

Safety class to NP-001-97 (OPB-88/97) meets the requirements of Class 4

Nomenclature / Description

- Scintillation LaBr₃(Ce) identifier
- Portable handheld computer (PDA) for spectrum analyzing and results displaying
- Power supply

Functions and Features

- gamma-ray registration and linear transformation in the sequence of electrical analog signals and output the readings on the PDA (depending on model) and via RS-485 transmission and / or Bluetooth
- elf-diagnosis capability
- automatic execution of cyclic measurements (a list of tasks on schedule) with a given period and duration – the measurement resolution is in the range from 3 seconds to 1 day (with external power), the storage of the previous 255 spectra
- measurement in an extended range of activities (up to 5×10^{10} Bq/m³)
- work in both fixed and portable mode
- better energy resolution for energy 661,6 keV line of ¹³⁷Cs compared to NaI(Tl) / CsI(Tl)
- the improved efficiency of the gamma-ray registration due to the greater density of the crystal
- the improved linearity of the scale of the spectrometer compared to NaI(Tl) / CsI(Tl)
- the detailed radionuclide analysis and the more accurate account of the impact of natural radionuclides and their daughter products the stability of the calibration scale and energy resolution
- no need for heat detection in sub-zero temperatures which significantly saves battery life, and longer battery life
- the simplified diagram of the stabilization gain without the use of radioactive sources and correction tables
- operates in emergency radiation emissions and in hard radiation environment (maximum static load on the input spectrometer path – not less than 450 000 pulse/sec)
- the reduced measurement uncertainty associated with the loss of coincidence pulse due to the small dead time (maximum output count-rate of the spectrometer – not less than 195 000 codes/s)
- the guaranteed availability of the system at a high activity and high power levels of background radiation (up to 10 mSv/h)



STARK-01

Portable Scintillation Gamma-spectrometer

ЕКРП.412131.001

The measurement of the spectral distribution of gamma-emitting radionuclides in solid, gaseous and liquid media by the direct measurement of the sample / object and the transmission of spectrum to a processing and monitoring device

Certificates

Pattern Approval Certificate of Measuring Instruments RU.C.38.058.A №46904

Technical characteristics

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Energy range of gamma radiation	50 keV – 3.0 MeV
Range of volume activity	8×10^4 – 5×10^{10} Bq / ME
The energy resolution	for gamma radiation energy 122 keV (^{60}Co) is not more than 11.5 % for gamma radiation energy 662 keV (^{137}Cs) is not more than 3.5 %
The maximum input count-rate	at least 4.5×10^5 pulse/s
Maximum output load	not less than 2.0×10^5 codes/s
The relative shift of the peak of 662 keV (^{137}Cs) at maximum count-rate	not more than 0.25 %
The relative change in resolution through the 662 keV (^{137}Cs) with a maximum count-rate	not exceeding 7.5 %
Integral nonlinearity	not more than 0.3 %
Channels accumulated spectrum	1024
Capacity channel spectrum accumulated	2^{30}
Time instability for 24 hours of continuous operation	up to 1 %
Class of protection (GOST 14254)	IP67
Power	12 V External DC source: with an external power supply stabilization: 9–36 V Internal power: Battery 14.4 V 3.0 Ah
Running time in the positive temperature	at least 8 hours throughout the life of the battery
Communication	built-in Bluetooth RS-485 Interface
Dimensions (HxWxD) of crystal LaBr ₃ (Ce)	diameter 75 mm, length up to 285 mm, 8x38 mm (11/2 x 11/2), other sizes are allowed
Weight	not more than 3 kg (with a handle, PDA, battery)

Measurement Procedure

«Measurement of gamma-emitting radionuclides in radioactive waste containers using a portable gamma-ray spectrometer with a detector based on the crystal LaBr₃ (Ce)»

Certificate №40090.2И384, 16.07.2012