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Data Sheet

August 13, 2026

STANFORD RESEARCH SYSTEMS

Stanford Research RGA100

Stanford Research Systems RGA100 Residual Gas Analyzer The SRS RGA100 is the 100 amu residual gas analyzer for high-vacuum gas analysis. Each system includes a quadrupole probe (ionizer, mass filter, detector), electronics control unit, and Windows software. A Faraday cup covers about $1\text{e-}5$ to $5\text{e-}11$ Torr partial pressure; an optional continuous-dynode electron multiplier extends the detection limit to $5\text{e-}14$ Torr. The probe mounts on a 2.75 inch CF flange and needs about 2.0 inches of insertion clearance. Dual thoriated-iridium filaments are field-replaceable. The SRS RGA100 is the 100 amu residual gas analyzer for high-vacuum gas analysis. Each system includes a quadrupole probe (ionizer, mass filter, detector), electronics control unit, and Windows software. A Faraday cup covers about $1\text{e-}5$ to $5\text{e-}11$ Torr partial pressure; an optional continuous-dynode electron multiplier extends the detection limit to $5\text{e-}14$ Torr. The probe mounts on a 2.75 inch CF flange and needs about 2.0 inches of insertion clearance. Dual thoriated-iridium filaments are field-replaceable. UHV residual-gas analysis; leak detection; vacuum-process monitoring; chamber qualification; multi-head RGA installations; NASA-class ammonia leak location (ISS RELL program used SRS RGA hardware).



MODEL Stanford Research Systems RGA100	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU RGA100	LISTING https://aumictechlabs.com/products/rga100-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Stanford Research Systems RGA100 is a residual gas analyzer for real-time vacuum chamber composition monitoring and analysis. It identifies leaks, contaminants, and process-related gases

across a 1–100 amu mass range with sub-amu resolution and detection limits as low as 5×10^{-14} Torr (with electron multiplier). The instrument captures six orders of magnitude dynamic range in a single scan, enabling simultaneous measurement of trace and bulk gas species. A temperature-compensated logarithmic electrometer detects ion currents from 10^{-15} to 10^{-7} amps with better than 2% precision. The dual thoriated-iridium filament is user-replaceable and includes firmware-driven overpressure protection. Faraday cup and optional electron multiplier detectors accommodate both standard and ultrahigh-sensitivity applications. RS-232 and optional Ethernet interfaces support integration into automated vacuum control systems.

Technical Specifications

Mass range: 1–100 amu Resolution: Better than 1 amu; better than 0.5 amu at 10% peak height (AVS std. 2.3); adjustable constant peak width across mass range Detection limit (Faraday cup): 5×10^{-11} Torr Detection limit (electron multiplier, optional): 5×10^{-14} Torr Dynamic range: Six orders of magnitude per scan; ion current detection from 10^{-15} to 10^{-7} amps at better than 2% precision Sensitivity (Faraday cup): 2×10^{-4} A/Torr (N_2 at 28 amu, 70 eV electron energy, 12 eV ion energy, 1 mA emission current) Sensitivity (electron multiplier): <200 A/Torr (user adjustable) Ionizer: Open ion source with cylindrical symmetry; electron impact ionization; built-in degassing via electron impact desorption Power supply: External +24 VDC at 2.5 A via DB9 connector; optional AC module (110/120/220/240 VAC) Probe flange: Standard 2.75" ConFlat (CF) Probe length: 8.75" from flange face; requires 2.5" internal clearance Minimum tube ID: 1.375" ECU dimensions: 3.1" $\times$ 4.1" $\times$ 9.1" (separable for high-temperature bakeout) Weight: 6 lbs

Key Features

- Dual thoriated-iridium filament with field-replaceable design
- Firmware-driven filament protection with overpressure shutdown
- Stainless steel probe with self-aligning components for rapid reassembly
- Optional electron multiplier for trace-level analysis
- Logarithmic electrometer for single-scan dynamic range capture

Interfaces & Integration

- Standard RS-232 with high-level command set for program integration
- Optional Ethernet connectivity
- Detachable electronics control unit for independent vacuum system operation

