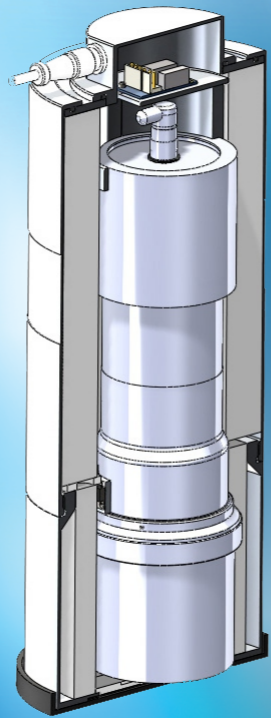


Specification

Parameter	Value
Detector type	NaI(Tl) Ø51x51mm
Energy range, keV	50 - 3000
Energy resolution at 661,7 keV	< 8
Detection efficiency in the full energy peak of radionuclide ¹³⁷ Cs (661,7 keV), %	1,2
Integral nonlinearity in energy range 50 to 3000 keV, %	< ± 1
Maximum throughput, cps	> 5·10 ⁴
Range of the measurements of specific effective activity for NORM, Bq/kg	50 - 20000
Range of the measurements of mass fractions of NORM in rocks, %	
⁴⁰ K	0,5 - 15
U (²²⁶ Ra)	0,0005 - 0,05
²³² Th	0,0005 - 0,10
Range of the measurements of surface activity of ¹³⁷ Cs, kBq/m ²	2 - 5000
Channels quantity in the spectrum	1024, 2048
Data transfer interfaces	Ethernet, RS-485, USB
Shell protection level	IP68
Ambient air temperature, °C	-30 ÷ +60
Air relative humidity, %	up to 100
Atm. pressure in the range, kPa	84 ÷ 106,7



Spectrometer AirSPEC

Application

Scintillation gamma-ray spectrometer AirSPEC is intended for measuring scintillation spectra and also for determination of activities and specific activities of radionuclides in prepared and natural samples in 2n and 4n geometries. Spectrometer can be used for radiation monitoring and various tasks like definition of specific effective activity of naturally occurring radionuclides (NORM) in building materials (granite, crushed stone, gravel, etc.), raw materials, products, waste industrial production and rocks without sampling. In addition, AirSPEC is applicable for measurement of surface activity of the radionuclide ¹³⁷Cs (and other), mass fraction of NORM in rocks and resins the conditions of their natural occurrence on a surface, in boreholes and in warehouses and transport containers. Moreover, AirSPEC can analyze surface contamination of soil, as well as prospecting and exploration of mineral deposits. The spectrometer can be used for operating in laboratory and in the field conditions.

Description

- The spectrometer AirSPEC is a monoblock unit, comprising connectors, outputs and hardware for data transfer. Inside of the spectrometer housing has scintillation detector NaI(Tl) inside, photoelectronic multiplier (PMT), spectrometric stabilization system, HV converter, amplifier, multichannel pulses analyzer (MCA) and processor unit. The spectrometer is placed into thermostabilising and damp proof housing.
- AirSPEC measurement system is autonomous and automated. Operator is able to access the spectrometer remotely through Ethernet, able to execute the analysis of the measured spectra using modern and full-featured software.



Software functions: spectra measurement and record; identification of radionuclides in accordance to the library list; calculation of activity, volumetric activity, MDA, dose rate; count rate measurement in regions of interest (ROI); sensors polling and obtained parameters record.