# GGW500G | 25.8L | 500kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

*Assembled in the USA using domestic and foreign parts

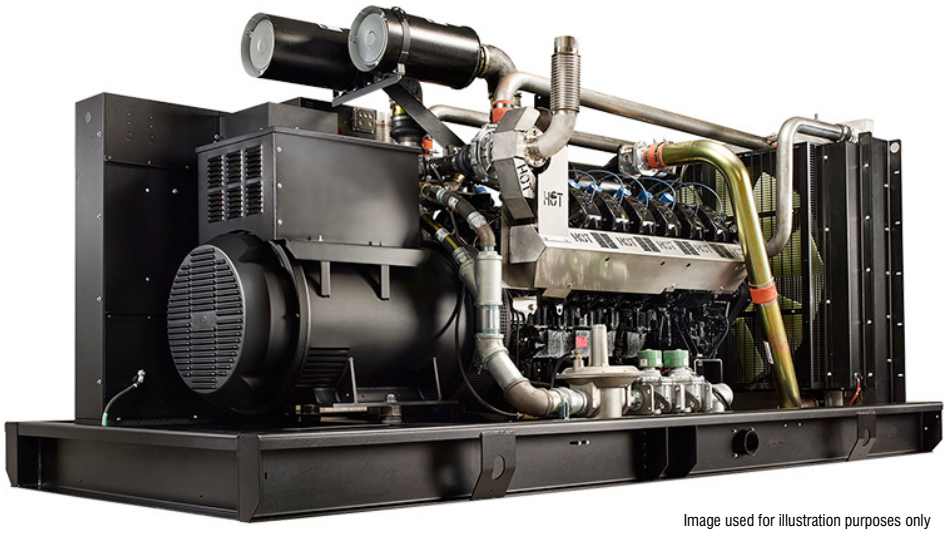

Image used for illustration purposes only

| Power Ratings | | |
|---|---|---|
| GGW500 | Standby | 500 kW/625 kVA |
| | Prime | 450 kW/563 kVA |

## Codes and Standards

**Not all codes and standards apply to all configurations. Contact factory for details.**

BS5514 and DIN 6271

SAE J1349

ISO 3046, 7637, 8528, 9001

NEMA ICS10, MG1, 250, ICS6, AB1

ANSI C62.41

## ENERGY GENERATION

PRAMAC and its affiliates ensure superior quality and performance by managing all aspects of production: from design to manufacturing.

PRAMAC can trace its roots back to 1966; from then onwards it has been expanding its activity in the energy and material-handling sector, continuously growing globally with a wide and flexible product range.

In the field of power generation, PRAMAC offers solutions for every kind of power supply demand: portable and industrial generators for stand by and prime power applications, and mobile and towable lighting for outdoor needs.

PRAMAC operates through a wide distribution network and provides global coverage even in the most demanding markets.

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## STANDARD FEATURES

### ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil and Coolant
- Radiator Duct Adapter (Open Set Only)
- Oil Temperature Indication and Alarm

### Fuel System

- NPT Fuel Connection on Frame
- 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

### 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
- 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
- Standard Factory Testing
- 1 Year Limited Warranty or 1,000 Hours
- 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 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

### Power Zone® Controller

#### Program Functions

- 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
- Wi-Fi, Bluetooth, 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

#### Protections

- 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 ($I^2T$ Algorithm)

#### 7 Inch Color Touch Screen Display

- Capacitive 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

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## CONFIGURABLE OPTIONS

### ENGINE SYSTEM

- ○ Baseframe Cover/Rodent Guard
- ○ Oil Heater
- ○ Air Filter Restriction Indicator
- ○ Radiator Stone Guard (Open Set Only)
- ○ Fan and Belt Guards (Enclosed Units Only)
- ○ Engine Coolant Heater

### FUEL SYSTEM

- ○ NPT Flexible Fuel Line

### ELECTRICAL SYSTEM

- ○ 10A Battery Charger
- ○ Battery Warmer

### ALTERNATOR SYSTEM

- ○ Alternator Upsizing
- ○ Anti-Condensation Heater

### CIRCUIT BREAKER OPTIONS

- ○ Main Line Circuit Breaker
- ○ 2nd Main Line Circuit Breaker
- ○ 3rd Main Line Circuit Breaker
- ○ Shunt Trip and Auxiliary Contact
- ○ Electronic Trip Breakers

### GENERATOR SET

- ○ Extended Factory Testing (3 Phase Only)

### ENCLOSURE

- ○ Weather Protected Enclosure
- ○ Level 1 Sound Attenuation
- ○ Level 3 Sound Attenuation (Steel Enclosure)
- ○ Steel Enclosure
- ○ Aluminum Enclosure
- ○ Up to 321 KMH Wind Load Rating (Contact Factory for Availability)
- ○ AC/DC Enclosure Lighting Kit
- ○ Door Alarm Switch

### CONTROL SYSTEM

- ○ NFPA 110 Level 1 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)
- ○ 10A Engine Run Relay
- ○ Ground Fault Annunciator
- ○ 100 dB Alarm Horn

