

# Reactive Process Gas Monitoring System [Qulee RGM-202/RGM-302]

This process monitoring system has been developed for various kinds of applications such as etch, CVD and other reactive gas processes. Using ULVAC's original ion source and pumping system enables you to achieve stable measurements results.



## Features

- ▶ **Most Appropriate for Etching/CVD Apparatus**  
Long term stable measurements results
- ▶ **Closed Ion Source Utilizing a Magnetic Field**  
Soft ionization provides less gas dissociation and higher sensitivity. Decomposition and adsorption due to thermal reactions are minimized in the ionization chamber.
- ▶ **Compact Conductance Valve with 3 Different Gas Inlet Modes**  
Short distance between the process chamber and ion source allows quick-response of analysis.
- ▶ **Suitable for Process Monitoring**  
Wide pressure range from  $1 \times 10^{-6}$  to 13kPa ( $7.5 \times 10^{-9}$  to 97.5 Torr,  $1 \times 10^{-3}$  to 130mbar) is available. (Choice of orifices)
- ▶ **Integrated Display**  
No need for PC
- ▶ **Simple Operation**  
"One Click" function
- ▶ **Bake Out**  
Max 120°C (248°F) High temperature bake
- ▶ **Degas Function**  
Electron bombard degas

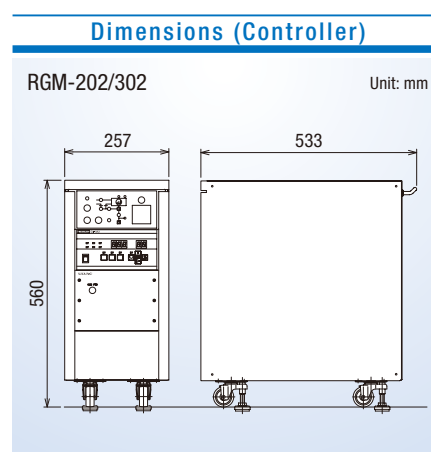
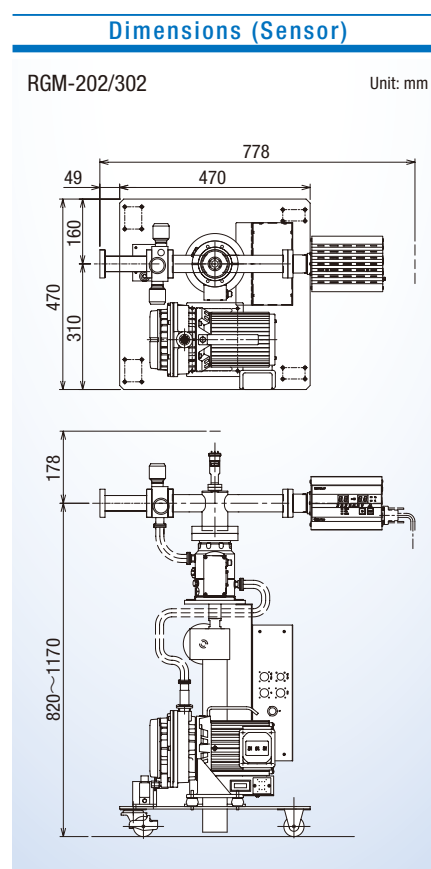
- ▶ **Protection and Maintenance Features**  
Protection and maintenance of ion source and secondary electron multiplier  
Traceability of analysis tube (patent pending)
- ▶ **Various Leak Tests are Available**  
Helium leak test, air leak test, leak up
- ▶ **Total Pressure Measurement**  
Capable of total pressure measurement (External ionization gauge GI-M2)
- ▶ **Qulee QCS is Included**  
This software is included and compatible with (Windows XP/7)

## Applications

- ▶ For etching and CVD process
- ▶ Monitoring reactive gases during process
- ▶ End-point monitoring for etching and cleaning processes
- ▶ Residual gas analyzing
- ▶ Leak testing

