

MD500 | 15.2L | 500 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency

GENERAC | INDUSTRIAL
POWER

Standby Power Rating

500 kW, 625 kVA, 60 Hz

Prime Power Rating*

450 kW, 563 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

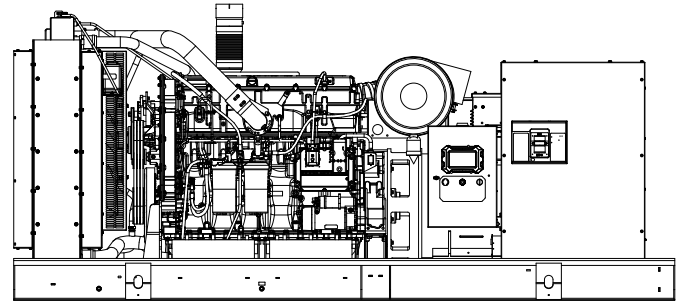


Image used for illustration purposes only.

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



NEMA ICS10, MG1, 250, ICS6,
AB1



ANSI C62.41

Powering a Smarter World

For over 65 years, Generac has been at the forefront of power generation, pioneering innovative solutions and unparalleled manufacturing excellence. At the heart of our reputation for superior quality lies our commitment to meticulously designing and manufacturing key components of our generators—ranging from alternators and enclosures to base tanks, control systems, and cutting-edge communications software.

Generac's gensets stand out for their unparalleled versatility and reliability. Engineered to offer a wide range of options and configurations, they are tailored to meet the unique demands of virtually any application, seamlessly adapting to its complexity. Our commitment to reliability drives us to globally source only the most dependable engines, selected through stringent criteria to ensure they perform optimally under the toughest industrial conditions.

Beyond the sale, Generac's dedication to our customers extends to comprehensive service support, for peace of mind and reliability long after your purchase. Our commitment is to not only provide state-of-the-art power solutions but also to ensure the enduring success and satisfaction of our customers through ongoing support and service excellence.

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
- Critical Silencer (Enclosed Units Only)
- Factory Filled Oil and 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

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 Manget Excitation
- Sealed Bearing
- Full Load Capacity Alternator
- Protective Thermal Switch
- Main Line Circuit Breaker

GENERATOR SET

- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Separation of Circuits - Multiple Breakers
- Wrapped Exhaust Piping (Enclosed Units 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 Units Only)

ENCLOSURE (If Selected)

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

FUEL TANKS (If Selected)

- UL 142/ULC S601
- Double Wall Construction
- 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



Power Zone® Pro Sync Controller

- NFPA 110 Level 1 Compliant
- Engine Protective Functions
- Alternator Protective Functions
- Digital Engine Governor Control
- Digital Voltage Regulator
- Multiple Programmable Inputs and Outputs
- Remote Display Capability
- Remote Communication via Modbus® RTU, Modbus TCP/IP, and Ethernet 10/100
- Alarm and Event Logging with Real Time Stamping
- Expandable Analog and Digital Inputs and Outputs

- Remote Wireless Software Update Capable
- BMS and Remote Telemetry
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Ethernet Based Communications Between Generators
- Programmable I/O Channel Properties
- Built-In Diagnostics
- Arc Flash Maintenance Mode (When Correctly Equipped)

Alarms and Warnings

- Low Oil Pressure
- Low Coolant Level
- High/Low Coolant Temperature
- Sensor Failure
- Oil Temperature
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over/Under Current
- Over Load
- High/Low Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I²T Algorithm)

7 Inch Color Touch Screen Display

- Resistive Color Touch Screen
- Sunlight Readable (1400 NITS)
- Easily Identifiable Icons
- Multi-Lingual
- On Screen Editable Parameters
- Key Function Monitoring
- Three Phase Voltage, Amperage, kW, kVA, and kVAR
- Selectable Line to Line or Line to Neutral Measurements
- Frequency
- Engine Speed
- Engine Coolant Temperature
- Engine Oil Pressure
- Engine Oil Temperature
- Battery Voltage
- Hourmeter
- Warning and Alarm Indication
- Diagnostics
- Maintenance Events/Information

CONFIGURABLE OPTIONS**ENGINE SYSTEM**

- Engine Coolant Heater
- Oil Heater
- Level 1 Fan and Belt Guards (Open Set Only)
- Radiator Stone Guard (Open Set Only)

