GGW070 | 4.5L | 70 kW

INDUSTRIAL SPARK-IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

*Assembled in the USA using domestic and foreign parts

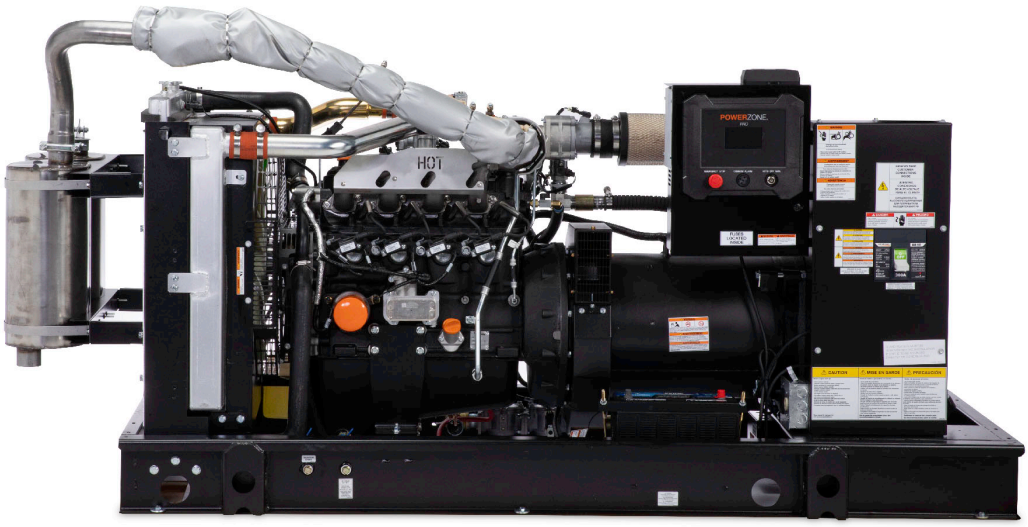

Image used for illustration purposes only

Power Ratings		
GGW070	Standby	70 kW/88 kVA
	Prime	63 kW/79 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 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.

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INDUSTRIAL SPARK-IGNITED GENERATOR SET

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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
- Factory Filled Oil and Coolant
- Critical Silencer
- Oil Temperature Sender with Alarm
- Air Filter Restriction Indicator

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

- GENprotect™
- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Brushless Excitation
- Sealed Bearing
- 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
- 2 Year Limited Warranty (Standby Rated Units)
- 1 Year Limited Warranty (Prime Rated Units)

ENCLOSURE (If Selected)

- Rust-Proof Fasteners with Nylon Washers to Protect Finish
- High Performance Sound-Absorbing Material (Sound Attenuated Enclosures)
- Gasketed Doors
- 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® Pro 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
- Wi-Fi®, Bluetooth®, BMS, and Remote Telemetry
- Built-In Programmable Logic Eliminates the Need for External Controllers Under Most Conditions
- Programmable I/O Channel Properties
- Built-In Diagnostics

Alarms and Warnings

- High/Low Oil Pressure
- High/Low Coolant Level
- High/Low Coolant Temperature
- Sender/Sensor Failure
- High/Low Oil Temperature
- Over Total kW
- Over/Under Speed
- Over/Under Voltage
- Over/Under Frequency
- Over Current
- High/Low Battery Voltage
- Battery Charger Current
- Phase to Phase and Phase to Neutral Short Circuits (I^2T Algorithm)

4.3 Inch Color Touch Screen Display

- Resistive Color Touch Screen
- 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

- ○ Heater with Shutoff Valves
- ○ Engine Coolant Heater
- ○ Oil Heater
- ○ Level 1 Fan and Belt Guards (Enclosed Units Only)
- ○ Radiator Duct Adapter (Open Set Only)
- ○ Two-Stage Heavy Duty Air Cleaner

ELECTRICAL SYSTEM

- ○ 10A Battery Charger
- ○ Battery Warmer

ALTERNATOR SYSTEM

- ○ Alternator Upsizing
- ○ Anti-Condensation Heater
- ○ Tropical Coating

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

FUEL SYSTEM

- ○ NPT Flexible Fuel Line

GENERATOR SET

- ○ Extended Factory Testing (3-Phase Only)
- ○ 8 Position Load Center
- ○ Spring or Pad Vibration Isolators

ENCLOSURE

- ○ Weather Protected Enclosure
- ○ Level 1 Sound Attenuated
- ○ Level 2 Sound Attenuated
- ○ Level 2 Sound Attenuated with Motorized Dampers
- ○ Steel Enclosure
- ○ Aluminum Enclosure
- ○ Up to 200 MPH Wind Load Rating (Contact Factory for Availability)
- ○ AC/DC Enclosure Lighting Kit
- ○ Enclosure Heaters (with Motorized Dampers Only)
- ○ Door Open Alarm Horn
- ○ IBC Seismic Certified
- ○ OSHPD Seismic Certified

