

GGW250MA | E2676 LE202 | 200kW COP

INDUSTRIAL SPARK IGNITED GENERATOR SET

PRAMAC | Power Engineering Division

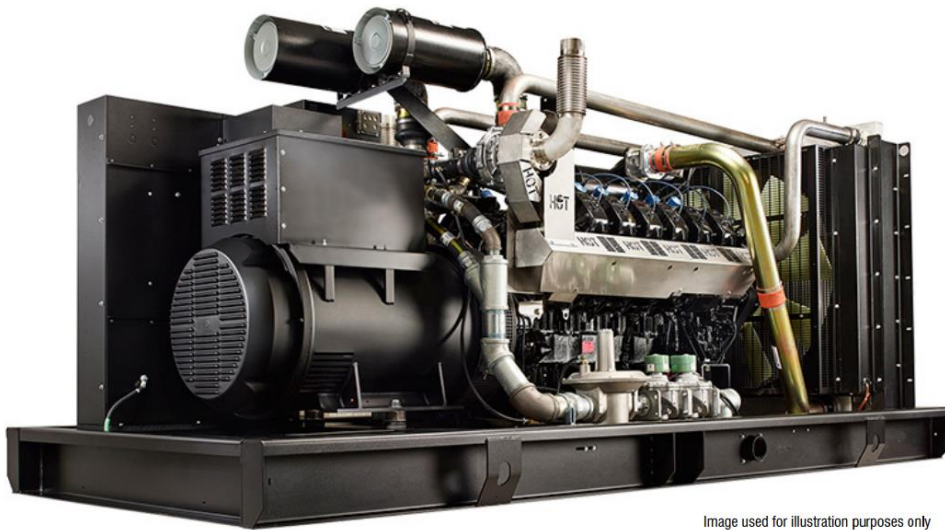


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POWER RATINGS		
GGW250MA	CONTINUOUS	250 kVA / 200 kW

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.

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STANDARD FEATURES

ENGINE SYSTEM

- Oil drain extraction pump
- Heavy Duty Air Cleaner
- Air Filter restriction indicator
- Engine mounted Varifuel Mixer
- Ignition System MOTORTECH
- Stainless Steel Flexible Exhaust Connection
- Factory-Filled Oil And Coolant
- Industrial Exhaust Silencer

Fuel System

- Primary And Secondary Fuel Shutoff
- Fuel Line Flanged Connection

Cooling System

- Close Coolant Recovery System
- UV/Ozone resistant hoses
- Factory Installed Radiator
- Electric Cooling fan
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

Electrical System

- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- 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 Genset 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



ALL-IN-ONE Control System

Program Functions

- Programmable Crank Limiter
- RS232/485 Communications
- LAN communication
- 3-Phase sensing Voltage Regulator
- 2-Wire start Capability
- Date/Time Fault History (event Log)
- Isochronous Governor Control
- Standalone or Genset-Parallel
- Audible Alarms and shutdown
- Auto On/Off Manual Switch

- Customizable Alarms, Warnings, Events
- Modbus protocol
- Password Parameter Adjustment Protection
- Single Point Ground
- Alarm Information Automatically Announced on the touchscreen display
- Gas train control
- Combustion control
- Detonation control

Full System Status Display

- Power Output (kW)
- Power Factor Cos(ϕ)
- kWh total and last run
- Active/Reactive/Apparent Power
- All Phase AC voltage
- All Phase Currents
- Oil Pressure

- 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

PRELIMINARY

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OPTIONAL FEATURES

ENGINE SYSTEM

- Engine Block heater (forced circulation)
- Lube-Oil make-up system with tank

ALTERNATOR SYSTEM

- Upsized Alternator
- Anti-Condensation Heaters
- Permanent Magnet (PMG)
- Thermistors on alternator's windings
- Temperature Sensors (PT100) on alternators windings
- Double bearing alternator with flexible joint upgrade

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 MCB upgrade in lieu of standard thermal magnetic breaker

