



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 | | |
| Relative 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 $^{-1}\text{s}^{-1}$ | 0.00035 Bq $^{-1}\text{s}^{-1}$ | 0.0001 Bq $^{-1}\text{s}^{-1}$ |
| Number of channels | 1024 | | |
| Maximum statistical input load of the spectrometer, min | 1.5 $\times 10^5$ cps | 2.5 $\times 10^5$ cps | 2.5 $\times 10^5$ cps |
| Integral non-linearity | ± 1 % | | |
| Operating mode setting time, max | 30 minutes | | |
| Continuous operation in battery mode, min | 8 hours | | |
| Activity measurement range for a ^{137}Cs radionuclide | 8 to 1 $\times 10^5$ Bq | | |
| Limits of tolerable relative error for activity measurement (P = 0.95) | $\pm(10$ to 50) % | | |
| Range of gamma dose rate measurement with the tolerable relative error of ± 20 % | 0.1 to 100 $\mu\text{Sv/h}$ | | |
| Environmental | -20 to +50 °C, 95 % at +35 °C and lower temperatures without moisture condensation | | |
| Gamma detecting device | UDS-GCA-40 \times 40-RS(-BT1) based on ($\varnothing 40 \times 40$) mm NaI(Tl) crystal | UDS-GCA-B380-38 \times 38-RS(-BT1) based on ($\varnothing 38 \times 38$) mm LaBr $_3$ (Ce) crystal | UDS-GCA-B380-25 \times 25-RS-BT1 based on ($\varnothing 25 \times 25$) mm LaBr $_3$ (Ce) crystal |