CONTROL SYSTEM

- ○ 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
- ○ 120V GFCI and 240V Outlets
- ○ 100 dB Alarm Horn
- ○ Damper Alarm Contacts (with Motorized Dampers Only)
- ○ Wi-Fi Extension Kit

ENGINEERED OPTIONS

CONTROL SYSTEM

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

GENERATOR SET

- ○ Special Testing
- ○ Battery Box

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PRAMAC | Power Engineering Division

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in^3 (L)	275.0 (4.5)
Bore - in (mm)	4.5 (114.3)
Stroke - in (mm)	4.25 (107.95)
Compression Ratio	9.1:1
Intake Air Method	Turbocharged
Number of Main Bearings	5
Connecting Rods	Forged Steel, Fractured Split, Bushingless
Cylinder Head	Cast Iron
Cylinder Liners	Cast Iron
Ignition	Coil Near Plug Solid State Inductive
Piston Type	Cast Aluminum Flat Top
Crankshaft Type	Forged Steel
Lifter Type	Hydraulic
Intake Valve Material	Stainless Steel
Exhaust Valve Material	Stainless Steel
Hardened Valve Seats	High Steel Iron Alloy

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear Driving
Oil Filter Type	Full Flow Spin-On Cartridge
Crankcase Capacity - qt (L)	21 (20)

Cooling System

Cooling System Type	Pressurized Closed
Fan Type	Pusher
Fan Speed - RPM	1,750
Fan Diameter - in (mm)	22 (533)

Fuel System

Fuel Type	Natural Gas, Propane
Fuel Shut Off	Dual
NG Operating Fuel Pressure - in H_2O (kPa)	5 - 14 (1.2 - 3.5)
Propane Operating Fuel Pressure - in H_2O (kPa)	7 - 14 (1.7 - 3.5)

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	See Battery Index 10000016949
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	K0060124Y21
Poles	4
Field Type	Revolving
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5% (3-Phase Only)
Telephone Interference Factor (TIF)	<50

Standard Excitation	Synchronous Brushless
Bearings	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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INDUSTRIAL SPARK-IGNITED GENERATOR SET

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OPERATING DATA

POWER RATINGS

	Standby		Prime	
Single-Phase 120/240 VAC @1.0pf	70 kW/70 kVA	Amps: 292	63 kW/63 kVA	Amps: 263
Three-Phase 120/208 VAC @0.8pf	70 kW/88 kVA	Amps: 243	63 kW/79 kVA	Amps: 219
Three-Phase 120/240 VAC @0.8pf	70 kW/88 kVA	Amps: 211	63 kW/79 kVA	Amps: 190
Three-Phase 277/480 VAC @0.8pf	70 kW/88 kVA	Amps: 105	63 kW/79 kVA	Amps: 95
Three-Phase 346/600 VAC @0.8pf	70 kW/88 kVA	Amps: 84	63 kW/79 kVA	Amps: 76

MOTOR STARTING CAPABILITIES (skVA)

skVA vs. Voltage Dip

120/240 VAC 1Ø	30%	277/480 VAC 3Ø	30%	208/240 VAC 3Ø	30%
A0080124Y21	58	K0080124Y21	172	K0080124Y21	132
A0100124Y21	67	K0100124Y21	227	K0100124Y21	171

FUEL CONSUMPTION RATES*

Natural Gas – scfh (m^3/hr)

Percent Load	Standby	Prime
25%	261 (7.4)	240 (6.8)
50%	475 (13.5)	431 (12.2)
75%	697 (19.7)	630 (17.8)
100%	928 (26.3)	835 (23.6)

Propane Vapor – scfh (m^3/hr)

Percent Load	Standby	Prime
25%	80 (2.3)	69 (2.0)
50%	180 (5.1)	160 (4.5)
75%	270 (7.6)	245 (6.9)
100%	350 (9.9)	320 (9.1)

Propane Liquid – gph (Lph)

Percent Load	Standby	Prime
25%	2.5 (9.6)	2.3 (8.7)
50%	5.1 (19.1)	4.6 (17.4)
75%	7.6 (28.7)	6.9 (26.1)
100%	10.1 (38.3)	9.2 (34.8)

