SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

Standby Power Rating

500 kW, 625 kVA, 60 Hz

Prime Power Rating*

450 kW, 563 kVA, 60 Hz

*Built in the USA using domestic and foreign parts

*EPA Certified Prime ratings are not available in the US or its Territories
*Built in the USA using domestic and foreign parts

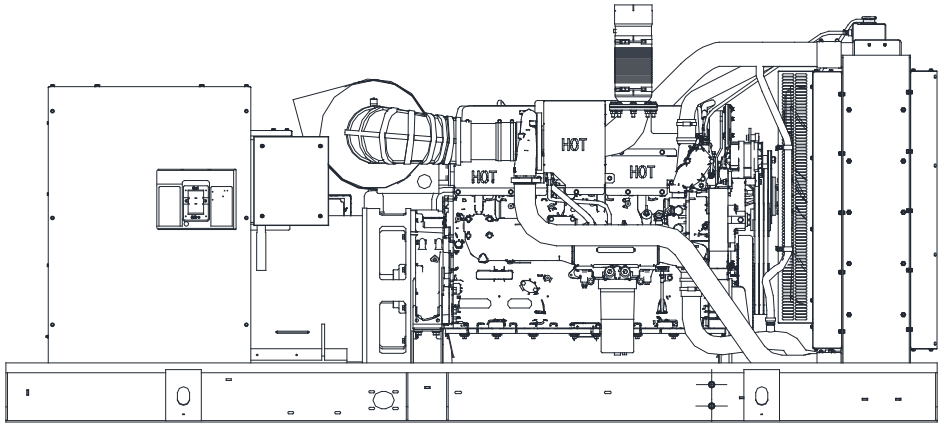


Image used for illustration purposes only

Codes and Standards

Generac products are designed to the following standards:

UL2200, UL508, UL142, UL489

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 50 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.

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

STANDARD OPTIONS

ENGINE SYSTEM

- Oil Drain Extension
- Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Critical Exhaust Silencer (Enclosed Only)
- Factory Filled Oil & Coolant
- Radiator Duct Adapter (Open Set Only)

Fuel System

- Primary Fuel Filter

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- 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™
- Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- Skewed Stator
- Amortisseur Winding
- Permanent Magnet Excitation
- Sealed Bearings
- Full Load Capacity Alternator
- Protective Thermal Switch

GENERATOR SET

- Rust-Proof Fasteners with Nylon Washer to Protect Finish
- High Performance Sound-Absorbing Material
- Gasketed Doors
- Air Discharge Hoods for Radiator-Upward Pointing
- Stainless Steel Lift off Door Hinges
- Stainless Steel Lockable Handles
- Rhino Coat™ - Textured Polyester Powder Coat

ENCLOSURE (if selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (L1 & L2)
- 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

TANK (if selected)

- UL 142
- Double Wall
- Vents
- Sloped Top
- Sloped Bottom
- Factory Pressure Tested (2 psi)
- Rupture Basin Alarm
- Fuel Level
- Check Valve in Supply and Return Lines
- Rhino Coat™ - Textured Polyester Powder Coat
- Stainless Hardware

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
- 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 Shut-down)
- Low Fuel Alarm
- Engine Speed (Pre-Programmed Over Speed Shut-down)
- 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)

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- ○ Block Heater (Coolant)
- ○ Crankcase Heater (Oil)
- ○ Critical Grade Silencers
- ○ Fan and Belt Guard (Optional)
- ○ Flexible Fuel Lines Included with Base Tank
- ○ Stone Guard (Open Set Only)

ELECTRICAL SYSTEM

- ○ Battery
- ○ 10A UL Battery Charger
- ○ Battery Warmer

ALTERNATOR SYSTEM

- ○ Alternator Upsizing
- ○ Anti-Condensation Heater

CIRCUIT BREAKER OPTIONS

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

GENERATOR SET

- ○ Gen-Link Communications Software (English Only)
- ○ 8 Position Load Center
- ○ Alarm Horn
- ○ Extended Factory Testing
- ○ 2 Year Extended Warranty
- ○ 5 Year Warranty
- ○ 5 Year Extended Warranty
- ○ 7 Year Extended Warranty
- ○ 10 Year Extended Warranty

ENCLOSURE

- ○ Standard Enclosure (Weather)
- ○ Level 1 Sound Attenuation
- ○ Level 2 Sound Attenuation
- ○ Steel Enclosure
- ○ Aluminum Enclosure
- ○ IBC Seismic Certification
- ○ 180 MPH Wind Kit
- ○ AC/DC Enclosure Lighting Kit

CONTROL SYSTEM

- ○ 21-Light Remote Annunciator
- ○ Ground Fault Indication and Protection Functions
- ○ Engine Run Relay 10A (1-NO, 1- NC)
- ○ 120 VAC GFCI outlet
- ○ Oil Temperature Indication
- ○ Remote Relay Panel (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

