BALTIC SCIENTIFIC INSTRUMENTS

Bringing Solutions

Alpha Spectrometer Amber (2, 8 & 12 channels)

Alpha Spectrometer αmber

DESCRIPTION

The alpha spectrometer is designed to convert alpha particle energies into electrical signals, amplify and filter these signals, and transform them into spectral lines for analysis, including the determination of their intensities. The benchtop alpha spectrometer α2 features two measurement chambers, allowing for the simultaneous analysis of up to two samples. Each chamber of the alpha spectrometer includes an alpha particle detector, a pressure sensor, and a preamplifier for signals from the detector.

The complete spectrometer consists of a stainless-steel vacuum chamber, power supply, preamplifier, pulse generator, discriminator, and counter. The vacuum chamber supports the installation of most types of detectors, including high-resolution Silicon Ion-Implanted Alpha Particle Detectors (SIIDs) with active areas of up to 1200 mm².The sample holder inside the vacuum chamber allows for adjustment of the distance between the sample and the detector.

FEATURES

- Device management via external PC software
- Vacuum gauge with pressure display and software control
- Detector current measurement from 1 nA to 10 µA
- High-voltage cutoff in case of vacuum loss
- Reverse bias applied to the sample holder
- Integrated multichannel analyzer
- Built-in calibration pulser
- Stainless steel vacuum chamber
- Supports samples up to 50 mm (2 inches) in diameter
- Compatible with alpha detectors up to 1200 mm²
- Adjustable sample-to-detector distance from 4 mm to 48 mm (in 4 mm steps)

AlphaPRO software for Amber

Parameter	Value
Number of spectrometry chambers with alpha detectors, preamplifiers, electronics, valves, etc.	**Amber-2**: 2 **Amber-8**: 2 to 8 **Amber-12**: 2 to 12
Count rate	0-50 000 pulses/s
Shaping time constant, switchable	1 µs
Variable gain coarse and fine	Up to 500
Noise level (referred to the input)	< 3 mV for 2 µs
Pole-zero adjustment	Available
Live time correction	Available
Opportunity to operate with pulse feedback preamplifier	Available
Base line auto restoration	Available
Gain stability	<0.0075 %/s
Integral nonlinearity	< 0.025 %

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Alpha-rays