BALTIC SCIENTIFIC INSTRUMENTS

Bringing Solutions

Silicon Ion Implanted Alpha Particle Detectors (SIID)

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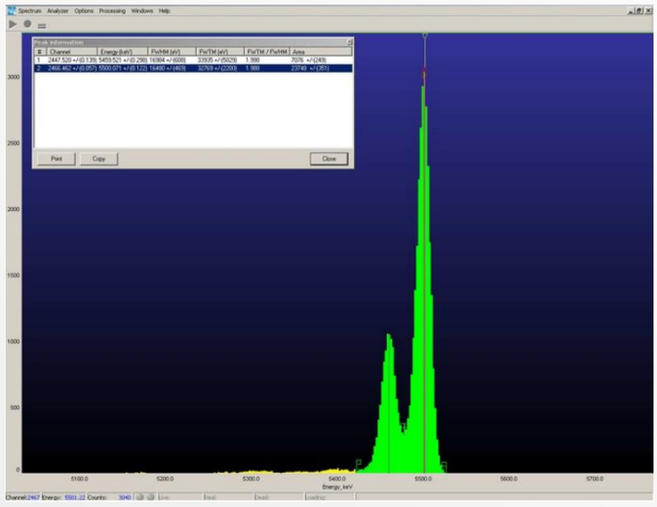
DESCRIPTION

Silicon Ion-Implanted Alpha Detectors are designed for precise alpha spectroscopy. Their thin entrance window ensures good energy resolution, even when the alpha-emitting source is in close proximity, providing high-efficiency detection of alpha particles.

FEATURES

- The detectors can operate without hermetic sealing due to location of the P-N junction inside the detector crystal.
- Contacts are formed using the ion-implantation method, resulting in thin, well-defined junctions.
- Relatively thin dead layer (less than 500 Å).
- High-strength entrance window.
- Suitable for operation in vacuum.
- Detectors can be annealed at temperatures up to 100 °C.
- Available in various package types with BNC or MICRODOT connectors or with wire leads tailored to customer requirements.
- Produced with either an open window or a metallized window.



^{238}Pu spectrum

Silicon Ion-Implanted Alpha Particle Detectors with a metallized entrance window coating can be used as part of radioactive aerosol monitoring systems. This special version of the detector has the following features:.

- Allows operation in ambient light.
- The metal coating provides mechanical and chemical protection; the entrance window thickness is less than 2 µm.
- Operates at a bias voltage from +15 V to +24 V.

Detector area, mm^2	Alpha energy resolution*, keV (Open/Metalized)	Beta energy resolution*, keV (Open/Metalized)	Thickness, µm	Detector bias voltage, V
50	12/15	6/9	300 ± 30	50-70
100	14/19	8/15	300 ± 30	50-70
300	16/21	14/17	300 ± 30	50-70
450	20/25	15/17	400 +/- 30	50-70
600	25/30	20/23	400 +/- 30	50-70
900	30/35	25/28	400 +/- 30	50-70
1200	35/40	30/35	400 +/- 30	50-70

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Alpha-rays