TANKS (Size On Last Page)

- ○ Electronic Fuel Level
- ○ Mechanical Fuel Level

ENGINEERED OPTIONS

ENGINE SYSTEM

- ○ Fluid Containment Pans
- ○ Coolant Heater Ball Valves

ALTERNATOR SYSTEM

- ○ 3rd Breaker Systems
- ○ Unit Mounted Load Banks

CONTROL SYSTEM

- ○ Spare Inputs (x4) / Outputs (x4) - H Panel Only

GENERATOR SET

- ○ Special Testing
- ○ Battery Box

ENCLOSURE

- ○ Motorized Dampers
- ○ Intrusion Alert Door Switch
- ○ Customer Color

TANKS

- ○ Overfill Protection Valve
- ○ UL 2085 Tank
- ○ ULC S-601 Tank
- ○ Stainless Steel Tank
- ○ Special Fuel Tanks
- ○ Vent Extensions
- ○ 5 Gallon Spill Containment Box
- ○ Dealer Supplied AHJ Requirements

RATING DEFINITIONS

Standby - Applicable for a varying emergency load for the duration of a utility power outage with no overload capability.

Prime - Applicable for supplying power to a varying load in lieu of utility for an unlimited amount of running time. A 10% overload capacity is available for 1 out of every 12 hours. The Prime Power option is only available on International applications. Power ratings in accordance with ISO 8528-1, Second Edition.

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL POWER

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Perkins
Cylinder #	6
Type	In-Line
Displacement - L (cu in)	15.2 (927.56)
Bore - mm (in)	137 (5.39)
Stroke - mm (in)	171 (6.73)
Compression Ratio	16.0:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head Type	4-Valve
Piston Type	Aluminum
Crankshaft Type	I-Beam Section

Engine Governing

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

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow
Crankcase Capacity - L (qts)	45 (47.55)

Cooling System

Cooling System Type	Closed Recovery
Water Pump Type	Centrifugal Type, Belt-Driven
Fan Type	Pusher
Fan Speed (rpm)	1658
Fan Diameter - mm (in)	927 (36.5)
Coolant Heater Wattage	1500
Coolant Heater Standard Voltage	120 V

Fuel System

Fuel Type	Ultra Low Sulfur Diesel #2
Carburetor	ASTM
Fuel Filtering (microns)	Primary 10 - Secondary 2
Fuel Inject Pump Make	Electronic
Injector Type	MEUI
Engine Type	Pre-Combustion
Fuel Supply Line - mm (in)	12.7 (0.5) NPT
Fuel Return Line - mm (in)	12.7 (0.5) NPT

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	WEG
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<3%
Telephone Interference Factor (TIF)	<50
Standard Excitation	Permanent Magnet
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.25%

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

OPERATING DATA

POWER RATINGS

		Standby
Three-Phase 120/208 VAC @0.8pf	500 kW	Amps: 1735
Three-Phase 120/240 VAC @0.8pf	500 kW	Amps: 1504
Three-Phase 277/480 VAC @0.8pf	500 kW	Amps: 752
Three-Phase 346/600 VAC @0.8pf	500 kW	Amps: 601

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

		480 VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%
Standard	500	457	686	914	1143	1371	1600
Upsize 1	642	471	707	943	1179	1414	1650
Upsize 2	832	757	1136	1514	1893	2271	2650

		208/240 VAC					
Alternator	kW	10%	15%	20%	25%	30%	35%
Standard	500	429	643	857	1071	1286	1500
Upsize 1	689	543	814	1086	1357	1629	1900
Upsize 2	723	571	857	1143	1429	1714	2000

FUEL CONSUMPTION RATES*

Fuel Pump Lift - ft (m)
12 (3.7)
Total Fuel Pump Flow (Combustion + Return) gph (lph)
121 (457)

Diesel - gph (lph)

Percent Load	Standby
25%	10.5 (39.7)
50%	19.5 (73.8)
75%	23.7 (89.7)
100%	31.2 (118.1)

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

COOLING

		Standby
Coolant Flow per Minute	gpm (lpm)	114.1 (432)
Coolant System Capacity	gal (L)	264 (999)
Heat Rejection to Coolant	BTU/hr	1,198,080
Inlet Air	cfm (m^3/min)	30,582 (866)
Max. Operating Ambient Temperature (Before Derate)	°F (°C)	104 (40)
Maximum Radiator Backpressure	in H_2O	0.50

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at Rated Power cfm (m^3/min)	1483 (42)

ENGINE

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	835
Piston Speed	ft/min	2020
BMEP	psi	366

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m^3/min)	3400 (96)
Max. Backpressure (Post Silencer)	in Hg (Kpa)	2.01 (6.8)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1022 (550)
Exhaust Outlet Size (Open Set)	mm (in)	127 (5)

