

SOLID STATE MICROWAVE GENERATOR

1 000 W at 2450 MHz - Frequency Adjustable

Ref. GMS1000

MK106EN-D

SAIREM's GMS1000 solid state generator provides continuous wave (CW) output power adjustable **from 0 to 1 000 W** at 2450 MHz. A minimal power of 900 W is guaranteed over the whole frequency range between 2400 and 2500 MHz.

Pinpoint Power and Frequency control:

- Flexibility for your process
- Possibility to use a resonant cavity design

This generator is designed for **scientific and industrial applications**, use with monomode or multimode MW applicators.

Protection against reflected power up to 100 % all time, and measurement of reflected power via a built-in isolator.

MAIN APPLICATIONS

LABORATORY APPLICATIONS

- Microwave-assisted liquid or solid chemistry
- Biochemistry
- Drying
- Sintering
- Melting
- Etc...

PLASMA APPLICATIONS

- Plasma generation with surface wave plasma source (Downstream, Surfaguide ...)



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KEY BENEFITS

DESIGN

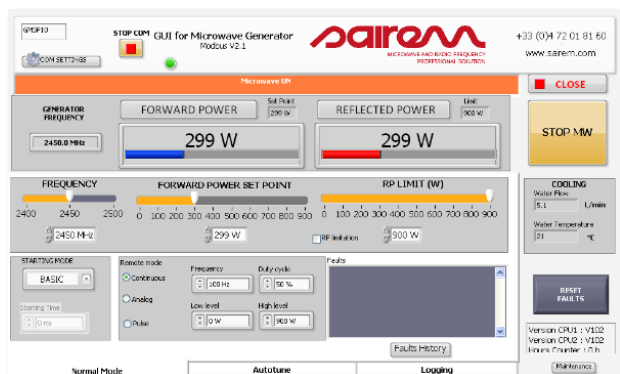
- **Power combiner** technology
- One compact and lightweight module
- Microwave energy **transmitted via waveguide**
- **Power adjustable** by 1 W step
- **Frequency adjustable** by 100 kHz step to optimize power transfer

TECHNOLOGY

- **Semiconductor technology:** no magnetron and therefore longer lifetime & no high voltage
- Excellent frequency spectrum even at low power
- **Built-in internal protection** against mismatching and reflected power in any phase
- **Built-in isolator** with automatic power reduction or switch off
- **True RMS detector** with linear measurement of reflected and forward power
- Very low ripple < 1 % RMS
- Manual or **automatic microwave frequency adjustment**
- **SAIREM Auto-tune algorithm** (automatic load-tuning): controls the frequency automatically in order to minimize reflected power¹



CONTROLS



- **LabVIEW™** software provided (no license requested) for all operating parameters and control status
- Alarm information, forward power and reflected power readings

¹ Patent WO/2012/146870



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KEY SPECIFICATIONS

Reference	• GMS1000SM56MPFCXMS3IRVFAIT				
Technology	• Patented power combiner technology²				
Frequency	• 2450 MHz central frequency, adjustable in full 2.4–2.5 GHz ISM band	• 100 kHz step increments between 2400 and 2500 MHz			
Power output	• 2 operating modes: <ul style="list-style-type: none">○ 0 to 1000 W - Fixed frequency at 2450 MHz○ 0 to 900 W - Adjustable frequency between 2400 and 2500 MHz				
Power measurement	• Precision $\pm 4\%$ at 2450 MHz, thermal stability $\pm 2\%$				
Ripple	• Forward and reflected: internal coupler with true RMS detector – linear measurement	• Analog output for forward and reflected power (0 to 10 V)			
Reflected power (RP)	• $< 1\%$ RMS				
Protection	• 100 % RP accepted all time without any restriction	• Set point for forward limitation or stop mode adjustable from 10W to 900W	• Automatic frequency adjustment to reach minimum reflected power (to set automatically the exact resonant frequency of MW applicator)		
Microwave output	• VSWR (WG isolator)	• Sensors: air temperature, dew point conditions, , water temperature, water flow	• DFM and ARC input	• Interlock to ensure safety standard for machines and personnel	
Controls	• WR340 waveguide rectangular flange	• Modbus RS232 or Ethernet or Profibus	• Delivered with LabVIEW™ based HMI to control by a PC	• Adjustable with 1 W step	• Analog input available (0 to 10 V - 0 to 1000 W)
Mains	• 1 phase - 208V to 240VAC - 2500 W max - 50/60 Hz - C20 appliance inlet				
Cooling & operation requirements	• Operating temperature: 15 to 40 °C (41 to 113 °F)	• Cooling tubes: quick coupling, 10/8 calibrated tubes	• Cooling water flow: 4 l/min (0,26 gal/min) minimum	• Cooling water temperature: 16 to 25 °C (63 to 77 °F)	
Weight	• 25.0 kg				
Conformity	• EN 61326-1 (EMC), EN 61010-1 (safety), CE Marked				

