

## **X-RAY SMART PROBE BDKR-01**

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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**

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- 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**

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- 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**

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<b>Detector</b>	NaI(Tl) $\varnothing$ 9x2 mm with a beryllium window
<b>Directional dose equivalent rate measuring range</b>	0.05-100 $\mu\text{Sv/h}$
<b>Directional dose equivalent measuring range</b>	0.05 $\mu\text{Sv}$ - 5 mSv
<b>Intrinsic measurement error</b>	not more than $\pm 15 \%$
<b>Energy range</b>	5 - 160 keV

**Energy sensitivity response**

5 - 60 keV

± 35 %

60 - 160 keV

± 30 %

**Calibration error**<sup>57</sup>Co, <sup>109</sup>Cd, <sup>55</sup>Fe, <sup>241</sup>Am

not more than ± 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 <sup>241</sup>Am** at 0.5 m for 1-2 s1000 kBq (27 <sup>3</sup>Ci)**Sensitivity** on <sup>241</sup>Am400 cps/ $\mu\text{Sv} \cdot \text{h}^{-1}$ **Operating temperature range**

-20 - +50°C

**Relative humidity**

+35°C

up to 90 %

**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**

ø54x255 mm

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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.

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