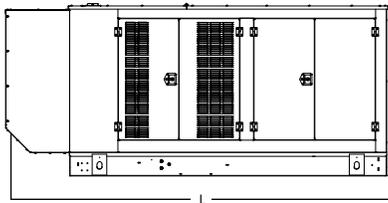
EPA Certified Stationary Emergency

**DIMENSIONS AND WEIGHTS**



**OPEN SET**

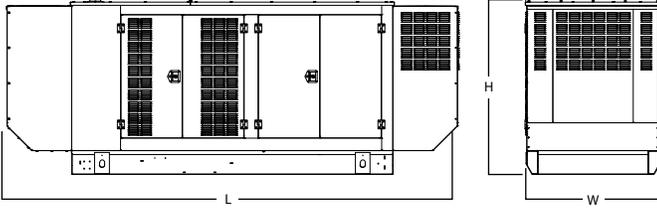
Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)		Weight - lbs (kg)	
				Steel	Aluminum
No Tank	-	128.0 (3,250) x 53.4 (1,357) x 57.5 (1,460)		4,325 - 5,108 (1,926 - 2,317)	
8	153 (579)	128.0 (3,250) x 53.4 (1,357) x 70.5 (1,790)		5,330 - 6,113 (2,382 - 2,773)	
20	372 (1,408)	128.0 (3,250) x 53.4 (1,357) x 82.5 (2,095)		5,752 - 6,535 (2,573 - 2,964)	
31	589 (2,230)	128.0 (3,250) x 53.4 (1,357) x 94.5 (2,400)		6,169 - 6,952 (2,762 - 3,153)	
27	500 (1,893)	172.6 (4,384) x 53.4 (1,357) x 81.5 (2,070)		6,388 - 7,171 (2,696 - 3,087)	
37	693 (2,623)	136.0 (3,455) x 53.4 (1,357) x 94.5 (2,400)		5,890 - 6,673 (2,636 - 3,027)	
51	946 (3,581)	208.3 (5,292) x 53.4 (1,357) x 98.5 (2,500)		7,350 - 8,133 (3,298 - 3,689)	
54	1,000 (3,785)	208.3 (5,292) x 53.4 (1,357) x 98.5 (2,500)		7,500 - 8,283 (3,111 - 3,502)	
71	1,325 (5,016)	277.8 (7,055) x 53.4 (1,357) x 96.9 (2,460)		8,365 - 9,148 (3,759 - 4,150)	



**WEATHER PROTECTED ENCLOSURE**

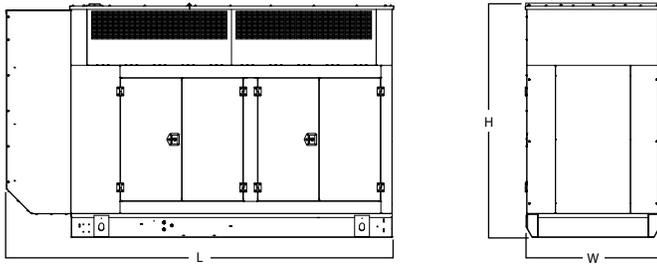
Run Time - Hours	Usable Capacity - Gal (L)	L x W x H - in (mm)		Weight - lbs (kg)	
				Steel	Aluminum
No Tank	-	154.5 (3,923) x 54 (1,371) x 69.8 (1,772)			
8	153 (579)	154.5 (3,923) x 54 (1,371) x 82.8 (2,102)			
20	372 (1,408)	154.5 (3,923) x 54 (1,371) x 94.8 (2,407)			
31	589 (2,230)	154.5 (3,923) x 54 (1,371) x 106.8 (2,712)			
27	500 (1,893)	172.6 (4,384) x 54 (1,371) x 93.8 (2,382)			
37	693 (2,623)	154.5 (3,923) x 54 (1,371) x 106.8 (2,712)			
51	946 (3,581)	208.3 (5,292) x 54 (1,371) x 110.8 (2,812)			
54	1,000 (3,785)	208.3 (5,292) x 54 (1,371) x 110.8 (2,812)			
71	1,325 (5,016)	277.8 (7,055) x 54 (1,371) x 109.2 (2,772)			

**DIMENSIONS AND WEIGHTS\***



**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	-	179.9 (4,569) x 54.0 (1,371) x 70.0 (1,772)		
8	153 (579)	179.9 (4,569) x 54.0 (1,371) x 83.0 (2,102)		
20	372 (1,408)	179.9 (4,569) x 54.0 (1,371) x 95.0 (2,407)		
31	589 (2,230)	179.9 (4,569) x 54.0 (1,371) x 107.0 (2,712)		
27	500 (1,893)	179.9 (4,569) x 54.0 (1,371) x 94.0 (2,382)	1,246 (565)	606 (275)
37	693 (2,623)	179.9 (4,569) x 54.0 (1,371) x 107.0 (2,712)		
51	946 (3,581)	208.3 (5,292) x 54.0 (1,371) x 111.0 (2,812)		
54	1,000 (3,785)	197.8 (5,024) x 54.5 (1,384) x 105.0 (2,661)		
71	1,325 (5,016)	277.8 (7,055) x 54.0 (1,371) x 109.4 (2,772)		



**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	-	154.5 (3,923) x 54.0 (1,371) x 93.3 (2,370)		
8	153 (579)	154.5 (3,923) x 54.0 (1,371) x 106.3 (2,700)		
20	372 (1,408)	154.5 (3,923) x 54.0 (1,371) x 118.3 (3,005)		
31	589 (2,230)	154.5 (3,923) x 54.0 (1,371) x 130.3 (3,310)		
27	500 (1,893)	172.6 (4,384) x 54.0 (1,371) x 117.3 (2,980)	1,482 (672)	708 (321)
37	693 (2,623)	154.5 (3,923) x 54.0 (1,371) x 130.3 (3,310)		
51	946 (3,581)	208.3 (5,292) x 54.0 (1,371) x 134.3 (3,410)		
54	1,000 (3,785)	197.8 (5,024) x 54.5 (1,384) x 128.3 (3,259)		
71	1,325 (5,016)	277.8 (7,055) x 54.0 (1,371) x 132.7 (3,370)		

\* 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.