



Image used for illustration purposes only

POWER RATINGS		
GGW200	STANDBY	200 kVA / 160 kW
	PRIME	180 kVA / 144 kW








**Designed to the following standards:** Ratings definition according to standard ISO8528 1:2005. Ambient conditions 1000mbar, 25°C, 30% relative humidity.

**ESP - Emergency Standby Power:** Maximum power with varying load that the generator is capable to supply in the event of a utility power outage or under routine exercise conditions for up to 200 h of operation per year with the maintenance intervals as prescribed by the manufacturer. Permissible average power over 24 h shall not exceed 70 % of rated power ESP.

**PRP - Prime Power:** Maximum power, which a generating set, is capable of delivering continuously with varying load for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals as prescribed by the manufacturer. The permissible average power output over 24 h of operation shall not exceed 70 % of rated Prime Power. 10% of overload is allowed for emergency use for a maximum of 1 hour in 12 with the limit of 25 hours per year.

**Codes And Standards**

PRAMAC products are designed to the following standards:

-  BS 5514 and 6271
-  SAE J1349
-  NFPA 37, 70, 99, 110
-  NEC 700, 701, 702, 708
-  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 on, 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 standby and prime power applications, as well as mobile and towable lighting for outdoor needs.

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

## STANDARD FEATURES

### ENGINE SYSTEM

- Oil Drain Extension
- Heavy Duty Air Cleaner
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory-Filled Oil And Coolant
- Industrial Exhaust Silencer
- Air Filter restriction indicator

### Fuel System

- Primary And Secondary Fuel Shutoff
- Fuel Line NPT Connection

### Cooling System

- Close 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
- Solenoid Activated Starter Motor

### ALTERNATOR SYSTEM

- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Auxiliary Winding Excitation System
- Sealed Bearing
- Amortisseur Winding
- Full-Load Capacity Alternator

### GENERATOR SET

- Internal Gen-set Vibration Isolation
- Wrapped Exhaust Piping (Enclosed Only)
- Bottom (floor) power cable outlet
- Exhaust silencer Mounted in the Discharge Hood (Enclosed Sets)

### ENCLOSURE (if selected)

- High-Performance Sound Absorbing Material
- Gasketed Doors
- Galvanized Sheet Metal Construction
- Upward Facing Discharge Hood (exhaust)
- Stainless Steel Hinges

## CONTROL SYSTEM



### PowerZone 7" touchscreen

#### Program Functions

- Programmable Crank Limiter
- 7-Day programmable Exerciser
- RS232/485 Communications
- LAN Communication
- 3-Phase Sensing Voltage Regulator
- 2-Wire Start Capability
- Date/Time Fault History (event Log)
- Isochronous Governor Control
- Audible Alarms and Shutdown
- AMF Capability
- E-Stop Button (Mushroom)

- Customizable Alarms, Warnings, Events
- Modbus Protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- Password Parameter Adjustment Protection
- Single Point Ground
- Alarm Information Automatically Announced on the Touchscreen Display

#### Full System Status Display

- Power Output (kW)
- Power Factor Cos( $\phi$ )
- kWh Total and Last Run
- Active/Reactive/Apparent Power
- 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
- Engine Over-speed
- Battery Voltage
- Alarms and Warnings Times and Date Stamped
- Snap Shot of key Operation Parameters During Alarms and Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)
- Multilingual

## OPTIONAL FEATURES

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### ENGINE SYSTEM

- Engine Block Heater (convection type)
- Engine Block Heater (forced circulation)
- 3-Way Catalytic Muffler

### ALTERNATOR SYSTEM

- Upsized Alternator
- Anti-Condensation Heaters
- Permanent Magnet (PMG)

### CIRCUIT BREAKER OPTIONS

- 4-pole Circuit Breaker
- Shunt Trip and Auxiliary Contact
- Differential Protection

