

# AT1121, AT1121A AT1123, AT1123A

## X-RAY AND GAMMA RADIATION DOSIMETER

MEASURING RADIATION WITH  
EXPOSURE TIME  
from 10 ns to  $\infty$   
50 nSv/h - 10 Sv/h 15 keV - 10 MeV

Radiation	AT1121 AT1121A		AT1123 AT1123A	
	$\dot{H}^*(10)$	$H^*(10)$	$\dot{H}^*(10)$	$H^*(10)$
X-ray	+	+	+	+
Gamma	+	+	+	+
Bremsstrahlung	+	+	+	+
Continuous	+	+	+	+
Short-term	+	+	+	+
Pulsed	-	-	+	+
Beta (detection)	+	+	+	+

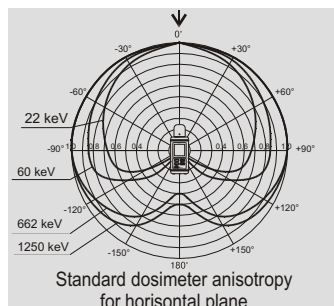
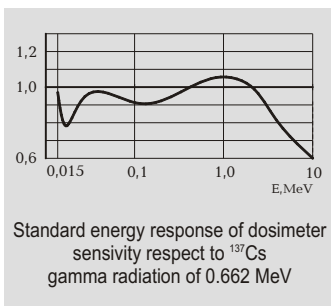
### Features

- Portable multifunctional wide-range instruments
- Short-term radiation (from 30 ms) and pulsed radiation from 10 ns (AT1123, AT1123A)
- Tissue-equivalent detector - scintillation plastic with heavy metal admixtures
- Gamma and beta radiation source search
- Ambient equivalent dose and dose rate measuring
- Exposure time assessment
- Built-in LED stabilization system of the measuring path providing no need to use a reference source
- Large backlit LCD
- Remote measuring with remote control
- Audible and visual alarm at threshold exceeding
- Three types of power
- Extreme environment operation



### Application

- X-ray diagnostics
- Nuclear medicine
- Radiology
- X-ray and gamma non-destructive test
- Radiography
- Customs x-ray equipment
- Radiation emergency
- Radiation monitoring
- Nuclear industry
- Acceleration equipment
- Scientific research



# ATOMTEX

INSTRUMENTS AND TECHNOLOGIES FOR  
NUCLEAR MEASUREMENTS AND RADIATION MONITORING

The main dosimeter function is to measure pulsed radiation with a pulse duration from 10 ns (AT1123, AT1123A), short-term radiation with a pulse duration from 30 ms and continuous x-ray and gamma radiation in wide ranges of ambient dose equivalent rate and energy. The instruments detect soft and hard gamma radiation sources, beta radiation sources, short-term and pulsed radiation with exposure time assessment, and detects moving irradiators as well. Use the instrument keyboard to setup any thresholds from the whole measuring range. The instruments save automatically the maximum dose rate value. They keep for long time 100 measurement results in the nonvolatile memory and are able to transfer data to PC with the rate from 300 to 19200 baud. The instruments have the self-testing mode which starts at switching-on and continues within dosimeter operation. There is no need to use a reference source because of LED stabilization of the measuring path.

## Specification

<b>Detector</b> .....	scintillation plastic with heavy metal admixtures, Ø30x15 mm	<b>Operation mode setup time</b> .....	1 min
<b>Ambient dose equivalent rate measuring range</b> of continuous radiation		<b>Continuous operation time</b>	
AT1121, AT1123 .....	50 nSv/h - 10 Sv/h	AC mains or DC supply .....	not less than 24 h
AT1121A, AT1123A .....	50 nSv/h - 5 Sv/h	built-in accumulator unit .....	not less than 12 h
<b>Ambient dose equivalent rate measuring range</b> of short-term radiation		<b>Operating temperature range</b>	
AT1121, AT1123 .....	50 nSv/h - 10 Sv/h	AT1121, AT1123 .....	-30 ÷ +40°C
AT1121A, AT1123A .....	50 nSv/h - 5 Sv/h	AT1121A, AT1123A .....	-30 ÷ +50°C
<b>Ambient dose equivalent rate measuring range</b> of pulse radiation		<b>Intrinsic measurement error</b> .....	± 15 %
AT1123 .....	1 µSv/h - 10 Sv/h	<b>Calibration error</b> .....	± 5 %
AT1123A .....	1 µSv/h - 5 Sv/h	<b>Complementary error</b> within operating temperature range .....	±10%
<b>Minimum pulse duration</b> at dose rate up to 1.3 Sv/s within the pulse (AT1123, AT1123A) .....	10 ns	<b>Relative humidity</b> at 35 C° .....	98%
<b>Minimum pulse duration</b> for short-term radiation .....	30 ms	<b>Protection class</b> .....	IP54
<b>Ambient dose equivalent measuring range</b> .....	50 nSv - 10 Sv	<b>Power requirements</b>	
<b>Energy range</b>		built-in NiMh accumulator unit .....	6 V
AT1121, AT1123 .....	0,015 - 10 MeV	AC mains .....	220 V
AT1121A, AT1123A .....	0,02 - 10 MeV	DC supply .....	12 V
<b>Energy sensitivity response respect to</b> <sup>137</sup> Cs:		<b>Radio disturbance</b>	CEI/IEC CISPR 22:1997
from 15 keV to 60 keV .....	±35%	<b>Electromagnetic compatibility</b>	CEI/IEC 61000-4-2:1995
from 60 keV to 3 MeV .....	±25%	IEC 61000-4-3:1995	
from 3 MeV to 10 MeV .....	±50%	<b>Weight</b> .....	0.9 kg
<b>Sensitivity on</b> <sup>137</sup> Cs .....	100 cps/µSv · h <sup>-1</sup>	<b>Dimensions</b> .....	233x85x67 mm
<b>Sensitivity to accompanying beta radiation</b> of <sup>90</sup> Sr+ <sup>90</sup> Y at 5 cm when the cap "0.06 - 10 MeV" is on .....	3 · 10 <sup>-7</sup> µSv · h <sup>-1</sup> · Bq <sup>-1</sup>		

**Complete set:** dosimeter, cap "0.06 - 10 MeV" with filter, AC adapter, hand strap, handle, holster and Manual. Remote control with the cable up to 25 m long, audible and visual alarm unit with the cable up to 25 m long, cable to connect PC and applied software, cable for DC supply, telescopic bar 1.6 m, packing case are options and they are supplied **on additional order**.

X-ray and gamma radiation dosimeters AT1121, AT1121A, AT1123 and AT1123A have pattern approval certificates of Republic of Belarus, Russian Federation, Ukraine, Lithuania and Kazakhstan. They comply with IEC 60846 International standard requirements.

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