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

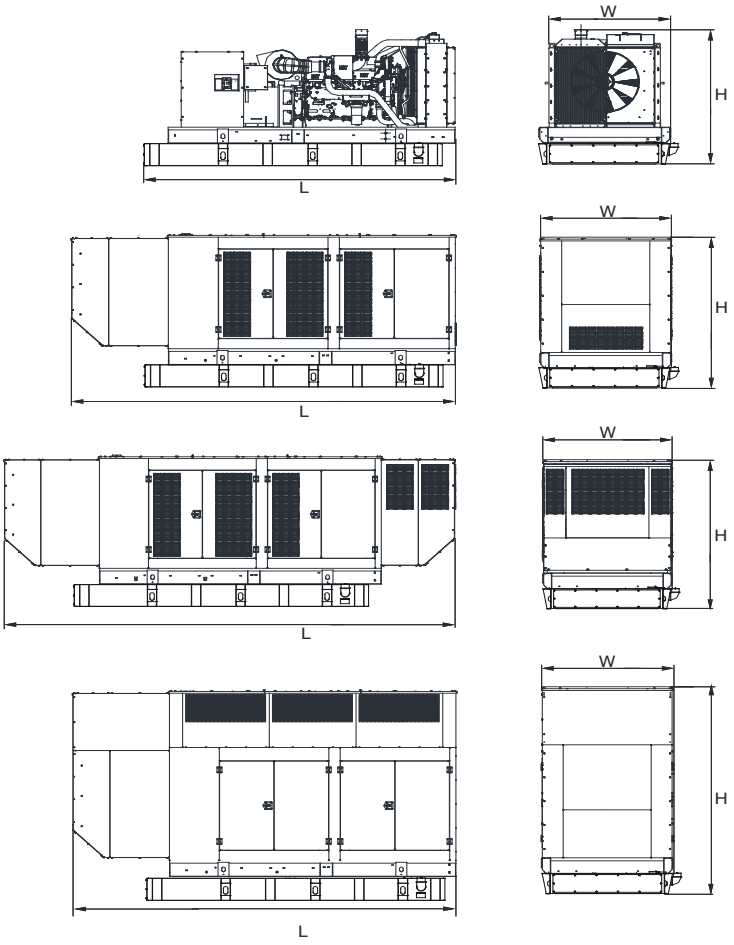
Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

SD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

DIMENSIONS AND WEIGHTS*



OPEN SET (Includes Exhaust Flex)

Run Time Hours	Usable Capacity Gal (L)	L x W x H (in (mm)	Weight lbs (kg)
No Tank	-	154.4 (3923) x 71 (1803) x 67 (1702)	10580 (4799)
10	334	158.5 (4026) x 71 (1803) x 81 (2057)	12255 (5559)
32	1001	158.5 (4026) x 71 (1803) x 103 (2616)	13180 (6228)
32	1001	228 (5791) x 71 (1803) x 103 (2616)	13730 (6228)
64	2002	290 (7366) x 71 (1803) x 103 (2616)	15430 (6999)

STANDARD ENCLOSURE

Run Time Hours	Usable Capacity Gal (L)	L x W x H (in (mm)	Weight lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	207.4 (5268) x 71 (1803) x 80 (2032)	1999 (907)	869 (394)
10	334	207.4 (5268) x 71 (1803) x 94 (2388)		
32	1001	207.4 (5268) x 71 (1803) x 116 (2946)		
32	1001	228 (5791) x 71 (1803) x 105 (2667)		
64	2002	290 (7366) x 71 (1803) x 116 (2946)		

LEVEL 1 ACOUSTIC ENCLOSURE

Run Time Hours	Usable Capacity Gal (L)	L x W x H (in (mm)	Weight lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	247.5 (6285) x 71 (1803) x 80 (2032)	2782 (1262)	1291 (586)
10	334	247.5 (6285) x 71 (1803) x 94 (2388)		
32	1001	247.5 (6285) x 71 (1803) x 116 (2946)		
32	1001	247.5 (6285) x 71 (1803) x 105 (2667)		
64	2002	290 (7366) x 71 (1803) x 116 (2946)		

LEVEL 2 ACOUSTIC ENCLOSURE

Run Time Hours	Usable Capacity Gal (L)	L x W x H (in (mm)	Weight lbs (kg) Enclosure Only	
			Steel	Aluminum
No Tank	-	207.4 (5268) x 71 (1803) x 114 (2899)	3330 (1510)	1522 (692)
10	334	207.4 (5268) x 71 (1803) x 128 (3251)		
32	1001	207.4 (5268) x 71 (1803) x 150 (3810)		
32	1001	228 (5791) x 71 (1803) x 139 (3531)		
64	2002	290 (7366) x 71 (1803) x 150 (3810)		

* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

Generac Power Systems, Inc. | P.O.Box 8 | Waukesha, WI 53189
P: (262) 544-4811

Part No 0197160SBY
Rev. D 09/21/15