COMPARISON OF BASIC SPECIFICATIONS OF PORTABLE SCINTILLATION GAMMA SPECTROMETERS

SPECIFICATIONS

	GAMMA-1S/NB1-01	GAMMA-1S/NB1-02	GAMMA-1S/NB1-03
Range of detected gamma energies		0.05 to 3 MeV	
Energy resolution for the 662 keV gamma line (^{137}Cs), max	8.0 %	3.5 %	3.5 %
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	0.0003 $Bq^{-1}s^{-1}$	0.00035 $Bq^{-1}s^{-1}$	0.0001 $Bq^{-1}s^{-1}$
Number of channels		1024	
Maximum statistical input load of the spectrometer, min	$1.5 \cdot 10^5$ cps	$2.5 \cdot 10^5$ cps	$2.5 \cdot 10^5$ cps
Limits of integral nonlinearity in the range of detected energies		±1 %	
Operating mode setting time, max		30 min	
Continuous operation in battery mode, min		8 h	
Activity measurement range for a ^{137}Cs radionuclide		8 to $1 \cdot 10^5$ 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	
Operating temperature		-20 to +50 °C	
Gamma detecting device	UDS-GCA-40×40-RS(-BT1) based on Ø40×40 mm NaI(Tl) crystal	UDS-GCA-B380-38×38-RS(-BT1) based on Ø38×38 mm $LaBr_3$(Ce) crystal	UDS-GCA-B380-25×25-RS-BT1 based on Ø25×25 mm $LaBr_3$(Ce) crystal