# Reactive Process Gas Monitoring System [Qulee RGM-202/RGM-302]

Specifications		
Model	RGM-202	RGM-302
<b>Sensor</b>		
Mass filter type	Quadrupole	
Mass range	1 to 200 amu	1 to 300 amu
Resolution	M/ΔM=1M (10%P.H.)	
Detector type	SEM/Faraday cup	
Sensitivity	1×10 <sup>-3</sup> A/Pa	
	1.33×10 <sup>-1</sup> A/Torr	
	0.1A/mbar	
Minimum detectable partial pressure (inside analyzer tube)	1×10 <sup>-10</sup> Pa	
	7.5×10 <sup>-13</sup> Torr	
	1×10 <sup>-12</sup> mbar	
Ion source	Closed ion source utilizing a magnetic field	
Filament	Ir/Y <sub>2</sub> O <sub>3</sub> coated V type, 1pc	
Ionization voltage	20 to 70 eV	
Emission current	10 μA	
DC amplification range	1×10 <sup>-5</sup> to 1×10 <sup>-12</sup> A	
Maximum bakeout operating temperature	120°C (248°F)	
<b>Differential pumping system</b>		
Gas inlet valve	Conductance valve with 3 different gas inlet modes (VPC-070)	
Max. sampling pressure	13kPa	
	97.5Torr	
	130mbar	
Differential pumping system	With intermediate port and gas purge port	
Turbo molecular pump	67L/s: N <sub>2</sub>	
Fore pump	DIS090	
Pirani vacuum gauge	SW1-1	
Ionization vacuum gauge	GI-M2	
Weight	Pumping system: 57 kg / Controller: 38 kg	
<b>Utility</b>		
Power supply	AC100V 15A	
Compressed air	Dry N <sub>2</sub> : 0.4 to 0.7MPa (φ6 one-touch joint)	
	Dry N <sub>2</sub> : 3×10 <sup>-3</sup> to 5.25×10 <sup>-3</sup> Torr (φ6 one-touch joint)	
	Dry N <sub>2</sub> : 4 to 7mbar (φ6 one-touch joint)	
<b>Control unit</b>		
"One Click" function	Capable /He/H <sub>2</sub> O/N <sub>2</sub> /O <sub>2</sub> /Any gas	
Serial communication type	RS232C/RS485	
External I/O and other	Analog input×2 (0 to 10V)	
	Set-point output×2 (fault, alarm)	
	External interlock	
<b>Others</b>		
Baking heater	Tape heater	
Stand	Standard	
Sensor unit (Control box cable)	5m	
Software	Qulee QCS Ver.3.0 later (Windows XP/7)	
Option	PC	



ULVAC, Inc. Components Division

[www.ulvac.co.jp/eng](http://www.ulvac.co.jp/eng)

Overseas Sales in Japan TEL +81-467-89-2261

USA : ULVAC Technologies, Inc. TEL +1-978-686-7550  
 GERMANY : ULVAC GmbH TEL +49-89-960909-0  
 CHINA : ULVAC (SHANGHAI) Trading Co.,Ltd. TEL +86-21-6127-6618  
 TAIWAN : ULVAC TAIWAN, Inc. TEL +886-3-579-5688  
 KOREA : ULVAC KOREA, Ltd. TEL +82-31-683-2922  
 SINGAPORE : ULVAC SINGAPORE PTE LTD TEL +65-6542-2700

PHILIPPINES : ULVAC Singapore Philippines Branch  
 VIETNAM : ULVAC Singapore Vietnam Representative Office  
 THAILAND : ULVAC (THAILAND) LTD  
 MALAYSIA : ULVAC MALAYSIA SDN. BHD.  
 INDIA : ULVAC, Inc., India Branch

TEL +63-2-828-7700  
 TEL +84-8-62556762  
 TEL +66-2-312-4447  
 TEL +60-3-5121-4700  
 TEL +91-40-27007006

▶ This catalog is subject to change without notice.  
 ▶ This catalog is published in order to sell this product in overseas. Please see Japanese catalog when purchasing in Japan.