GGW400G | 21.9L | 400kVA INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division





Image used for illustration purposes only

Power Ratings			
GGW400	Standby	400 kVA/320 kW	
	Prime	360 kVA/288 kW	

Codes and Standards

PRAMAC products are designed to the following standards:



ENERGY GENERATION

PRAMAC ensures 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.

GGW400G | 21.9L | 400kVA INDUSTRIAL SPARK-IGNITED GENERATOR SET

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STANDARD FEATURES

ENGINE SYSTEM

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

Fuel System

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

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 Trav
- **Rubber-Booted Engine Electrical Connections**
- Solenoid Activated Starter Motor

ALTERNATOR SYSTEM

- GENprotect[™]
- **Class H Insulation Material**
- 2/3 Pitch ٠
- Skewed Stator
- Permanent Magnet Excitation .
- Sealed Bearing ٠
- 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
- 1 Year Limited Warranty or 1,000 Hours
- 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 H Control Panel—Dual 4x20 Display

Program Functions

- 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)
- ٠ Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns .
- Not in Auto (Flashing Light)

- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type) ٠
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events •
- Modbus[®] Protocol ٠
- Predictive Maintenance Algorithm •
- Sealed Boards ٠
- Password Parameter Adjustment Protection •
- Single Point Ground
- 16 Channel Remote Trending
- 0.2 msec High Speed Remote Trending ٠
- Alarm Information Automatically Annunciated on the Display

Full System Status Display

- Power Output (kW) ٠
- Power Factor
- kW Hours, Total, and Last Run •
- Real/Reactive/Apparent Power ٠
- 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
- Low Fuel Pressure Alarm

Alarms and Warnings

- Engine Overspeed
- Battery Voltage •

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· Alarms and Warnings Time and Date Stamped Snap Shots of Key Operation Parameters During

Alarms and Warnings Spelled Out (No Alarm Codes)

50 Hz SPEC SHEET

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GGW400G | 21.9L | 400kVA

INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

CONFIGURABLE OPTIONS

ENGINE SYSTEM

- Engine Coolant Heater with Ball Valves
- Air Filter Restriction Indicator
- Stone Guard (Open Set Only)
- Oil Heater
- Flexible Fuel Line

ELECTRICAL SYSTEM

- 10A Battery Charger
- Battery Warmer

ALTERNATOR SYSTEM

- Alternator Upsizing
- Anti-Condensation Heater
- Tropical Coating (231/400V Non-Upsized Only)

CIRCUIT BREAKER OPTIONS

- Main Line Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Electronic Trip Breaker

GENERATOR SET

- GenLink Communications Software (English Only)
- Extended Factory Testing (3 Phase Only)
- 12 Position Load Center

ENCLOSURE

- Weather Protected Enclosure
- Level 1 Sound Attenuation
- Level 2 Sound Attenuation
- O Level 2 Sound Attenuation with Motorized Dampers
- Steel Enclosure
- Aluminum Enclosure
- Up to 321 KMH Wind Load Rating*
- AC/DC Enclosure Lighting Kit
- Door Open Alarm Switch

CONTROL SYSTEM

- 21-Light Remote Annunciator
- Remote Relay Assembly (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

*Contact factory for availability.

ENGINEERED OPTIONS

ENGINE SYSTEM

- Fluid Containment Pan
- Low Fuel Pressure System (1.7-2.7 kPa / 7-11 in H₂0)

ALTERNATOR SYSTEM

○ 3rd Breaker System

CONTROL SYSTEM

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

GENERATOR SET

- Special Testing
- Battery Box

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GGW400G | **21.9L** | **400kVA** INDUSTRIAL SPARK-IGNITED GENERATOR SET

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APPLICATION AND ENGINEERING DATA



ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	12
Туре	V
Displacement – L (in ³)	21.9 (1,336.42)
Bore – mm (in)	128 (5.03)
Stroke – mm (in)	142 (5.6)
Compression Ratio	10.0:1
Intake Air Method	Turbocharged/Aftercooled
Number of Main Bearings	7
Connecting Rods	Steel Alloy
Cylinder Head	Cast Iron- OHV
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

Cooling System Type	Pressurized Closed Recovery
Fan Type	Pusher
Fan Speed – rpm	1,123
Fan Diameter – mm (in)	1,117 (44)
Fuel System	
Fuel Type	Natural Gas
Carburetor	Down Draft
Secondary Fuel Regulator	Standard
uel Shut Off Solenoid	Standard (Dual)
Dperating Fuel Pressure – kPa (in H ₂ O)	2.7-3.7 (11-15)
Dptional Operating Fuel Pressure – Pa (in H ₂ O)	1.7–2.7 (7–11)
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

Oil Pump Type	Gear
Oil Filter Type	Twin Full-Flow with Intercooler
Crankcase Capacity – L (qt)	30 (31.7)

