

AT6130C Radiation Monitor

Handheld Radiation Monitor



Compact reasonably priced device intended for ambient dose equivalent rate and ambient gamma radiation dose equivalent rate measurement.

Operating principle

Device operating principle is based on the process of count rate measurement of impulses, generated in Geiger-Muller counter tube under the influence of gamma radiation.

Count rate is converted automatically into measurable physical values throughout the range. Energy compensating filter allows correcting energy dependence of sensitivity efficiently in entire energy range of gamma radiation.

Microprocessor-based unit is responsible for controlling the radiation monitor operating modes, calculations, storing and displaying measurement results and for self-checking function.

Rated sensitivity of each measurement range sets up automatically during calibration procedure.

Applications

- Radiation protective measures in case of nuclear disasters
- Civil protection
- Radioecology
- Fire-fighting service
- Customs service
- Dosimetric monitoring in manufacturing facilities, health care and other institutions

Features

- Low weight and small size
- Automatic compensation of intrinsic detector background
- Sound and visual alarm in case threshold level is exceeded for dose and dose rate
- Rapid reaction to statistically significant change of dose rate (measurement process restart)
- Dose rate and dose thresholds can be selected in entire measurement range and saved when the radiation monitor is switched off
- Field operation capability over a wide temperature range
- In search mode each registered gamma quantum is indicated by a sound signal
- Up to 100 measurement results can be stored in non-volatile memory with information about measurement date and time
- Measurement results, current time, date and battery life indicator is displayed on matrix LCD screen
- Bright white backlit LCD-screen



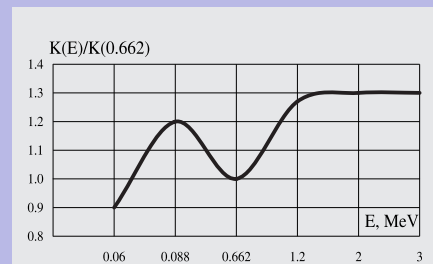
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INSTRUMENTS AND TECHNOLOGIES FOR NUCLEAR
MEASUREMENTS AND RADIATION MONITORING

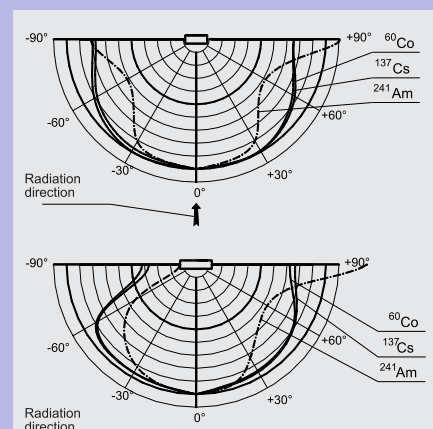
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Specification

Ambient gamma radiation dose equivalent rate measurement range	0.1 $\mu\text{Sv/h}$...1 mSv/h
Ambient gamma radiation dose equivalent measurement range	0.1 μSv ...100 mSv
Intrinsic relative error of measurement	$\pm 20\%$ max.
Gamma radiation energy range	50 keV...3 MeV
Sensitivity to ^{137}Cs gamma radiation	2.8 cps/ $\mu\text{Sv}\cdot\text{h}^{-1}$
Energy dependence , when gamma radiation dose rate is measured for ^{137}Cs	$\pm 30\%$
Radiation overloading	Radiation monitor can withstand 100-fold rise of dose rate measurement upper range limit for 5 minutes with readings not lower than maximum
Continuous run time in natural background conditions	≥ 800 h
Working temperature range	-20°C ... $+55^\circ\text{C}$
Relative humidity with air temperature $\leq 35^\circ\text{C}$ without condensation	$\leq 95\%$
Drop protection	From ≤ 1.5 m to hard surface
Protection class	IP40
Power supply	2 x AA-size batteries (LR 6) or 2 x AA-size rechargeable cells with nominal voltage 1.2 V
Overall dimensions	111x70x28 mm
Weight	0.2 kg



Normal energy response of monitor sensitivity respect to ^{137}Cs gamma radiation of 662 keV



Standard sensitivity response upon gamma radiation incidence angle respect to the calibration direction

AT6130C Radiation Monitor meets International standard requirements:

IEC 60846-1:2009

IEC 60325:2002

Safety standard requirements:

IEC 61010-1:1990

EMC requirements:

EN 55022:1998+A1:2000+A2:2003

EN 55024:1998+A1:2001+A2:2003

IEC 61000-4-2:2001

IEC 61000-4-3:2008

AT6130C Radiation Monitor has the pattern approval certificates of Republic of Belarus, Russian Federation, Ukraine, Kazakhstan and Lithuania.



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