FUEL SYSTEM

- NPT Flexible Fuel Line

ELECTRICAL SYSTEM

- 10A UL Listed Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater

CIRCUIT BREAKER OPTIONS

- Shunt Trip and Auxiliary Contact
- Electronic Trip Breakers

GENERATOR SET

- 12 Position Load Center
- Extended Factory Testing

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuated
- Level 2 Sound Attenuated
- Level 2 Sound Attenuated with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- IBC Seismic Certification/OSHPD Preapproval
- Up to 200 mph Wind Load Rating (Contact Factory for Availability)
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch
- Enclosure Heater

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 Sender with Alarm
- Ground Fault Annunciator
- 10A Engine Run Relay
- 120V GFCI and 240V Outlets
- Remote E-Stop (Break Glass-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Surface Mount)
- Remote E-Stop (Red Mushroom-Type, Flush Mount)
- Damper Alarm Contacts (Motorized Dampers Only)
- 100dB Alarm Horn

ENGINEERED OPTIONS**ENGINE SYSTEM**

- Coolant Heater Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Battery Disconnect Switch

GENERATOR SET

- Special Testing
- Battery Box

FUEL TANKS

- Overfill Protection Valve
- UL2085 Tank
- Stainless Steel Tank
- Special Fuel Tanks
- Vent Extensions
- 5 Gallon Spill Containment Box
- Dealer Supplied AHJ Requirements

ENCLOSURE

- Door Open Alarm Horn

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Perkins
Cylinder	6
Type	In-Line
Displacement - in ³ (L)	927.56 (15.2)
Bore - in (mm)	5.39 (137)
Stroke - in (mm)	6.73 (171)
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 Driven
Oil Filter Type	Full-Flow
Crankcase Capacity - qt (L)	47.55 (45)

Cooling System

Cooling System Type	Closed Recovery
Water Pump Type	Centrifugal Type, Belt-Driven
Fan Type	Pusher
Fan Speed (rpm)	1,658
Fan Diameter - in (cm)	36.5 (92.7)

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 - 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	(2) - 12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	K0500124Y23
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 Seated 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%

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GENERAC | **INDUSTRIAL POWER**

OPERATING DATA

POWER RATINGS

	Standby	
Three-Phase 277/480 VAC @0.8pf	500 kW	Amps: 752
Three-Phase 346/600 VAC @0.8pf	500 kW	Amps: 601

MOTOR STARTING CAPABILITIES (SKVA)

skVA vs. Voltage Dip	
277/480 VAC	30%
K0500124Y23	1,020
K0600124Y23	1,560
K0832124Y23	2,800

FUEL CONSUMPTION RATES*

Fuel Pump Lift - ft (m)	Diesel – gph (Lph)	
	Percent Load	Standby
12 (3.7)	25%	9.6 (36.3)
	50%	18.45 (69.8)
	75%	24.9 (94.3)
	100%	31.3 (118.5)
Total Fuel Pump Flow (Combustion + Return) – gph (Lph)		
121 (457)		

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

COOLING

		Standby
Coolant Flow	gpm (Lpm)	114.1 (432)
Coolant System Capacity	gal (L)	15.5 (586)
Heat Rejection to Coolant	BTU/hr (kW)	648,307 (190)
Maximum Operating Ambient Temperature	°F (°C)	122 (50)
Maximum Operating Ambient Temperature (Before Derate)	See Bulletin No. 0199270SSD	
Maximum Allowable Radiator Backpressure	in H ₂ O (kPa)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby
Flow at rated power cfm - (m ³ /min)	1,483 (42)

ENGINE

		Standby
Rated Engine Speed	rpm	1,800
Horsepower at Rated kW**	hp	755
Piston Speed	ft/min (m/min)	2,020 (616)
BMEP	psi (kPa)	358 (2,468)

EXHAUST

		Standby
Exhaust Flow (Rated Output)	cfm (m ³ /min)	3,955 (112)
Maximum Backpressure (Post Silencer)	inHg (kPa)	2.01 (6.8)
Exhaust Temperature (Rated Output - Post Silencer)	°F (°C)	1,022 (550)

** See "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.

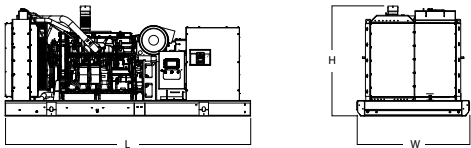
Please contact a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.

