

Spectrometric Detection Probes



Main Applications

- ▶ **Gamma-radiation spectroscopy**
- Portable and field spectrometers**
- Environmental monitoring**
- Nuclear industry**
- Home land security**

Main Features

- ▶ **High efficiency CdZnTe detector**
- Room temperature operation**
- High energy resolution**
- Small dimension and weight**

Spectrometric Detection Probe with Large Volume CdZnTe Detector SDP500S, SDP1500, SDP4000

Spectrometric Detection Probes SDP500S, SDP1500 and SDP4000 are room temperature operating portable devices with high efficiency large volume CdZnTe quasi-hemispherical detectors. The detection probes are designed for application in an equipment for measurements and analysis of gamma-radiation spectra. The detection probes consists of the CdZnTe detector and charge sensitive preamplifier mounted inside of a sealed cylindrical case with permanent attached cable. Due to its small dimensions and weight the detection probes are convenient for placement in hard for measurements places. The detection probes is powered and connected to the recording equipment by a radiation-resistant connecting cable with maximal length up to 50 m.

Specifications

Spectroscopy Performance

Detector	Probe head dimensions, mm	Detector Volume, cm ³	Bias Voltage, V	Energy Resolution (FWHM) at 662 keV, %*	Peak-to-Compton Ratio at 662 keV*
SDP500S	Ø24 × 58	0.5	≤ 1500	< 2.5	> 4.0
SDP1500	Ø32 × 58	1.5	≤ 2500	< 3.5	> 4.0
SDP4000	Ø40 × 58	4.0	≤ 3000	< 4.0	> 4.0

Basic

• detector type	CdZnTe quasi-hemispherical detector
• detector high voltage polarity	positive
• output signal polarity	positive
• output impedance	50 Ω
• output signal rise time	< 150 ns
• conversion coefficient	> 0.2 mV/keV
• integral nonlinearity (60 keV ... 1.3 MeV)	< 0.4 %
• range of recommended operation temperature	0 to 40 °C
• shift peak position in range of recommended operation temperature	< 0.04 %/ °C
• shift peak position for 8 hours of continuous operation	< 0.2 %
• power requirements	+ 12 V, 18 mA; - 12 V, 13 mA
• connector**	type LEMO FGG.2B.704.CLAD62
• typical connecting cable length***	0.3 m
• environmental protection	IP65
* measured at room temperature	
** other connectors types are available	
*** other connecting cable lengths up to 50 m are available	

