



HandSPEC

HPGe Hand Held Spectrometer
(Electrically cooled)

Application

- Customs and Homeland security
- Environmental monitoring
- Waste management
- Nuclear industry
- Nuclear Medicine
- First Response

Features

- Integrated solution with HPGe detector, MCA, power supply, etc.
- No Liquid Nitrogen needed
- Long autonomous operation time up to 6 hours
- Really portable and hand held device
- Good energy resolution provided by Pulse tube application
- Rugged and designed for outdoor use in wide range of temperature and humidity

Radionuclides Identifier for Gamma Analysis HandSPEC is a complete spectrometer based on high-purity germanium detector. Cooling system of HandSPEC consists of special cryostat which incorporates Stirling-cycle cryocooler with Pulse tube. HandSPEC is intended for gamma-radiation registration, spectra processing, radionuclides identification and their activities determination by various methods.

HandSPEC has internal processor and spectrometric device to control all spectrometer parameters, perform measurements and store spectra and analysis results in internal memory. Visualization of the results and control of spectrometer parameters is made via built-in touch screen having resolution 800x400 pixels and diagonal 10.8 cm. Battery status indicator in the right upper corner of the screen shows time to recharging of the instrument. Internal processing digital electronics on the basis of 16k channels MCA and is controlled from touch screen. High voltage supply for detector and preamplifier power supply are integrated as well as an internal coarse amplifier and digital filtering and analysis.

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Specification

Parameter	Value
Energy range, keV	
Standard	40 - 10000
Extended (X Series)	10 - 10000
HPGe detector efficiency, %	10*
HPGe detector physical dimensions, mm	Ø50, h = 30
Energy resolution for 10% efficiency detector, keV	
at energy 122 keV	1.1
1.33 MeV	2.0
Peak to Compton ration	41:1
Time of cooling, h	24
Time of continuous operation, h	6
Size of the Spectrometer, mm	426 x 172 x 346
Weight of of the Spectrometer, kg	~ 12

* HPGe Detectors are available with efficiencies: 10%, 15% and 20%

Multichannel Analyzer

Parameter	Value
Channel splitting	128, 256, 512, 1k, 2k, 4k, 8k and 16k
Input count rate, cps	0 - 150000
Shaping time (adjustable) in the range	0.1 – 25 µs
Integral non-linearity	<0.025%
Differential non-linearity	<1%
High Voltage supply	+/- 3.6 kV (up to 5 kV)

Complete set

- HPGe coaxial or planar Detector
- Preamplifier with cooled input stage
- Miniature Stirling-cycle cryocooler with Pulse tube
- Cryocooler controller
- Digital Multichannel Analyzer
- Internal processor with LCD and touch screen
- Analytical software (onboard and for PC)
- Inbuilt GPS module
- Dose rate meter
- Rechargeable li-Ion batteries
- Cable set
- Documentation
- Available accessories: car adaptor, transport case, charger, spare battery, Hand-cart, tripod, etc.

