



# PORTABLE SCINTILLATION GAMMA SPECTROMETER GAMMA-1S/NB1-04

## INTENDED USE

- Gamma survey of ionizing radiation dose rate with geo-reference
- Determination of the isotope composition of radioactive materials, activity of open sources and radionuclides in packages, enrichment of uranium compounds in transport containers
- Qualitative and quantitative analysis of various items for the presence of gamma-emitting radionuclides both in laboratory and field conditions

## APPLICATION

- Real-time monitoring as part of radioactive reconnaissance mobile laboratories
- Environmental monitoring of various objects for contamination with gamma emitting radionuclides, also as part of mobile radiological laboratories
- Laboratory measurements of various samples for the presence of gamma-emitting radionuclides
- Radiation monitoring of areas close to radiation hazardous facilities: nuclear power plants, nuclear fuel cycle facilities, military sites, etc.

## STANDARD SET

- Digital scintillation gamma detecting device
- Rugged notebook
- Application software
- Certificate of initial verification
- Set of operating manuals

## FEATURES

- Gamma detecting device based on a  $\varnothing 76 \times 76$  mm NaI crystal
- Stabilization of measuring path based on a special LED with gain temperature correction
- Digital processing of signals
- Extended temperature range
- New spectra processing algorithms increasing reliability and validity of results





## GAMMA-1S/NB1-04

### SPECIFICATIONS

Range of detected gamma energies	0.05 to 3 MeV
Energy resolution for the 662 keV gamma line ( $^{137}\text{Cs}$ ), max	8 %
Absolute efficiency of gamma-quanta registration with energy of 662 keV ( $^{137}\text{Cs}$ ) at a distance of 25 cm from the source to the detector, min	0.001
Number of channels	1024
Integral non-linearity	$\pm 1$ %
Time instability over the 24-h period of continuous operation, max	1 %
Maximum statistical load, min	$1.5 \cdot 10^5$ cps
Operating mode setting time, max	30 min
Run time on the built-in batteries, min	8 hours
Continuous operation in $\sim 220$ V mains mode	unlimited
Activity measurement range for a $^{137}\text{Cs}$ radionuclide	$8^*$ to $1 \cdot 10^5$ Bq
Limits of tolerable basic relative error for activity measurement ( $P = 0.95$ )	$\pm(10$ to $50)$ %
Range of gamma dose rate measurement with the basic relative error of 20 %	0.1 to 100 $\mu\text{Sv/h}$
Environmental	-20 to +50 $^{\circ}\text{C}$ , 95 % at +35 $^{\circ}\text{C}$ and lower temperatures without moisture condensation
Dimensions and weight: - UDS-GC-76 $\times$ 76-485-T detecting device	$\varnothing 116 \times 345$ mm, 4 kg

\* The lower limit of the measured activity range (i.e. minimum measured activity) is given for measurement time of 1 hour and point measurement geometry.

### CERTIFICATION

- Complies with the Customs Union Technical Requirements "Safety of Low Voltage Equipment" (CU TR 004/2011) and "Electromagnetic Compatibility of Technical Means" (CU TR 020/2011)
- Registered in the State Register of Measuring Instruments under No 77614-20