### ELECTRICAL SYSTEM

- 10A UL/CE Float Battery Charger

### GENERATOR SET

- Leak Proof Tray

### CONTROL SYSTEM

- Remote Connection Kit with Antenna
- Modular Parallel Panel with MCCB upgrade

### ENCLOSURE

- Special Color Requirements

## ENGINEERED OPTIONS

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### ENGINE SYSTEM

- Engine Battery Warmer
- Heavy-Duty Air Filters
- Synthetic Media Oil Filters

### ELECTRICAL SYSTEM

- ATS With Transfer Inhibition
- Load Shedding control
- 20 Amp Battery Charger

### ALTERNATOR SYSTEM

- 2 Size Up Alternator
- Tropical Coating
- Thermistors Temperature Sensors
- Thermocouple PT-100 Temperature Sensors

### CIRCUIT BREAKER OPTIONS

- Special Bus-bars Connections

### GENERATOR SET

- Spring vibration Isolators
- Extended Containment Tray With Leak Detector

### ENCLOSURE

- Motorized Louvers
- Sand Traps on Intake Vents
- Non-Standard Sheet Metal
- Containerized Option
- Special Sound Requirements

### CONTROL SYSTEM

- Special Firmware Programming
- Non-Standard Language
- Communication Programming



**APPLICATION ENGINEERING DATA**

**ENGINE SPECIFICATIONS**

**General**

Make..... GENERAC  
 Cylinder # ..... 6  
 Type ..... in-line  
 Displacement [L]..... 14.2  
 Bore [mm]..... 135  
 Stroke [mm]..... 165  
 Compression Ratio..... 9:5:1  
 Intake Method..... Turbocharged/Aftercooled  
 N. of Bearings..... 7  
 Connecting Rods..... Carbon Steel  
 Cylinder Head..... Cast Iron GT250, OHV  
 Cylinder Liners ..... Ductile Iron  
 Ignition..... Electronic  
 Piston Type ..... Aluminum  
 Crankshaft Type ..... Ductile iron  
 Lifter Type ..... Solid  
 Intake Valve Material..... Special High-Resistant Steel  
 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..... Gear  
 Oil Filter Type ..... Full Flow Spin-On Cartridge  
 Crankcase Capacity [L] ..... 34.3

**Cooling System**

Cooling System Type ..... Pressurized Closed Recovery  
 Fan Type ..... Pusher  
 Fan Diameter [mm]..... 762

**Fuel System**

Fuel Type ..... Natural Gas  
 Carburetor ..... Down Draft  
 Secondary Fuel Regulator..... Standard  
 Fuel Shutoff Solenoid ..... Standard (Dual)  
 Operating Fuel Pressure [kPa] ..... 1,7-2,7

**Engine Electrical System**

System Voltage ..... 24V DC  
 Battery Charger Alternator..... Standard  
 Battery Size ..... See Bulletin  
 Battery Voltage ..... 2 x 12 VDC  
 Ground Polarity ..... Negative

**ALTERNATOR SPECIFICATIONS**

Standard Model ..... MeccAlte  
 Poles ..... 4  
 Field type..... Revolving  
 Insulation Class (Rotor)..... H  
 Insulation Class (Stator) ..... H  
 Total Harmonic Distortion (THD) ..... <5%  
 Telephone Interference Factor (TIF) ..... <50

Standard Excitation ..... Auxiliary Winding  
 Bearings ..... Single Bearing  
 Coupling ..... Direct via Flexible Disc  
 Sustained Short Circuit Current..... 300% (10s)  
 Number of Sensed Phases..... All  
 Regulation Accuracy..... ±1%



## OPERATING DATA

### POWER RATINGS

	Standby	Prime
Three Phase 400 / 231 V AC @ PF=0,8	200kVA / 160kW Amps:288	180kVA / 144kW Amps: 259

### STARTING CAPABILITIES (SKVA)

#### sKVA vs. Voltage Dip

Alternator	kVA	400 / 231 V AC						380 / 220 V AC					
		10%	15%	20%	25%	30%	35%	10%	15%	20%	25%	30%	35%
Standard	200	117	176	243	310	436	562	100	155	214	293	385	510
Upsized 1	225	134	200	272	360	490	604	117	175	250	335	440	587

### TRANSIENT PERFORMANCES

Performance Class (ISO8528-5) *	Class	G2
Rated Power	kW	160
First Step (ISO8528-, based on BMEP)	%	77.7
Second Step (ISO8528-, based on BMEP)	%	100

\* ISO 8528-5:2013 states G2 Performance class transient frequency deviation from rated frequency for a sudden power increase should be  $\leq -20\%$  of rated frequency for spark-ignition gas engines per Table 4 note e).