## ENGINEERED OPTIONS

### ENGINE SYSTEM

- ○ Fluid Containment Pan

### CIRCUIT BREAKER OPTIONS

- ○ 4th Main Line Circuit Breaker

### CONTROL SYSTEM

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

### GENERATOR SET

- ○ Special Testing
- ○ Battery Box

### ENCLOSURE

- ○ Motorized Dampers

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## APPLICATION AND ENGINEERING DATA

### ENGINE SPECIFICATIONS

#### General

| | |
|---|---|
| Make | Generac |
| Cylinder # | 12 |
| Type | V12 |
| Displacement – $in^3$ (L) | 1,574 (25.8) |
| Bore – in (mm) | 5.19 (132) |
| Stroke – in (mm) | 6.30 (160) |
| Compression Ratio | 10.0:1 |
| Intake Air Method | Turbocharged/Aftercooled |
| Number of Main Bearings | 7 |
| Connecting Rods | Steel Alloy |
| Cylinder Head | Cast Iron |
| Cylinder Liners | Cast Steel Alloy |
| Ignition | Electronic |
| Piston Type | Aluminum Alloy |
| Crankshaft Type | Forged Steel Alloy |
| Lifter Type | Solid |
| Intake Valve Material | High Temp Steel Alloy |
| Exhaust Valve Material | High Temp Steel Alloy |
| Hardened Valve Seats | High Temp Steel Alloy |

#### 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 – qt (L) | 95 (90) |

#### Cooling System

| | |
|---|---|
| Cooling System Type | Pressurized Closed Recovery |
| Fan Type | Pusher |
| Fan Speed – RPM | 1,640 |
| Fan Diameter – in (mm) | 44 (1,117) |

#### Fuel System

| | |
|---|---|
| Fuel Type | Natural Gas |
| Carburetor | Down Draft |
| Secondary Fuel Regulator | Standard |
| Fuel Shut Off Solenoid | Standard (Dual) |
| Operating Fuel Pressure – in $H_2O$ (kPa) | 11–14 (2.7–3.5) |
| Optional Operating Fuel Pressure – in $H_2O$ (kPa) | 7–11 (1.7–2.7) |

#### Engine Electrical System

| | |
|---|---|
| System Voltage | 24 VDC |
| Battery Charger Alternator | Standard |
| Battery Size | See Battery Index 10000016949 |
| Battery Voltage | (2) - 12 VDC |
| Ground Polarity | Negative |

### ALTERNATOR SPECIFICATIONS

| | |
|---|---|
| Standard Model | K0500124Y21 |
| Poles | 4 |
| Field Type | Revolving |
| Insulation Class - Rotor | H |
| Insulation Class - Stator | H |
| Total Harmonic Distortion | <5% |
| Telephone Interference Factor (TIF) | <52 |
| Standard Excitation | Permanent Magnet |
| Bearings | Single Sealed Ball |
| Coupling | Direct via Flexible Disc |
| Prototype Short Circuit Test | Yes |
| Voltage Regulator Type | Full Digital |
| Number of Sensed Phases | All |
| Regulation Accuracy (Steady State) | ±0.25% |

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## OPERATING DATA

### POWER RATINGS – NATURAL GAS

| | Standby | Prime |
|---|---|---|
| Three-Phase 120/208 VAC @0.8pf | 500 kW/625 kVA Amps: 1,735 | 450 kW/563 kVA Amps: 1,561 |
| Three-Phase 120/240 VAC @0.8pf | 500 kW/625 kVA Amps: 1,504 | 450 kW/563 kVA Amps: 1,353 |
| Three-Phase 277/480 VAC @0.8pf | 500 kW/625 kVA Amps: 752 | 450 kW/563 kVA Amps: 677 |
| Three-Phase 346/600 VAC @0.8pf | 500 kW/625 kVA Amps: 601 | 450 kW/563 kVA Amps: 541 |

### MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip

| 277/480 VAC | 30% | 208/240 VAC | 30% |
|---|---|---|---|
| K0500124Y23 | 1,050 | K0600124Y23 | 1,120 |
| K0600124Y23 | 1,560 | | |

### FUEL CONSUMPTION RATES*

Natural Gas – scfh ($m^3$/hr)

| Percent Load | Standby | Prime |
|---|---|---|
| 25% | 2,550 (72.2) | 2,295 (65.0) |
| 50% | 3,600 (101.9) | 3,240 (91.7) |
| 75% | 4,740 (134.2) | 4,266 (120.8) |
| 100% | 5,820 (164.8) | 5,238 (148.3) |

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

### COOLING

| | | Standby | Prime |
|---|---|---|---|
| Air Flow (Fan Air Flow Across Radiator) | scfm ($m^3$/min) | 23,550 (666) | 23,550 (666) |
| Coolant Flow | gpm (Lpm) | 225 (851.7) | 225 (851.7) |
| Coolant System Capacity | gal (L) | 20.5 (77.6) | 20.5 (77.6) |
| Maximum Operating Ambient Temperature | °F (°C) | 122 (50) | 122 (50) |
| Maximum Operating Ambient Temperature (Before Derate) | | See Bulletin 1000011339 | |
| Maximum Radiator Backpressure | in $H_2O$ (kPa) | 0.5 (0.12) | 0.5 (0.12) |

