AT6130A, AT6130D Radiation Monitors

Pocket Radiation Monitor

Compact devices intended for gamma and X-radiation ambient dose equivalent and ambient dose equivalent rate measurement.

AT6130A and AT6130D HAVE TWO VARIANTS:

- w/o PC communication interface

- with Bluetooth interface

Operating principle

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

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

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)
- Field operation capability over a wide temperature range
- In search mode each registered gamma quantum is indicated by a sound signal
- Up to 2000 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
- Measurement results can be transmittedt to a PC via Bluetooth interface (If available)
- Headphones can be attached when working in noisy environment
- Bright white backlit LCD-screen
- Display in either *Sv/h* or in *rem/h* (configurable per request)

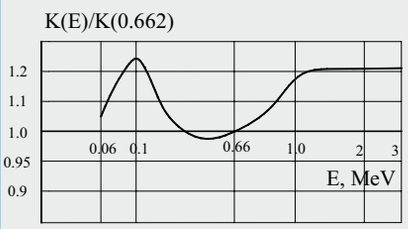
AT6130A, AT6130D Radiation Monitors

Specification

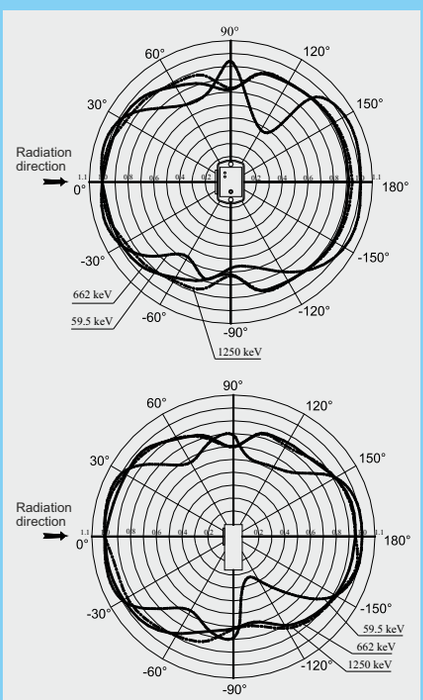
Ambient gamma and X radiation dose rate equivalent indication range	
AT6130A	0.01 μSv/h – 10 mSv/h (*or* 1 μrem/h – 1 rem/h)*
AT6130D	0.01 μSv/h – 100 mSv/h (*or* 1 μrem/h – 10 rem/h)*
Ambient gamma and X radiation dose rate equivalent measurement range	
AT6130A	0.1 μSv/h – 10 mSv/h (*or* 10 μrem/h – 1 rem/h)*
AT6130D	0.1 μSv/h – 100 mSv/h (*or* 10 μrem/h – 10 rem/h)*
Ambient gamma and X radiation dose equivalent indication range	
AT6130A	1 nSv – 100 mSv (*or* 0.1 μrem – 10 rem)*
AT6130D	1 nSv – 1 Sv (*or* 0.1 μrem – 100 rem)*
Ambient gamma and X radiation dose equivalent measurement range	
AT6130A	0.1 μSv – 100 mSv (*or* 10 μrem – 10 rem)*
AT6130D	0.1 μSv – 1 Sv (*or* 10 μrem – 100 rem)*
Limit of intrinsic relative error of dose rate measurement in the range from 0.1 μSv/h to 10 mSv/h (from 10 μrem/h to 1 rem/h)	±20%
X and gamma radiation energy range	50 keV – 3 MeV
Typical sensitivity to ^{137}Cs gamma radiation	2.8 cps/(μSv·h^{-1})
Response time for dose rate change from 1 to 10 μSv/h	≤ 7s (accuracy error ≤ ±10%)
Energy dependence relative to 662 keV (^{137}Cs)	±30%
Radiation overloading	Radiation monitors can withstand 100-fold rise of dose rate measurement upper range limit for 5 minutes with readings not lower than maximum
Burn-up life	≥ 100 Sv
Continuous run time	≥ 500 h
Working temperature range	
AT6130A	-40°C to +55°C (-40°C to -20°C w/o measurement value indication)
AT6130D	-20°C to +55°C
Relative humidity with air temperature ≤ 35°C without condensation	≤ 95%
Drop protection	From ≤ 1.5 m to hard surface
Protection class	IP57
Power supply	2 x AAA-size batteries (LR 03) or 2 x AAA-size rechargeable cells with nominal voltage 1.2 V
Overall dimensions, weight	110x60x38 mm, 0.25 kg

*** Units of measure are chosen during ordering procedure and cannot be altered later**

Design and specifications are subject to change without notice



Normal energy relationship between monitor sensitivity and ^{137}Cs gamma radiation energy of 662 keV



Normal relationship between monitors sensitivity and gamma radiation incidence angle relating to the calibration direction

The radiation monitors comply with:
GOST 27451-87, GOST 28271-89, GOST 17225-85,
Safety requirements of IEC 61010-1:2010,
EMC requirements of EN 55011:2009,
IEC 61000-4-2:2008, IEC 61000-4-3:2008

ATOMTEX®
http://www.atomtex.com

5 Gikalo st., Minsk 220005,
Republic of Belarus
Tel./Fax: +375-17-270-81-42
E-mail: info@atomtex.com

ISO 9001

Corporate Member of European Nuclear Society