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

COOLING

		Standby	Prime
Air Flow (Fan Air Flow Across Radiator) - Open Set	cfm (m^3/min)	4,343 (123)	4,343 (123)
Coolant Flow	gpm (Lpm)	23.9 (90.5)	23.9 (90.5)
Coolant System Capacity	gal (L)	8.9 (33.7)	8.9 (33.7)
Maximum Operating Ambient Temperature	°F (°C)	120 (50)	120 (50)
Maximum Operating Ambient Temperature (Before Derate)		See Bulletin No. 10000011339	
Maximum Additional Radiator Backpressure	in H_2O (kPa)	0.5 (0.12)	0.5 (0.12)

COMBUSTION AIR REQUIREMENTS

	Standby	Prime
Flow at Rated Power - cfm (m^3/min)	157 (4.4)	142 (4.0)

ENGINE

		Standby	Prime
Rated Engine Speed	RPM	1,800	1,800
Horsepower at Rated kW	hp	113	102
Piston Speed	ft/min (m/min)	1,275 (389)	1,275 (389)
BMEP	psi (kPa)	188 (1,296)	170 (1,172)

EXHAUST

		Standby	Prime
Exhaust Flow (Rated Output)	cfm (m^3/min)	390 (11.0)	350 (9.9)
Maximum Allowable Exhaust Backpressure (Post Silencer)	inHg (kPa)	0.75 (2.54)	0.75 (2.54)
Exhaust Temperature (Rated Output)	°F (°C)	1,362 (739)	1,340 (727)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.
Please contact a Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528, and DIN6271 standards.
Standby - See Bulletin 0187500SSB
Prime - See Bulletin 0187510SSB

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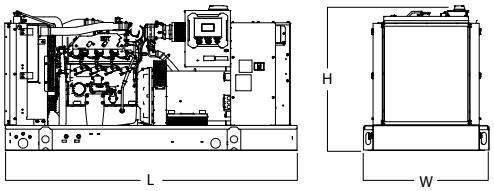
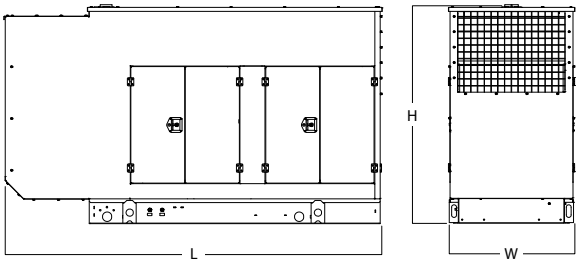
DIMENSIONS AND WEIGHTS*



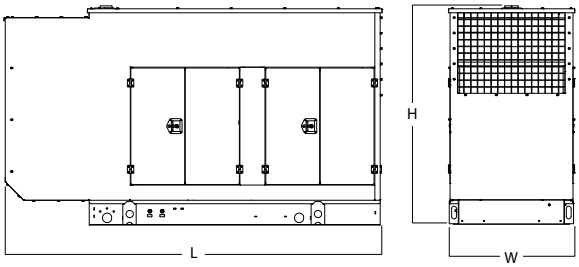
OPEN SET

L x W x H - in (mm)	92.9 (2,360) x 39.9 (1,014) x 46.0 (1,170)
Weight - lbs (kg)	1,967- 1,978 (982 - 897)



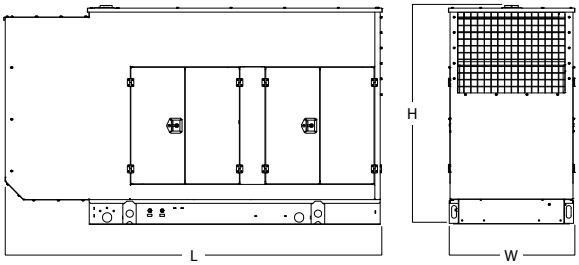
WEATHER PROTECTED ENCLOSURE

L x W x H - in (mm)	120.8 (3,068) x 40.5 (1,028) x 69.0 (1,754)
Weight - lbs (kg)	Steel: 2,705 - 2,717 (1,227 - 1,232) Aluminum: 2,353 - 2,365 (1,068 - 1,073)



LEVEL 1 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)
Weight - lbs (kg)	Steel: 2,796 - 2,808 (1,268 - 1,274) Aluminum: 2,444 - 2,456 (1,109 - 1,114)



LEVEL 2 SOUND ATTENUATED ENCLOSURE

L x W x H - in (mm)	94.8 (2,408) x 38.0 (965) x 57.5 (1,461)
Weight - lbs (kg)	Steel: 2,874 - 2,886 (1,304 - 1,309) Aluminum: 2,505 - 2,513 (1,135 - 1,140)

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

PR Industrial s.r.l. | Località Il Piano snc | 53031 Casole d'Elsa, Siena - Italy

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