Product Guide for Materials and Surface Science

rbd instruments europe

9103 USB Graphing Picoammeter

The **9103 is a versatile, general-purpose picoammeter** designed to accurately measure DC current from the nA to mA range. The easy-to-read user interface is designed to provide optimal control and quick access to all functions. Features such as an ASCII programming language and data recording/graphing are standard.

The 9103 is **available with high-speed and high-voltage options**, for sample rates up to 500 reads/sec, and the ability to float up to 5 kV DC.

Applications

- Electron & ion beam current measurements.
- Mass spectrometer current measurements.
- Photodiode current & leakage measurements.
- Beam and particle monitoring.
- Spectrometer measurements.
- Data logging current comparisons.

Multiple 9103's can be synchronised using RBD's Actuel software to create a multichannel current data logger.

Bias (optional): Increases accuracy of electron or ion beam current measurements by reducing secondary electron emission (not available on high-voltage models).

The 9103 is available in 4 configurations:

- **Standard:** Sample rate 40 reads/sec.
- **High-Speed:** Sample rate 500 reads/sec.
- **High-Voltage:** Sample rate 40 reads/sec., floats up to 5 kV DC.
- **High-Speed/High-Voltage:** Sample rate 500 reads/sec., floats up to 5 kV DC.

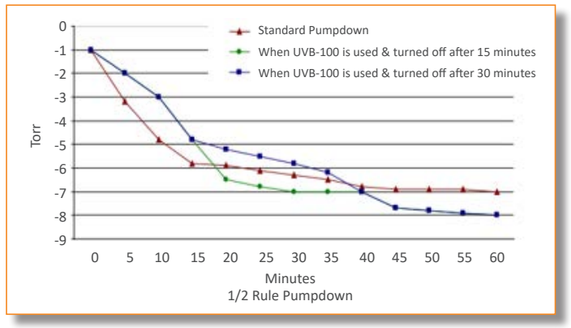
The 9103 Picoammeter.
Rugged, Portable and Low Cost

UVB-100 UV Water Desorption System

The **UVB-100 increases productivity** by pumping out water vapor in vacuum systems quickly. For surface analysis systems, using a UVB-100 means that you can load samples more quickly and without introducing water vapor into your system. For high vacuum systems, faster pump-down times mean more process runs and higher productivity. In production systems, the UVB-100 provides faster ultimate pressure and quicker removal of desorbed water during pump down.

The system comprises the **control** (with key-lock mechanism), **HV-and UHV-compatible UV emitter**, and cables.

The emitter can be inserted into any available 2-3/4" flange, and can also be adapted to other flange sizes.



This graph displays a typical pump-down time with and without UVB-100.

Easy to Use: Simply turn it on; no cables need to be removed, and no blankets are necessary.

Efficient: Water is desorbed more quickly so that you can get your work done sooner.

Compatible: Ideal for large chambers and load locks with O-ring seals. Works with most **HV and UHV systems**.

miniZ Ultra-compact Water Vapor Desorption System

The **miniZ water vapor desorption system** comprises a high-power UVC emitter that fits inside a standard 1.5" I.D. vacuum chamber tube and a compact power supply which mounts directly to the CF flange.

The miniZ is ideal for solving water vapor problems in compact vacuum chambers, mini ALD chambers, pressure cells and load locks.

185 nm UVC radiation provides the correct wavelength of energy to desorb water vapor molecules from the chamber walls, which results in faster chamber pumpdown times and lower ultimate vacuum.

The miniZ power supply is **simple to use** – Just turn it on when you start pumping! A **remote ON/OFF** option is available if you would like to operate the miniZ via a process controller or set point. Produces 350 µW/cm2 @ 6cm from end of emitter (2.75" flange).

Simple, effective and affordable – The miniZ is the perfect solution to water vapor problems in compact vacuum chambers.

VB Series Vacuum Bakeout

The **VB-2 vacuum bakeout package** is designed for vacuum chambers that can take the high heat of shortwave IR. **High-power infrared radiation heats the vacuum chamber from the inside out** to effectively desorb water vapor from vacuum chambers. VB-2 operates on 230 VAC.

The VB Series comprises the **IRB-600IR Emitter** and **BC-3 Controller**.

The IRB-600IR Infrared Emitter assembly provides 600 watts of shortwave infrared heating to the inside of vacuum chambers to effectively remove water vapor from the chamber walls.

BC-3 Vacuum Chamber Bakeout Controller provides total control of your vacuum chamber bakeout process. There are two packages available depending on your power requirements, along with optional accessories.

VB2 Base Package: Includes 230V BC-3 controller, one 2.75" / 70mm flange-mounted IRB-600 emitter, standard 15ft / 4.6m cable set, J-type thermocouple sensor cable, and power cord. Specify CF or KF flange.

Applications

- Surface analysis systems such as X-ray photoelectron and Auger spectrometers.
- For general-purpose vacuum chambers, the VB series provide effective infrared heating of the inside of chamber walls, desorbing water vapor and improving the working vacuum of the chamber.

microCMA Compact Auger Analyser

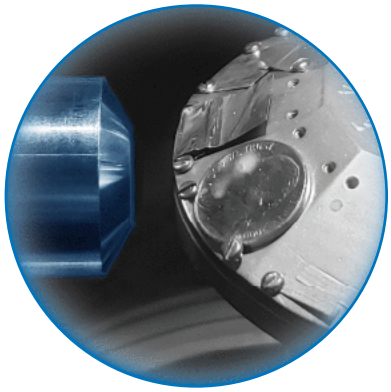
The **microCMA (Cylindrical Mirror Analyser)** represents the latest advancement in Auger Electron Spectroscopy. Compact and affordable, the microCMA opens up a whole new world of AES applications including ALD, TPD, and MBE.

Compact: Fits on a 2.75" (70 mm) CF flange.

Proven Design: The second order focusing of the CMA provides superior transmission and resolution.

Easy to Use: With a USB interface, the control and data massage software interface is as simple to use as an RGA – point and click.

Powerful: Auger Electron Spectroscopy is a powerful surface-sensitive technique that provides quantitative information on the first few monolayers of your sample.



The microCMA. More Affordable than a Standalone XPS System

Applications

Analysis of:

- Thin film composition.
- Passive oxide thickness's in semiconductors and metals.
- Metal component thermal oxides.
- Integrated circuit contamination.

Additional applications:

- Characterisation of sputtered layers.
- Atomic Layer Deposition (ALD).
- Quantisation of light element surface films.

IG2 Ion Source

RBD Instruments' **IG2 Ion Source Package** is the **ideal solution for sputter cleaning of samples** under UHV conditions.

The IG2 Package consists of Model 04-165 2 kV Backfill Ion Source, and Model 32-175 Ion Source Control. These units are interchangeable with the PHI® 04-161 and 04-162 ion guns and the PHI® 20-045 control, respectively.

Model 04-165: Backfill Ion Source generates an energetic inert gas ion beam **for sputter-etching solid surfaces**. The source requires a static pressure of $5x10^{-5}$ torr with an inert gas such as argon. Standard 70 mm (2.75") CF bored flange OD.

Model 32-175: 2 kV Ion Source Control provides all the **necessary voltages and currents required** to operate the Model 04-165 2 kV Backfill Ion Source. The beam voltage may be activated manually or remotely. The built-in emission current meter makes it easy to set the appropriate filament current.

04-165:

- Long filament lifetime.
- Easy to maintain.

32-175:

- Multiple ways to sputter.
- Easily set the filament current.

For further information please contact: sales@rbdinstruments.eu

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