

AT1121 AT1123

X-RAY AND GAMMA RADIATION DOSIMETER

MEASURING RADIATION WITH
EXPOSURE TIME
from 10 ns to ∞
50 nSv/h – 10 Sv/h 15 keV – 10 MeV

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

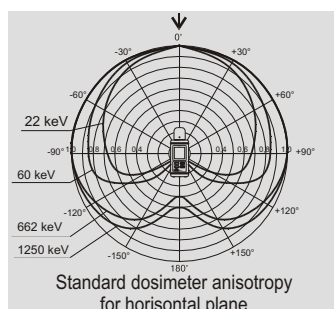
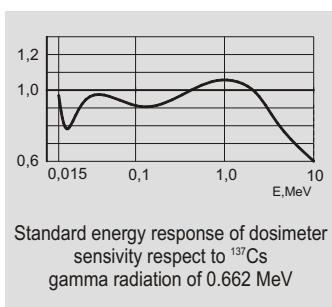
Features

- Portable multifunctional wide-range instruments
- Short-term radiation (from 30 ms) and pulsed radiation from 10 ns (AT1123)
- 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
- Stationary application as an alarm dosimeter with remote control on distance up to 25 m
- 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



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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), 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 1998 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

Detector	scintillation plastic with heavy metal admixtures, Ø30x15 mm	Energy sensitivity response respect to ¹³⁷Cs:	
		from 15 keV to 60 keV	±35%
		from 60 keV to 3 MeV	±25%
		from 3 MeV to 10 MeV	±50%
Ambient dose equivalent rate measuring range of continuous radiation	50 nSv/h - 10 Sv/h	Sensitivity to accompanying beta radiation of ⁹⁰ Sr+ ⁹⁰ Y at 5 cm when the cap "0.06 - 10 MeV" is on	$3 \cdot 10^{-7} \mu\text{Sv} \cdot \text{h}^{-1} \cdot \text{Bq}^{-1}$
Ambient dose equivalent rate measuring range of short-term radiation	5 μSv/h - 10 Sv/h	Operation mode setup time	1 min
Ambient dose equivalent rate measuring range of pulse radiation (AT1123)	0.1 μSv/h - 10 Sv/h	Continuous operation time	
Minimum pulse duration at dose rate up to 1.3 Sv/s within the pulse (AT1123)	10 ns	AC mains or DC supply	not less than 24 h
Minimum pulse duration for short-term radiation	30 ms	built-in accumulator unit	
Ambient dose equivalent measuring range	10 nSv - 10 Sv	AT1121	not less than 24 h
Intrinsic measurement error		AT1123	not less than 12 h
continuous and short-term radiation	± 15 %	Operating temperature range	-30 ÷ +50°C
pulse radiation	± 30 %	Relative humidity at 35 C°	95%
Energy range	15 keV - 10 MeV	Protection class	IP54
Sensitivity on ¹³⁷Cs	70 cps/μSv · h ⁻¹	Power requirements	
Gamma radiation dose rate (¹³⁷ Cs) measurement time does not exceed following values with the statistical error of up to ±20% (P=0,95)		built-in NiMh accumulator unit	6 V
for the dose rate value of 50 nSv/h	less than 60 s	AC mains	220 V
for the dose rate value of 100 nSv/h ...	less than 10 s	DC supply	12 V
for the dose rate value more than 2 μSv/h (up to 10 Sv/h)	less than 2 s	Radio disturbance	
		EN 55022:1998+A1:2000+A2:2003	
		Electromagnetic compatibility	
		CEI/IEC 61000-4-2:1995	
		IEC 61000-4-3:1995	
		Weight	0.9 kg
		Dimensions	233x85x67 mm

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 1.1 m, packing case or bag are options and they are supplied **on additional order**.

X-ray and gamma radiation dosimeters AT1121 and AT1123 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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