

# AT1103M

Unique high-sensitive instrument 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.

## X-RAY RADIATION DOSIMETER

5 - 160 keV

0.05 - 100  $\mu\text{Sv/h}$

### Features

- X-ray source search
- Fast response to radiation background change
- Audible and visual alarm at threshold exceeding
- Large digital backlit LCD with analog scale
- Keeping up to 100 measurement results in the dosimeter nonvolatile memory
- Built-in LED stabilization system providing no need to use a reference source
- 256-channel MCA
- Logging and transfer to PC measurement results
- Dust and splash-proof case
- Three power types



### Applications

- 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 control of radioisotopes  $^{55}\text{Fe}$ ,  $^{239}\text{Pu}$ ,  $^{241}\text{Am}$  etc.



# ATOMTEX

INSTRUMENTS AND TECHNOLOGIES FOR  
NUCLEAR MEASUREMENTS AND RADIATION MONITORING

The dosimeter has scintillation NaI (TI), Ø 9x2 mm, with a 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>Directional dose equivalent rate</b> H'(0.07) measuring range .....	0.05 - 100 µSv/h	<b>Sensitivity on <sup>241</sup>Am</b> .....	400 cps/µSv · h <sup>-1</sup>
<b>Directional dose equivalent</b> H'(0.07) measuring range .....	0.05 µSv - 5 mSv	<b>Operating temperature range</b> .....	0 ÷ +40°C
<b>Intrinsic measurement error</b> .....	not more than ±15%	<b>Relative humidity at +35°C</b> .....	up to 90%
<b>Energy range</b> .....	5 - 160 keV	<b>Protection class</b> .....	IP54
<b>Energy sensitivity response</b> 5 - 60 keV .....	±35%	<b>Power requirements</b> Internal Ni-MH accumulator unit .....	6 V
60 - 160 keV .....	±30%	AC mains, frequency 50 Hz .....	220 V
<b>Calibration error</b> <sup>57</sup> Co, <sup>109</sup> Cd, <sup>55</sup> Fe, <sup>241</sup> Am .....	not more than ±5%	DC supply .....	12 V
<b>Maximum statistical load</b> .....	6 · 10 <sup>4</sup> s <sup>-1</sup>	<b>Continuous operation time</b> from fully charged accumulator unit .....	not less than 24 h
<b>Operation mode setup time</b> .....	not more than 5 min	<b>Radio disturbance</b> CEI/IEC CISPR 22:1997	
<b>Detecting count rate range</b> .....	0,01 - 6 · 10 <sup>4</sup> s <sup>-1</sup>	<b>Electromagnetic compatibility</b> CEI/IEC 61000-4-2:1995 IEC 61000-4-3:1995	
<b>Detectable activity</b> of <sup>241</sup> Am at the distance of 0.5 m for 1-2 s .....	1000 kBq (27 µCi)	<b>Weight</b> .....	0.8 kg
		<b>Dimensions</b> .....	233x85x67 mm

**Complete set:** dosimeter, AC adapter, hand strap, handle, holster and Manual.  
Telescopic bar, 1.6 m, cable to connect PC and applied software, cable for DC supply, packing case are options and they are supplied **on additional order.**

The x-ray radiation dosimeter AT1103M has pattern approval certificates of Republic of Belarus, Russian Federation, Ukraine and Kazakhstan.  
It complies with IEC 60846 International standard requirements.

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