GAMMA-1S/NB1-04

PORTABLE SCINTILLATION GAMMA SPECTROMETER

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
- 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 with spectrometric application software
- Certificate of initial verification
- Set of operating manuals

FEATURES

- Gamma detecting device based on a Ø76×76 mm NaI(Tl) crystal
- Stabilization of measuring path based on a special LED with gain temperature correction
- Digital processing of signals
- RS-485 interface to transfer data from the detecting device to a PC
- Extended temperature range
- Applied processing algorithms ensure high reliability and validity of results

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SPECIFICATIONS

Range of detected gamma energies	0.05 to 3 MeV
Relative energy resolution for the 662 keV gamma line (^{137}Cs), max	8 %
Absolute efficiency of gamma-quanta registration with energy of 662 keV (^{137}Cs) at a distance of 25 cm from the source to the detector, min	0.001 $Bq^{-1}s^{-1}$
Number of channels	1024
Integral non-linearity	±1 %
Time instability over the 24-h period of continuous operation, max	1 %
Maximum statistical load, min	1.5×10^5 cps
Operating mode setting time, max	30 min
Continuous operation when operated from external power supply	unlimited
Power supply:	
- UDS-GC-76×76-485-T detecting device	(9-18) V DC, 1.5 V·A
Activity measurement range for a ^{137}Cs radionuclide	8* to 1×10^5 Bq
Limits of tolerable basic relative error for activity measurement (P = 0.95)	±(10 to 50) %
Range of gamma dose rate measurement with the basic relative error of 20 %	0.1 to 100 μSv/h
Environmental	-20 to +50 °C, 95 % at +35 °C and lower temperatures without moisture condensation
Dimensions and weight:	
- UDS-GC-76×76-485-T detecting device	(Ø116×345) 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

- Registered in the State Register of Measuring Instruments under No 77614-20
- Complies with the requirements for products of safety class 4N according to NP-001-97, NP-001-15, NP-016-05, NP-033-11
- Complies with the requirements of the Technical Regulations of the Customs Union on safety of low voltage equipment (TR CU 004/2011), Technical Regulations of the Customs Union on electromagnetic compatibility of technical means (TR CU 020/2011)