

"Slim" Spectrometric Detection Probes



Main Applications

Main Features

- ▶ Very small thickness and weight
- Room temperature operation
- High energy resolution
- High countrate capability
- Small consumption power

- ▶ Nuclear spent fuel verification
- Nuclear waste treatment facilities
- Multielement detectors array

**TEN YEARS IN THE FIELD
OF ROOM TEMPERATURE
SEMICONDUCTOR DETECTORS**



"Slim" Spectrometric Detection Probes SDP 311 and SDP 311/C

"Slim" Spectrometric Detection Probes are miniature gamma-ray detection devices. Spectrometric detection probe SDP 311 and counting detection probe SDP 311/C are available.

The detection probes consist of detector and charge sensitive preamplifier placed inside of a thin rectangular case. The SDP 311 contains CdZnTe quasi-hemispherical detector, the SDP 311/C contains CdTe or CdZnTe planar counting grade detector.

These probes have been especially designed for application in a very narrow locations. Distinctive peculiarity of the SDP 311 is a very small thickness, only 4 mm. These probes also can be used as a single element of a multi-element detectors array.

Specifications

• detector type	
for SDP 311	CZT quasi-hemispherical detector
for SDP 311/C	CdTe or CdZnTe planar detector
• detector volume	
for SDP 311	0.5 ... 20 mm ³
for SDP 311/C	0.5 ... 200 mm ³
• energy resolution* at 662 keV	
for SDP 311	10 ... 22 keV
for SDP 311/C	n/a
• detector high voltage polarity	
for SDP 311	positive
for SDP 311/C	positive or negative
• detector high voltage	up to 600 V
• output signal polarity**	
for SDP 311	negative
for SDP 311/C	negative or positive
• output impedance	50 Ω
• cable driving capability	up to 20 m
• output signal rise time	< 150 ns
• conversion coefficient	> 0.1 mV/keV
• integral nonlinearity (60 keV ... 1.3 MeV)	< 0.2 %
• range of recommended operation temperature	0 to 40 °C
• shift peak position in range of recommended operation temperature	< 0.02 %/ °C
• shift peak position for 8 hours of continuous operation	< 0.2 %
• power requirements	+ 12 V, 12 mA; - 12 V, 8 mA
• dimensions	45 x 24 x 4 mm
* depends on detector's volume	
** depends on used high voltage polarity	