### FUEL CONSUMPTION RATES\* ELECTRICAL EFFICIENCY\*\*

Natural Gas – in accordance with ISO 3046			Calculated Values	
Percent Loads(ESP)	Kg/h	Nm <sup>3</sup> /h	Percent Loads (ESP)	Efficiency Values
50%	24.2	31.4	50%	25.2%
75%	31.8	40.4	75%	29.3%
100%	37.8	48.9	100%	32.3%

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

\*\* Minimum Heat Value LHV=13.1 kWh/Kg

### COOLING

		Standby	Prime
Air Flow (Combustion and Cooling)	m <sup>3</sup> /min	448.7	448.4
Coolant Flow	l/min	333	333
Coolant System Capacity	L	39.7	39.7
Heat Rejection To Coolant	kW	203	163
Maximum Operating Ambient Temperature	°C	50	50
Maximum Operating Ambient Temperature (before Derate)		See Bulletin	
Maximum Radiator Backpressure	kPa	0.12	0.12

### COMBUSTION AIR REQUIREMENT

	Standby	Prime
Flow at Rated Power – m <sup>3</sup> /min	9.5	8.9

**EXHAUST EMISSIONS** – Version with factory-fitted 3-Way Exhaust Catalyst (Optional)

		NOx	CO	CH <sub>2</sub> O
5% O <sub>2</sub> Concentration	mg/Nm <sup>3</sup>	< 75	< 75	< 20
15% O <sub>2</sub> Concentration	mg/Nm <sup>3</sup>	< 30	< 25	< 15

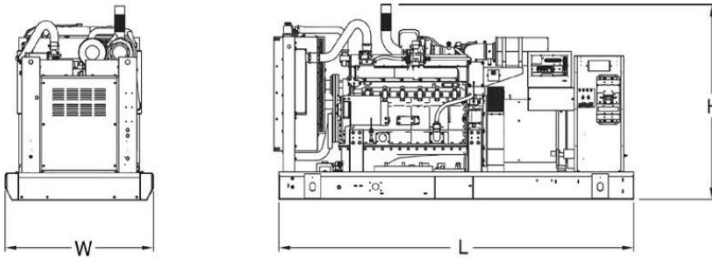
**ENGINE**

		Standby
Rated Engine Speed	rpm	1500
Horsepower at rated rpm	bHp	243
Piston Speed	m/s	450
BMEP	kPa	1,029.86

**EXHAUST**

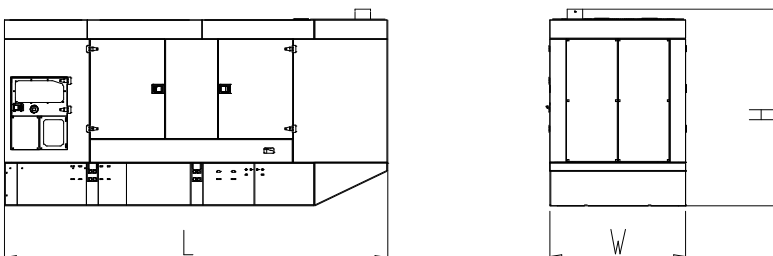
		Standby	Prime
Exhaust Flow	m <sup>3</sup> /min	65	58.5
Max. Backpressure	kPa	2.54	2.54
Exhaust Temp.	°C	689	633

**OPERATING DATA**



**OPEN SET (Includes Exhaust Flex)**

L x W x H - mm	3540 x 1500 x 1870
Weight - Kg	2800



**STANDARD ENCLOSURE**

L x W x H - mm	4400 x 1540 x 2240
Weight - Kg	3500