

MKG - 1309

GAMMA RADIATION SPECTROMETER

One-crystal scintillation gamma radiation spectrometer
with spectrometric module built into PC

4 - 10⁶ Bq/kg

Features

- Gamma radiation radionuclide detection
- 1024-channel MCA
- Automatic continuous LED stabilization within measuring
- Automatic calibration from radioisotope reference source
- Visualization of spectra acquisition in real time
- Simultaneous spectra acquisition and processing
- Simultaneous PC application for other problems within measuring
- Library of gamma radiation radionuclides



Application

Spectrometric and radiometric monitoring of gamma radiation radionuclides in water, food, agricultural, industrial and building materials, timber, environmental targets (soil, vegetation, etc.) and metallurgical products.



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INSTRUMENTS AND TECHNOLOGIES FOR
NUCLEAR MEASUREMENTS AND RADIATION MONITORING

Specification

Detector , scintillation NaI(Tl)	63x63 mm
Gamma radiation energy range	50-3000 keV
Integral nonlinearity	<1%
Relative energy resolution for ¹³⁷ Cs gamma line 662 keV	< 8.5%
Maximum input statistic load	10 ⁴ s ⁻¹
Continuous operation time	not less than 10 h
Calibration instability	< 2 %
Channel number	1024
Energy channel range	3 keV per channel
Proper background in ¹³⁷ Cs window	< 1.5 s ⁻¹
¹³⁷Cs volume (specific) activity measuring range	4 - 10 ⁶ Bq/l (Bq/kg)
Intrinsic measurement error at P=0.95	±30%
Power requirements-AC mains	
voltage	220 V
frequency	50 Hz
Operating temperature range	+10 +35 °C
Required power	<100 VA
Operation mode setup time	<30 min
Measuring vessels	
Marinely	1 l
flat	0.5 l & 0.1 l
Radio disturbance characteristics CEI/IEC CISPR 22:1997	
Electromagnetic compatibility CEI/IEC 61000-4-2:1995 IEC 61000-4-4:1995 IEC 61000-4-11:1994	
Dimensions	
detection unit	98x435 mm
protection unit	600x700 mm
Weight	
detection unit	3.0 kg
protection unit	110 kg

Complete set: spectrometric gamma radiation detection unit, protection unit, spectrometric module, applied software, reference ¹³⁷Cs gamma radiation source of 12kBq, PC. By additional order it is possible to calibrate the spectrometer to measure natural radionuclide in building materials and products and perform metal radiation monitoring. Corresponding measuring techniques are also provided.

The gamma radiation spectrometer MKG-1309 has pattern approval certificate of Republic of Belarus.

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