### COMBUSTION AIR REQUIREMENTS

| | Standby | Prime |
|---|---|---|
| Flow at Rated Power scfm ($m^3$/min) | 942 (26.6) | 854 (24.1) |

### ENGINE

| | | Standby | Prime |
|---|---|---|---|
| Rated Engine Speed | RPM | 1,800 | 1,800 |
| Horsepower at Rated kW | hp | 670 | 603 |
| Piston Speed | ft/min (m/min) | 1,890 (576) | 1,890 (576) |
| BMEP | psi (kPa) | 207 (1,427) | 186 (1,282) |

### EXHAUST

| | | Standby | Prime |
|---|---|---|---|
| Exhaust Flow (Rated Output) | scfm ($m^3$/min) | 3,207 (90.8) | 2,712 (76.8) |
| Max. Backpressure (Post Silencer) | inHg (kPa) | 0.75 (2.54) | 0.75 (2.54) |
| Exhaust Temp (Rated Output – Post Silencer) | °F (°C) | 1,265 (685) | 1,255 (679) |

Deration – See Bulletin 10000011339
Standby – See Bulletin 10000018933
Prime – See Bulletin 10000018926

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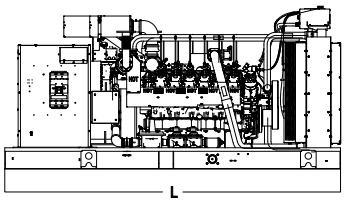
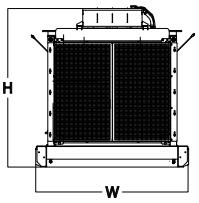
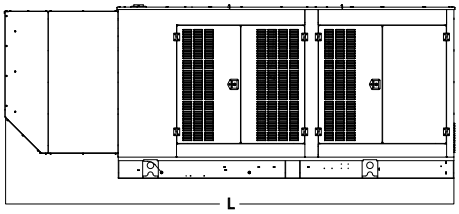
## DIMENSIONS AND WEIGHTS*

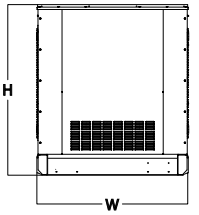



### OPEN SET (Includes Exhaust Flex)

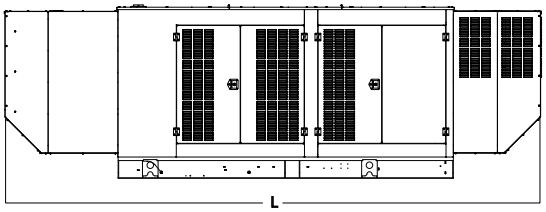
| | |
|---|---|
| L x W x H – in (mm) | 154.4 (3,923) x 71.0 (1,803) x 74.9 (1,903) |
| Weight – lbs (kg) | 9,386 (4,257) |

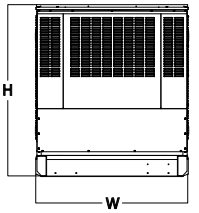



### WEATHER PROTECTED ENCLOSURE

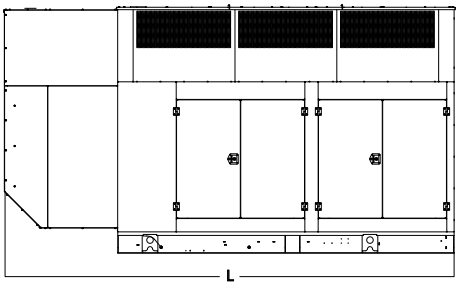
| | |
|---|---|
| L x W x H – in (mm) | 206.6 (5,455) x 70.9 (1,800) x 80.0 (2,032) |
| Weight – lbs (kg) | Steel: 11,576 (5,250)<br>Aluminum: 10,489 (4,757) |

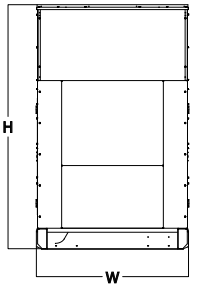



### LEVEL 1 ACOUSTIC ENCLOSURE

| | |
|---|---|
| L x W x H – in (mm) | 247.5 (6,287) x 70.9 (1,800) x 80.0 (2,032) |
| Weight – lbs (kg) | Steel: 12,583 (5,707)<br>Aluminum: 10,921 (4,953) |




### LEVEL 2 ACOUSTIC ENCLOSURE

| | |
|---|---|
| L x W x H – in (mm) | 207.4 (5,268) x 70.9 (1,800) x 114.1 (2,899) |
| Weight – lbs (kg) | Steel: 12,921 (5,680)<br>Aluminum: 11,066 (5,019) |

* Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please contact a PRAMAC Industrial Dealer for detailed installation drawings.



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