

## 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  $^{55}\text{Fe}$ ,  $^{239}\text{Pu}$ ,  $^{129}\text{I}$ ,  $^{241}\text{Am}$  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

---

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