AT1329 Sample Counter

Special version for ^{63}Ni is available

Features

- Simultaneous measurement of alpha and beta activity
- Custom calibration settings
- Selectable units of measurement
- LED temperature stabilization
- Passive background radiation protection
- Measurement database software
- Methodological procedures for different types of measurements

Instrument is controlled by an external PC

Available configurations:

- **AT1329 (*alpha-beta*)**
- **AT1329A (*alpha*)**
- **AT1329B (*beta*)**

AT1329 is designed for simultaneous or separate measurement of gross alpha activity and gross beta activity in various samples.

Typical applications:

- Measure gross alpha and gross beta activity of counting samples based on aerosol analytical filters
- Measure gross alpha and gross beta activity in "thick-layer" counting samples prepared from sample material (e.g. by evaporation, or any other method of preparing "thick-layer" sample)
- Measure gross alpha and gross beta activity in "thin-layer" counting samples prepared from sample material (e.g. by electrolytic deposition)
- Measure activity, flux density, external alpha and beta radiation for calibration sources
- Control of surface contamination by a smear method.

Operating principle

Operating principle of AT1329 is based on the use of smart scintillation detection unit for alpha and beta radiation.

External PC with specialized software is used for instrument control and processing of measurement information.

Sample Counter software functions:

- Test and adjust performance parameter
- Select measurement geometry and variable (count rate, pulses per measurement time, activity, volume activity, specific activity, surface activity, etc.)
- Set parameters for measured samples
- Store measurement results into database
- Print measurement results data in form of a report

The sample counters comply with: GOST 27451-87,
Safety requirements of IEC 61010-1:2010,
EMC requirements of EN 55011:2009, IEC 61000-4-2:2008, IEC 61000-4-3:2008

Specification

Scintillation detector	AT1329	Phoswich detector (α and β channel): Plastic 28 cm^2 with ZnS(Ag) layer 28 cm^2
	AT1329A	ZnS(Ag) 28 cm^2 (α channel)
	AT1329B	Plastic 28 cm^2 (β channel)
Sensitivity α radiation (^{239}Pu) β radiation (^{90}Sr+^{90}Y)		 ≥0.25 Bq^{-1}·s^{-1} ≥0.30 Bq^{-1}·s^{-1}
Registration efficiency α particles (^{239}Pu) β particles (^{90}Sr+^{90}Y)		 ≥60% ≥70%
Registered energy range α channel β channel		 3 – 7 MeV 155 keV – 3.5 MeV
Count rate measurement range α channel β channel		 0 – 10^5 s^{-1} 0 – 10^5 s^{-1}
Gross activity measurement range α channel β channel		 0.01 – 10^4 Bq 0.1 – 10^4 Bq
Minimum measured activity (measurement time 1 h) α channel (^{239}Pu) β channel (^{90}Sr+^{90}Y)		 0.02 Bq 0.28 Bq
Background count rate α channel β channel		 0.001 s^{-1} 0.75 s^{-1}
Limits of tolerable intrinsic relative error		±20%
Protection class		IP43
Interface		USB
Continuous operation time		24 h
Average operating life		15 years
Dimensions		230x230x290 mm
Weight	AT1329	≤22 kg
	AT1329A	≤10 kg
	AT1329B	≤22 kg

Design and specifications are subject to change without notice