

AT1329 Sample Counter



Features

- Simultaneous measurement of sample alpha and beta activity
- Custom calibration settings capability
- Selectable units of measurement
- LED stabilization of measurement path
- Passive background radiation protection
- Measurement database capability
- Methodological support of measurements



External PC for instrument control and processing of measurement information is available on request or user can obtain it individually

Available configurations:

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

Purpose

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

Sample counter can be used to:

- Measure gross alpha and gross beta activity of counting samples based on aerosol analytical filters of AΦA type
- 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 sources of 1П9, 2П9, 3П9, 1С0, 2С0, 3С0 type
- Control radiation contamination of surfaces by a smear method.

Operating principle

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

External PC with dedicated 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

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)		≥0.25 Bq ⁻¹ ·s ⁻¹
β radiation (⁹⁰ Sr+ ⁹⁰ Y)		≥0.30 Bq ⁻¹ ·s ⁻¹
Registration efficiency		
α particles (²³⁹ Pu)		≥60%
β particles (⁹⁰ Sr+ ⁹⁰ Y)		≥70%
Registered energy range		
α channel		3 – 7 MeV
β channel		155 keV – 3.5 MeV
Count rate measurement range		
α channel		0 – 10 ⁵ s ⁻¹
β channel		0 – 10 ⁵ s ⁻¹
Gross activity measurement range		
α channel		0.01 – 10 ⁴ Bq
β channel		0.1 – 10 ⁴ Bq
Minimum measured activity (measurement time 1 h)		
α channel (²³⁹ Pu)		0.02 Bq
β channel (⁹⁰ Sr+ ⁹⁰ Y)		0.28 Bq
Background count rate		
α channel		0.001 s ⁻¹
β channel		0.75 s ⁻¹
Limit of intrinsic relative measurement error		±20%
Protection class		IP43
Interface		USB
Continuous run time		24 h
Average operating life		15 years
Dimensions		230x230x290 mm
Weight	AT1329	21 kg
	AT1329A	9 kg
	AT1329B	21 kg

Design and specifications are subject to change without notice