

AT1320M Gamma Activity Monitor

Liquid radioactive waste control in medicine and pharmacy



Applications

- Nuclear medicine
- Radiopharmacy
- Radioecology
- Radioactive waste control

Features

- Spectrometric smart probe with built-in continuous automatic LED stabilisation of energy scale and parametric temperature stabilization
- Memory function and automatic background subtraction for volumetric activity measurement
- Recording and storing in memory up to 300 measured spectra
- PC with dedicated software can be used instead of data processing unit to provide documentation function and for expanding of monitored radionuclides library

AT1320M Gamma activity monitor is a fixed scintillation radiometric unit, designed to measure volume gamma-radiation activity of ^{51}Cr , $^{99\text{m}}\text{Tc}$, ^{111}In , ^{123}I , ^{125}I , ^{131}I and ^{201}Tl radionuclides in liquid radioactive waste.

Measurement geometry - Marinelli beaker, 1.0 litre.

Operating principle

AT1320M Gamma activity monitor operating principle is based on sample radionuclide gamma radiation detection by scintillation detector, instrument spectrum measuring and further matrix method processing with measuring of monitored radionuclide volume activity.

Radionuclide activity data is displayed on Information processing unit screen in real-time.

Setting up procedure and parameter check is performed with ^{133}Ba check sample.



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INSTRUMENTS AND TECHNOLOGIES FOR NUCLEAR MEASUREMENTS AND RADIATION MONITORING

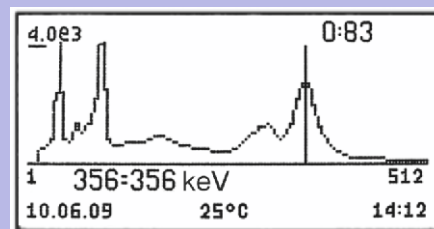
AT1320M Gamma Activity Monitor

Specification

Detector	Scintillation NaI(Tl), Ø63x63 mm
Volume activity measuring range	
¹²⁵ I	5...2·10 ⁶ Bq/l
²⁰¹ Tl, ^{99m} Tc, ¹²³ I, ¹¹¹ In, ¹³¹ I	3...2·10 ⁵ Bq/l
⁵¹ Cr	20...2·10 ⁶ Bq/l
Intrinsic relative error of radionuclide volume activity measurement	±30% max.
Measured samples density	1 g/cm ³
Energy range of measured gamma radiation	20 keV...500 keV
Number of ADC channels	512
Operation mode setup time	10 min
Continuous work time	≥24 h
Measurement instability during continuous service	≤3%
Working temperature range	0°C...+40°C
Relative humidity with air temperature ≤30°C without condensation	≤75%
External background radiation level	0.2 µSv/h max.
Power	230 V(+23 V/-35 V), 50±2 Hz
Power consumption	8 VA max.
Protection class	IP40
Measurement vessels	Marinelli beaker, 1.0 l
PC connection	USB 2.0
Overall dimensions	
Information processing unit	106x220x35 mm
Detecting unit	Ø98x350 mm
Protection unit	Ø600x700 mm
Weight	
Information processing unit	0.5 kg
Detection unit	2.0 kg
Protection unit	125 kg

Capabilities

Instrument spectrum displaying



Radionuclide activity displaying

1:2		600:600	
Nuclide	Bq/l	%	
I-125	102	22	
Tl-201	411	2	
Tc-99m	211	5	
I-123	50.2	31	

2:2		600:600	
Nuclide	Bq/l	%	
In-111	218	3	
Cr-51	1485	5	
I-131	204	4	

AT1320M Gamma Activity Monitor meets

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

IEC 61000-4-4:2004

IEC 61000-4-5:2005

IEC 61000-4-11:2004

IEC 61000-3-2:2005

IEC 61000-3-3:2002



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