² Patent pending FR 1854315



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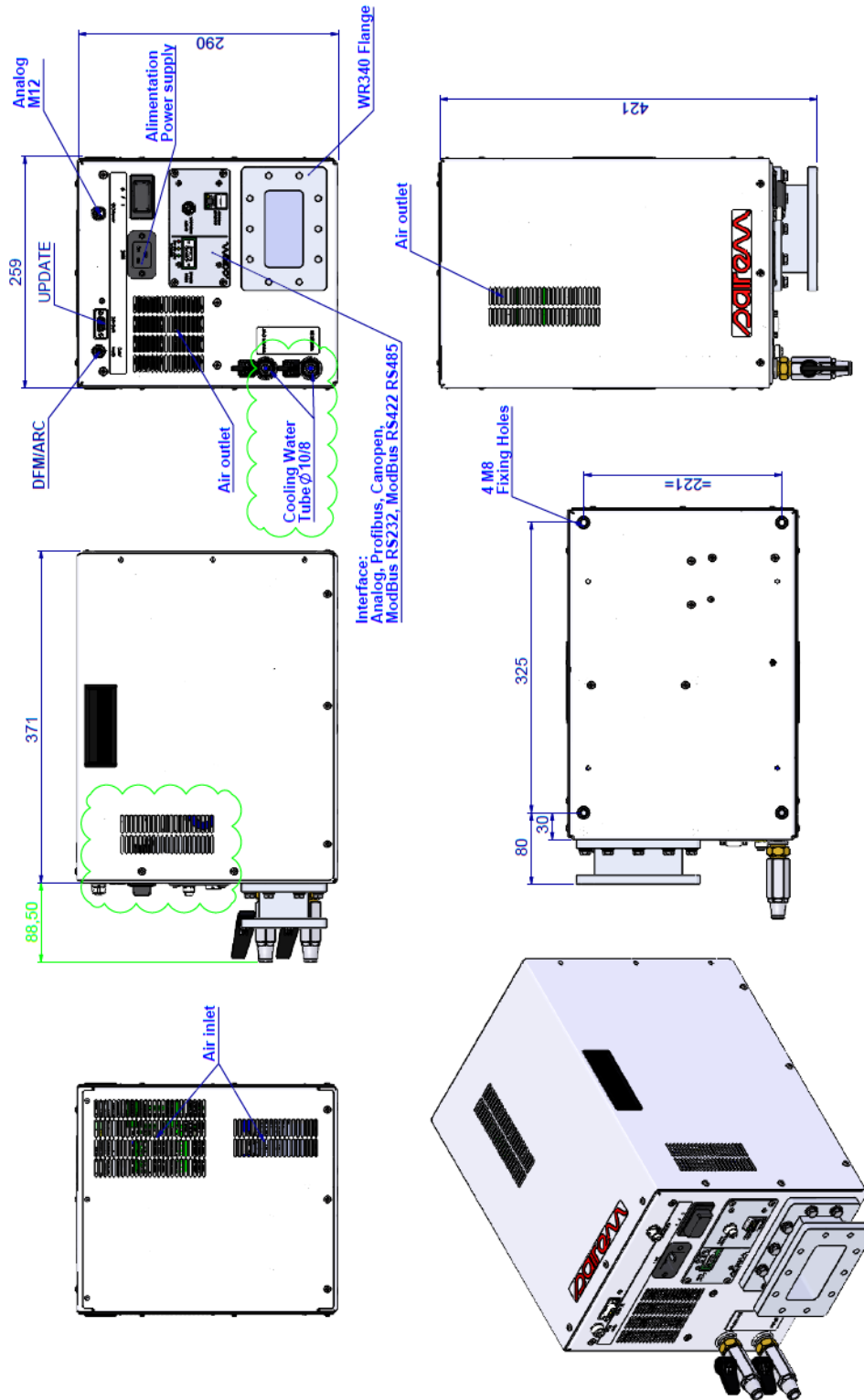
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MAIN DIMENSIONS



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