ALTERNATOR SPECIFICATIONS

Standard Model	Generac 520 mm	Standard Excitation	Permanent Magnet
Poles	4	Bearings	Sealed Ball
Field Type	Revolving	Coupling	Direct via Flexible Disc
Insulation Class - Rotor	Н	Prototype Short Circuit Test	Yes
Insulation Class - Stator	Н	Voltage Regulator Type	Full Digital
Total Harmonic Distortion	<5%	Number of Sensed Phases	All
Telephone Interference Factor (TIF)	<50	Regulation Accuracy (Steady State)	±0.25%

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OPERATING DATA



POWER RATINGS – NATURAL GAS

	Standby	Prime
Three-Phase 231/400 VAC @0.8pf	400 kVA/320 kW Amps: 577	360 kVA/288 kW Amps: 520

STARTING CAPABILITIES (sKVA)

				Voltage 400 VAC	Dip		
Alternator	kW	10%	15%	20%	25%	30%	35%
Standard	400	323	484	646	807	968	1,130
Upsize 1	555	381	572	762	953	1,143	1,333
Upsize 2	642	393	589	786	983	1,178	1,375

FUEL CONSUMPTION RATES*

Natural Gas – m ³ /hr (ft ³ /hr)				
Percent Load	Standby	Prime		
25%	42.1 (1,485)	37.9 (1,337)		
50%	64.4 (2,276)	58.0 (2,048)		
75%	86.8 (3,066)	78.1 (2,759)		
100%	109.3 (3,858)	98.4 (3,472)		
* Fuel supply installation must acco	ommodate fuel consumption rates at	100% load.		

COOLING

	Standby	Prime
m ³ /min (ft ³ /min)	577 (20,360)	575 (20,290)
L/min (gal/min)	640 (169)	640 (169)
L (gal)	87 (23)	87 (23)
kW (BTU/hr)	323.0 (1,102,122)	323.0 (1,102,122)
°C (°F)	50 (122)	50 (122)
	See Bulletin 100000113	19
kPa (in H ₂ O)	0.12 (0.5)	0.12 (0.5)
	L/min (gal/min) L (gal) kW (BTU/hr) °C (°F)	m³/min (ft³/min) 577 (20,360) L/min (gal/min) 640 (169) L (gal) 87 (23) kW (BTU/hr) 323.0 (1,102,122) °C (°F) 50 (122) See Bulletin 100000113

COMBUSTION AIR REQUIREMENTS

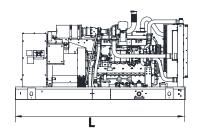
	Standby	Prime
Flow at Rated Power – m ³ /min (cfm)	15.9 (560)	14.3 (504)

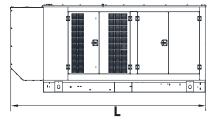
ENGINE				EXHAUST			
		Standby	Prime			Standby	Prime
Rated Engine Speed	rpm	1,500	1,500	Exhaust Flow (Rated Output)	m ³ /min (cfm)	79.8 (2,818)	75.3 (2,659)
Horsepower at Rated kW	hp	509	458	Max. Allowable Backpressure	kPa (inHg)	2.54 (0.75)	2.54 (0.75)
Piston Speed	m/min (ft/min)	512 (1,680)	512 (1,680)	Exhaust Temp (Rated Output - Post Silencer)	°C (°F)	553 (1,027)	496 (925)
BMEP	kPa (psi)	1,158 (168)	1,041 (151)				

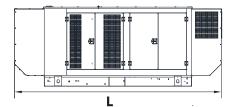
Deration – See Bulletin 10000011319 Standby – See Bulletin 10000018933 Prime – See Bulletin 10000018926 PRAMAC | Power Engineering Division

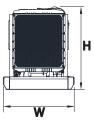
DIMENSIONS AND WEIGHTS*

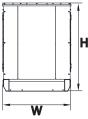












OPEN SET (Includes Exhaust Flex)

L x W x H – mm (in)	3,923 (154.4) x 1,803 (71) x 1,702 (67)
Weight – kg (lbs)	3,823 (8,429)

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LEVEL 1 ACOUSTIC ENCLOSURE

STANDARD ENCLOSURE

L x W x H – mm (in)

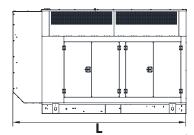
Weight - kg (lbs)

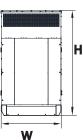
L x W x H – mm (in)	6,285 (247.5) x 1,803 (71) x 2,032 (80)
Weight – kg (lbs)	Steel: 5,085 (11,211) Aluminum: 4,409 (9,720)

5,268 (207.4) x 1,803 (71) x 2,032 (80)

Steel: 4,730 (10,428)

Aluminum: 4,217 (9,298)





LEVEL 2 ACOUSTIC ENCLOSURE

L x W x H – mm (in)	5,268 (207.4) x 1,803 (71. x 2,899 (114)
Weight – kg (lbs)	Steel: 5,333 (11,759) Aluminum: 4,513 (9,951)

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

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