ENCLOSURE

- Special Color Requirements

ENGINEERED OPTIONS

ENGINE SYSTEM

- Engine Battery Warmer
- Heavy-Duty air filters

ELECTRICAL SYSTEM

- ATS with transfer inhibition
- Load Shedding control
- 20 Amp Battery charger

ALTERNATOR SYSTEM

- Class F temperature rise sizing
- Tropical Coating

CIRCUIT BREAKER OPTIONS

- Special Bus-bars Connections

GENERATOR SET

- Spring vibration isolators
- Extended containment tray with leak detector

CONTROL SYSTEM

- Special firmware programming
- Non-Standard language
- Communication programming

ENCLOSURE

- Motorized louvers
- Sand traps on intake vents
- Non-Standard sheet metal
- Containerized option
- Special sound requirements

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APPLICATION ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make..... MAN E2676 LE202
Cylinder # 6
Type L
Displacement [L]..... 12.4
Bore [mm]..... 126
Stroke [mm] 166
Compression Ratio..... 12:1
Intake Method..... Turbocharged/After-cooled
Connecting Rods..... Steel Alloy
Cylinder Head..... Cast Iron OHV
Cylinder Liners Cast Iron Alloy
Ignition..... Electric
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)..... $\pm 0,25\%$

Lubrication System

Oil Pump..... Gear
Oil Filter Type Twin Full Flow
Crankcase Capacity [L] 70

Cooling System

Cooling System Type Pressurized Closed Recovery
Fan Type Pusher
Fan drive Electric motors

Fuel System

Fuel Type Natural Gas
Carburetor Motortech VARIFUEL
Secondary Fuel Regulator..... Standard
Fuel Shutoff Solenoid Standard (Dual)
Operating Fuel Pressure [kPa] 4-7

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% (20s)
Number of Sensed Phases..... All
Regulation Accuracy..... $\pm 1\%$

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OPERATING DATA

POWER RATINGS

Continuous (Baseload)	
Three Phase 400 / 231 V AC @ PF=0,8	250kVA / 200kW Amps: 360

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	300	168	210	352	478	637	839	109	151	227	436	923	579

FUEL CONSUMPTION RATES*

Percent Loads	Kg/h
50%	22
75%	33
100%	41

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

COOLING

Air Flow (Combustion and Cooling)	m ³ /min	452
Coolant Flow	l/min	330
Coolant System Capacity	L	50
Heat Rejection To Coolant	kW	113
Maximum Operating Ambient Temperature	°C	40

COMBSUTION AIR REQUIREMENT

Flow at Rated Power – Kg/h	1106
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ENGINE

Rated Engine Speed	rpm	1500
Horsepower at rated rpm	bHp	295
Piston Speed	m/s	8.3
BMEP	MPa	14.2

EXHAUST

Exhaust Flow	M ³ /min	15.8
Max. Backpressure	Mbar	40
Exhaust Temp.	°C	445

PRELIMINARY

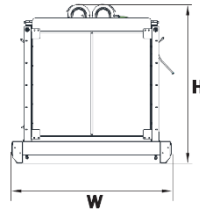
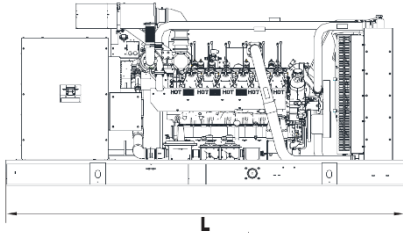
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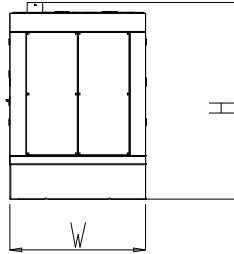
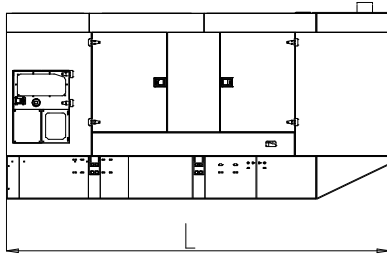


OPERATING DATA



OPEN SET (Includes Exhaust Flex)

L x W x H - mm	TBD
Weight - Kg	TBD



STANDARD ENCLOSURE

L x W x H - mm	5600 x 1950 x 2575
Weight - Kg	6000