

MG500 | 25.8L | 500 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

Generac International Products

GENERAC | INDUSTRIAL
POWER

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



Image used for illustration purposes only

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, 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.

There's one place you'll find a Generac liquid-cooled spark ignited generator engine. In a Generac industrial generator. We engineer it, manufacture it and install it in our factory. Applying natural gas and LP fueled engines to generators takes advanced engineering expertise to ensure reliability, durability and necessary performance. By using materials designed for dryer, hotter burning fuel, the engines last longer and require less maintenance. Building our own engines also means we control every step of the supply chain and delivery process, so we can give you the best lead times in the industry. Plus, Generac Industrial Power dealers provide all parts and service, without dealing with third-party suppliers. It all leads to a positive owner experience and higher confidence level. The Generac brand of spark-ignited engines gives you more options in commercial and industrial standby applications, as well as a number of performance benefits, including:

- Extended run time from utility fed natural gas
- Lower total ownership costs (capital, fuel & maintenance) compared to diesels
- Environmentally friendly exhaust emissions
- High power density & optimized rpm options

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

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POWER

ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Ship Loose Catalyst Silencer (Open Set Only)
- Factory Filled Oil & Coolant
- Radiator Duct Adapter (Open Set Only)

Fuel System

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

Cooling System

- Closed Coolant Recovery System
- UV/Ozone Resistant hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

Engine Electrical System

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

ALTERNATOR SYSTEM

- GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Permanent Magnet Excitation
- Sealed Bearing
- 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
- Catalyst Silencer Mounted in the Discharge Hood (Enclosed Only)

ENCLOSURE (if selected)

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

CONTROL SYSTEM

Digital G Control Panel - Touch Screen

- Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable Logic Controller
- RS-232/485 Communications
- 3 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)
- E-Stop (Red Mushroom-Type)
- Auto/Off/Manual Switch
- 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
- 0.2msec High Speed Remote Trending
- Alarm Information Automatically Annunciated on the Display

Full System Status Display

- 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

Alarms

- Oil Pressure
- Coolant Temperature
- Coolant Level
- Low Fuel Pressure Alarm
- Engine Overspeed
- Battery Voltage
- Alarms & warnings Time and Date Stamped
- Snap Shots of Key Operation Parameters during Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

Paralleling Controls

- Auto-Synchronization Process
- Isochronous Load Sharing
- Reverse Power Protection
- Maximum Power Protection
- Electrically Operated, Mechanically Held Paralleling Switch or Power Circuit Breaker
- Sync Check System
- Independent On-Board Paralleling

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POWER

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Engine Coolant Heater
- Oil Heater
- Air Filter Restriction Indicator
- Stone Guard (Open Set Only)
- Critical Exhaust Silencer (Open Set Only)

ELECTRICAL SYSTEM

- 10A Battery Charger
- Battery Warmer

FUEL SYSTEM

- Flexible Fuel Line

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater

CIRCUIT BREAKER OPTIONS

- Electronic Trip Breakers

GENERATOR SET

- GenLink® Communications Software (English Only)
- Extended Factory Testing
- 12 Position Load Center
- 100dB Alarm Horn
- 120V GVFCI and 240V Outlet

ENCLOSURE

- Weather Protected Standard Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- Level 2 Sound Attenuation with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- AC/DC Enclosure Lighting Kit
- Door Alarm Switch
- Enclosure Ambient Heaters

CONTROL SYSTEM

- 21-Light Remote Annunciator
- Remote Relay Panel (8 or 16)
- Oil Temperature Indicator with 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
- 10A Run Relay
- Ground Fault Indication and Protection Functions
- Damper Alarm Contacts
- Programmable Logic Full Auto Back-Up Control (PLS)

ENGINEERED OPTIONS

ENGINE SYSTEM

- Coolant Heater Ball Valves
- Fluid Containment Pan

CONTROL SYSTEM

- Battery Disconnect Switch

GENERATOR SET

- Special Testing
- Battery Box
- IBC Seismic Certification
- Up to 200 MPH Wind Load Rating*

RATING DEFINITIONS

Standby - See Bulletin 0187500SSB

Prime - See Bulletin 0187510SSB

*Consult factory for availability

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	12
Type	90°V
Displacement - L (Cu In)	25.8 (1574)
Bore - mm (in)	132 (5320)
Stroke - mm (in)	160 (6.30)
Compression Ratio	10:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	7
Connecting Rods	Alloy Steel
Cylinder Head	Cast Iron - OHV
Cylinder Liners	Cast Alloy Steel
Ignition	Electronic
Piston Type	Aluminum Alloy
Crankshaft Type	Forged Alloy Steel
Lifter Type	Solid
Intake Valve Material	High Temp Alloy Steel
Exhaust Valve Material	High Temp Alloy Steel
Hardened Valve Seats	High Temp Alloy Steel

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	± 0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Twin Full-flow with Intercooler
Crankcase Capacity - L (qts)	90 (95)

Cooling System

Cooling System Type	Pressurized Closed Recovery
Water Pump Flow - gal/min (l/min)	253.6 (960)
Fan Type	Pusher
Fan Speed (rpm)	1680
Fan Diameter - mm (in)	117.6 (44)

Fuel System

Fuel Type	Natural Gas
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
Fuel Shut Off Solenoid	Standard (Dual)
	11" - 14" H ₂ O or 7" - 11" H ₂ O
Operating Fuel Pressure	

