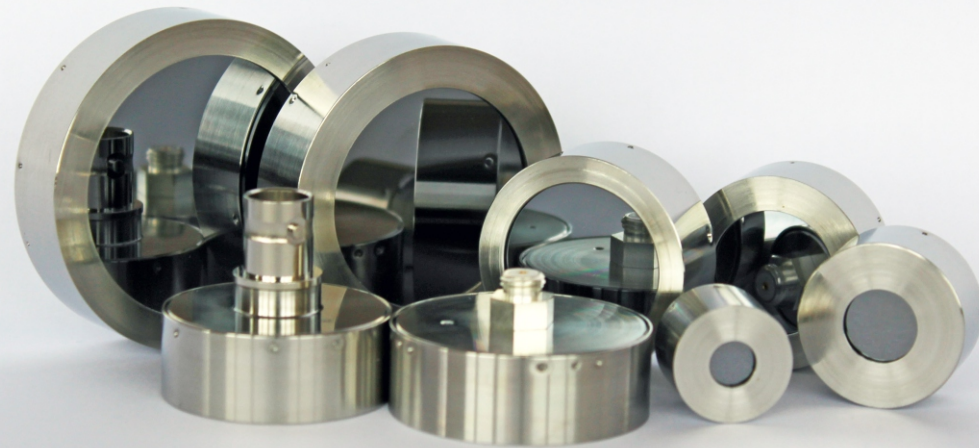


$\alpha$



## Silicon Ion Implanted Alpha Particle Detectors SIID

### Application

Ion Implanted Silicon Alpha Particle Detectors is a product for the precise alpha spectroscopy. The thin entrance window of the detector provides good energy resolution even in close location of the alpha radioactive source and also provides high efficiency registration of alpha particles.

### Features

- The detectors can operate without hermetization due to location of P-N junction inside of the detector crystal
- Contacts are formed using ion-implantation method and provide thin, well-formed junction
- Relatively thin dead layer (less than 500 Å)
- High solidity entrance window
- Possibility to work in vacuum
- Possibility of annealing the detectors up to 100 °C
- The detectors may be equipped with BNC or MICRODOT connectors adapted for different customer needs.
- The detectors are manufactured with open window as well as with metalized window.

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## Specification

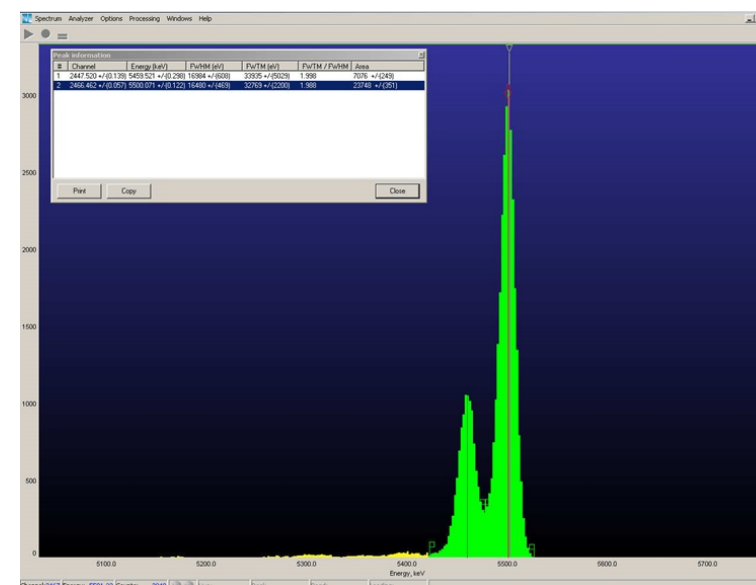
Detector area, mm <sup>2</sup>	Energy resolution*, keV		Detector type	Thickness, μm	Detector bias voltage, V
	Alpha	Beta			
50	12	6	Open	300 +/- 30	50 - 70
100	14	8	Open	300 +/- 30	50 - 70
300	16	14	Open	300 +/- 30	50 - 70
450	20	15	Open	400 +/- 30	50 - 70
450	25	17	Metalized	400 +/- 30	50 - 70
600	25	23	Open	400 +/- 30	50 - 70
600	30	20	Metalized	400 +/- 30	24 - 48
900	25	20	Open	400 +/- 30	50 - 70
1200**	35	30	Open	400 +/- 30	50 - 70

\* Shaping time – 1 μs.

\*\*The detectors of other sizes are available.

The Ion Implanted Silicon Alpha Particle Detectors with metalized coating of entrance window can be used as a part of radioactive aerosol monitors. This is special version of the detectors having following features:

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



<sup>238</sup>Pu spectrum