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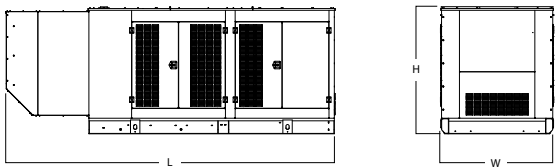
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DIMENSIONS AND WEIGHTS*



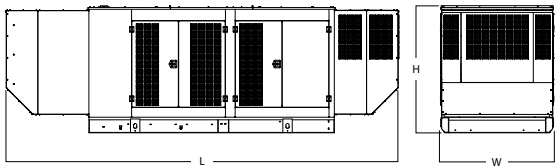
OPEN SET

Run Time Hours	Usable Capacity - gal (L)	L x W x H - in (cm)	Weight - lbs (kg)	
No Tank	—	154.4 x 71.0 x 67.3 (392.3 x 180.3 x 170.9)	8,393 - 10,580 (3,807 - 4,799)	
10	334 (1,264)	158.5 x 71.0 x 81.3 (402.5 x 180.3 x 206.5)	10,068 - 12,255 (4,567 - 5,559)	
31	1,001 (3,789)	158.5 x 71.0 x 103.3 (402.5 x 180.3 x 262.3)	10,993 - 13,180 (4,986 - 5,978)	
31	1,001 (3,789)	228.0 x 71.1 x 92.3 (579.1 x 180.3 x 234.4)	11,543 - 13,730 (5,236 - 6,228)	
62	2,002 (7,578)	290.0 x 71.0 x 103.3 (736.6 x 180.3 x 262.3)	13,243 - 15,430 (6,007 - 6,936)	



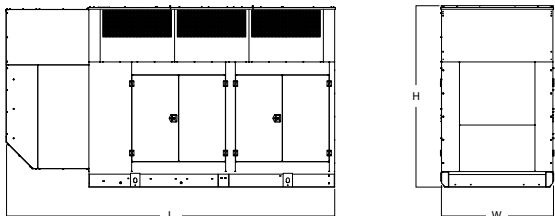
WEATHER PROTECTED ENCLOSURE

Run Time Hours	Usable Capacity - gal (L)	L x W x H - in (cm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	207.4 x 70.9 x 79.9 (526.8 x 180.0 x 203.1)	2,238 (1,015)	1,151 (522)
10	334 (1,264)	207.4 x 70.9 x 93.9 (526.8 x 180.0 x 238.7)		
31	1,001 (3,789)	207.4 x 70.9 x 115.9 (526.8 x 180.0 x 294.5)		
31	1,001 (3,789)	228.0 x 70.9 x 104.9 (579.1 x 180.0 x 266.6)		
62	2,002 (7,578)	290.0 x 70.9 x 115.9 (736.6 x 180.0 x 294.5)		



LEVEL 1 SOUND ATTENUATED ENCLOSURE

Run Time Hours	Usable Capacity - gal (L)	L x W x H - in (cm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	247.5 x 70.9 x 80.0 (628.5 x 180.0 x 203.2)	3,243 (1,471)	1,583 (718)
10	334 (1,264)	247.5 x 70.9 x 94.0 (628.5 x 180.0 x 238.8)		
31	1,001 (3,789)	247.5 x 70.9 x 116.0 (628.5 x 180.0 x 294.6)		
31	1,001 (3,789)	247.5 x 70.9 x 105.0 (628.5 x 180.0 x 266.7)		
62	2,002 (7,578)	247.5 x 70.9 x 116.0 (628.5 x 180.0 x 294.6)		



LEVEL 2 SOUND ATTENUATED ENCLOSURE

Run Time Hours	Usable Capacity - gal (L)	L x W x H - in (cm)	Weight - lbs (kg)	
			Steel	Aluminum
No Tank	—	207.4 x 70.9 x 114.1 (526.8 x 180.0 x 289.9)	3,580 (1,624)	1,726 (783)
10	334 (1,264)	207.4 x 70.9 x 128.1 (526.8 x 180.0 x 325.5)		
31	1,001 (3,789)	207.4 x 70.9 x 150.1 (526.8 x 180.0 x 381.3)		
31	1,001 (3,789)	228.0 x 70.9 x 139.1 (579.1 x 180.0 x 353.4)		
62	2,002 (7,578)	290.0 x 70.9 x 150.1 (736.6 x 180.0 x 381.3)		

* 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