Features & description

From manufacturer datasheet

Features

- 1 to 100 amu quadrupole (RGA200 200 amu; RGA300 300 amu) • 6 orders of magnitude dynamic range in a single logarithmic electrometer scan ($1\text{e-}7$ to $1\text{e-}15$ A, better than 2 % precision) • Built-in degas (1 to 10 W ramp) and 675 Hz over-pressure filament protection • RS-232C 28800 baud; optional Ethernet adapter and PPM100 stand-alone monitor • ECU removes for 300 C bakeout • Optional O100HJRW heater jacket at 210 C $\pm$ 3 C

RGA100 Characteristics / Specifications

PARAMETER	VALUE
Model	RGA100
Manufacturer	Stanford Research Systems
Instrument Type	Residual Gas Analyzer
Series	RGA100/RGA200/RGA300
Alias	RGA100; SRS RGA100
Mass Range	1 to 100 amu
Mass Filter Type	quadrupole
Detector Type	Faraday cup standard; electron multiplier optional
Resolution	better than 0.5 amu at 10 % peak height (AVS 2.3); adjustable constant peak width
Faraday Sensitivity	2e-4 A/Torr (N2 at 28 amu, 1 amu peak width 10 % height, 70 eV electrons, 12 eV ions, 1 mA emission)
Multiplier Sensitivity	less than 200 A/Torr, user adjustable with HV
Min Detectable Partial Pressure Faraday	5e-11 Torr (same N2 conditions)
Min Detectable Partial Pressure EM	5e-14 Torr
Operating Pressure Faraday	1e-4 Torr to UHV
Operating Pressure EM	1e-6 Torr to UHV
Maximum Operating Temperature	70 C
Bakeout Temperature	300 C without ECU
Ionizer Design	open ion source, cylindrical symmetry, electron impact
Ionizer Material	SS304
Filament	dual thoriated-iridium with firmware protection; field replaceable
Electron Energy	25 to 105 V, programmable
Ion Energy	8 or 12 V, programmable
Focus Voltage	0 to 150 V, programmable
Electron Emission Current	0 to 3.5 mA, programmable

PARAMETER	VALUE
Degas Power	built-in 1 to 10 W ramp-up
Probe Length From Flange	8.75 in to top of ionizer
Probe Insertion	2.0 in
Probe Mounting Flange	2.75 inch CF
Minimum Tube ID	1.375 in
ECU Dimensions	9.1 in x 4.1 in x 3.1 in (WHL)
Warm Up Mass Stability	+/-0.1 amu after 30 minutes
Computer Interface	RS-232C, 28800 baud with high-level command set
Power Requirement	24 VDC at 2.5 A; optional built-in VAC adapter
Weight	6 lbs
Electrometer Range	1e-7 to 1e-15 A in a single scan
Over Pressure Monitor Rate	675 Hz filament protection
Heater Jacket Setpoint	210 C +/-3 C (O100HJRW with Watlow EHG SL10)
Software Units	Torr, Bar, Pascal, and Amp Notes Specs from SRS RGA100 series product page. RGA100 is the 100 amu UHV probe system, not the QMS200 atmospheric sampling cart. Confirm Faraday versus CDEM, AC adapter, and heater jacket.
Operating temperature	70 C

General Specifications & Supplementary Characteristics

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PARAMETER	VALUE
Software Units	Torr, Bar, Pascal, and Amp Notes Specs from SRS RGA100 series product page. RGA100 is the 100 amu UHV probe system, not the QMS200 atmospheric sampling cart. Confirm Faraday versus CDEM, AC adapter, and heater jacket.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Heater Jacket Setpoint	210 C +/-3 C (0100HJRW with Watlow EHG SL10)
Software Units	Torr, Bar, Pascal, and Amp

Notes

Specs from SRS RGA100 series product page. RGA100 is the 100 amu UHV probe system, not the QMS200 atmospheric sampling cart. Confirm Faraday versus CDEM, AC adapter, and heater jacket.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.