

X-RAY SMART PROBE BDKR-01

Unique high-sensitive smart probe to control dose burden of crystalline lens, mucous membranes and skin. It measures directional dose equivalent rate of continuous x-ray radiation with the energy from 5 keV



Features

- X-ray source search
- Fast response to radiation background change
- The smart probe BDKR-01 has RS232 interface
- Keeping up to 500 measuring spectra in the smart probe nonvolatile memory and transferring them to PC
- Built-in LED stabilization system providing no need to use a reference source
- 256-channel MCA
- Dust and splash-proof case

Application

- Control of acceptable low-energy and intensity x-ray levels from video monitors, night vision equipment, oscillographs, TV receivers, microwave generators, ion implantation devices, inspection and medical sets
- Certification testing of instruments and equipment containing unused x-ray radiation sources, safeguards effectiveness control
- Dosimetry contamination control of radioisotopes ^{55}Fe , ^{239}Pu , ^{129}I , ^{241}Am и др.

The smart probe has scintillation NaI (TI), \varnothing 9x2 mm, with beryllium window as a x-ray radiation detector. The measuring method of directional dose equivalent rate is based on measuring the instrument spectrum and its interval standardized weighing per a dose rate unit. The relevant energy response correction for the count rate mode is also provided.

Specification

Detector	NaI(Tl) \varnothing 9x2 mm with a beryllium window
Directional dose equivalent rate measuring range	0.05-100 μ Sv/h
Directional dose equivalent measuring range	0.05 μ Sv - 5 mSv
Intrinsic measurement error	not more than \pm 15 %
Energy range	5 - 160 keV
Energy sensitivity response	
5 - 60 keV	\pm 35 %
60 - 160 keV	\pm 30 %
Calibration error	
^{57}Co , ^{109}Cd , ^{55}Fe , ^{241}Am	not more than \pm 5 %
Maximum input statistical load	$6 \cdot 10^4 \text{ c}^{-1}$
Detecting count rate range	$0.01 - 6 \cdot 10^4 \text{ c}^{-1}$
Detectable activity of ^{241}Am at 0.5 m for 1-2 s	1000 kBq (27 ^{3}Ci)
Sensitivity on ^{241}Am	400 cps/ μ Sv \cdot h $^{-1}$
Operating temperature range	-20 - +50°C
Relative humidity	up to 90 %
+35°C	
Protection class	IP54
Radio disturbance	
CEI/IEC CESP 22:1997	
Electromagnetic compatibility	
CEI/IEC 61000-4-2:1995	
IEC 61000-4-3:1995	
Weight	0.5 kg
Dimensions	\varnothing 54x255 mm

The smart probe BDKR-01 may be include in to complete set of radiation monitor AT1117M or work independently in real terms being connected to the PC.