Engine Electrical System

System Voltage	24 VDC
Battery Charger Alternator	Standard
	See Battery Index
Battery Size	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 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%

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OPERATING DATA

POWER RATINGS

		Standby		Prime	
Three-Phase 120/208 VAC @0.8pf	500 kW	Amps: 1735	450 kW	Amps: 1561	
Three-Phase 120/240 VAC @0.8pf	500 kW	Amps: 1504	450 kW	Amps: 1353	
Three-Phase 277/480 VAC @0.8pf	500 kW	Amps: 752	450 kW	Amps: 677	
Three-Phase 346/600 VAC @0.8pf	500 kW	Amps: 601	450 kW	Amps: 541	

STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip

480 VAC								208/240 VAC							
Alternator	kW	10%	15%	20%	25%	30%	35%	Alternator	kW	10%	15%	20%	25%	30%	35%
Standard	500	457	686	917	1143	1371	1600	Standard	500	419	643	857	1071	1486	1500
Upsize 1	642	471	707	943	1179	1414	1650	Upsize 1	689	543	814	1086	1357	1629	1900
Upsize 2	832	757	1136	1514	1893	2271	2650	Upsize 2	723	571	857	1143	1429	1714	2000

FUEL CONSUMPTION RATES*†

Natural Gas – ft³/hr (m³/hr)

Percent Load	Standby	Prime
25%	2320 (66)	2088 (5934)
50%	3550 (101)	3195 (90.9)
75%	4780 (135)	4302 (121.5)
100%	6000 (170)	5400 (153)

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

COOLING

		Standby	Prime
Air Flow (inlet air combustion and radiator)	ft³/min (m³/min)	9349 (264.7)	9349 (264.7)
Coolant Flow per Minute	gal/min (l/min)	264 (999)	264 (999)
Coolant System Capacity	gal (l)	10.5 (39.7)	10.5 (39.7)
Heat Rejection to Coolant	BTU/hr	526,760	474,084
Maximum Radiator Backpressure	in H ₂ O	0.50	0.50

COMBUSTION AIR REQUIREMENTS

	Standby	Prime
Flow at Rated Power cfm (m³/min)	938 (26)	314 (8.91)

ENGINE

EXHAUST

		Standby	Prime			Standby	Prime
Rated Engine Speed	rpm	1800	1800	Exhaust Flow (Rated Output)	cfm (m³/min)	3400 (96)	3060 (86)
Horsepower at Rated kW**	hp	777	699	Max. Backpressure (Post Silencer)	in Hg (Kpa)	2.5	2.5
Piston Speed	ft/min	1893 (577)	1893 (577)	Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1300 (704)	1170 (634)
BMEP	psi	226	226				

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

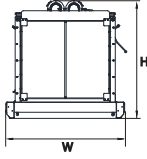
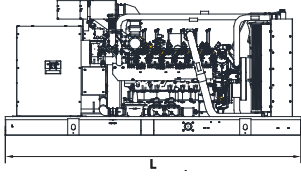
Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions. Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.

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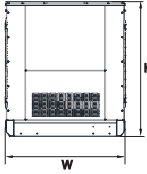
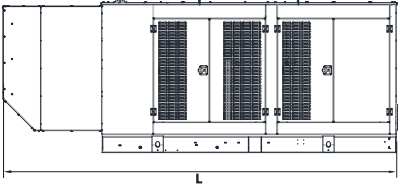


DIMENSIONS AND WEIGHTS*



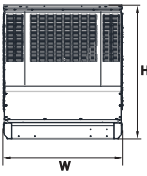
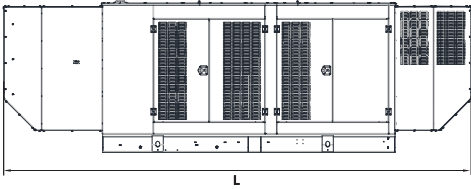
OPEN SET (Includes Exhaust Flex)

L x W x H (in (mm))	128 (3250) x 53.4 (1357) x 62.3 (1583)
Weight lbs (kg)	9739 (4417)



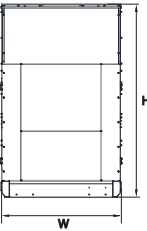
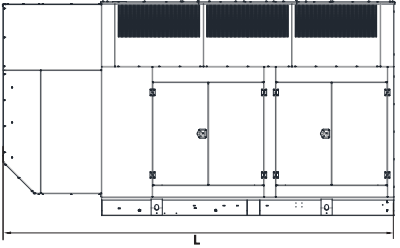
STANDARD ENCLOSURE

L x W x H (in (mm))	154.4 (3909) x 54 (1371) x 69.8 (1772)
Weight lbs (kg)	Steel: 11,929 (5410) Aluminum: 10,841 (4917)



LEVEL 1 ACOUSTIC ENCLOSURE

L x W x H (in (mm))	179.9 (4569) x 54 (1371) x 69.8 (1772)
Weight lbs (kg)	Steel: 12,936 (5867) Aluminum: 11,274 (5113)



LEVEL 2 ACOUSTIC ENCLOSURE

L x W x H (in (mm))	154.45 (3922.9) x 54 (1371) x 93.3 (2370)
Weight lbs (kg)	Steel: 13,274 (6020) Aluminum: 11,419 (5179)

* 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.