



## Borehole Gamma Spectrometer

(Several cooling options)

## Application

Borehole Gamma Spectrometer is used for:

- Determination of underground orientation of transuranium ores in their natural beddings (headings, mines, boreholes);
- High precision gamma-spectrometry of radionuclides at inspection of sea bed, water sealed mines, water filled boreholes, radionuclide migration in groundwater;
- Gamma-spectrometry at neutron-activation method of substance analysis.

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## Specification

Parameter	Value		
	Cryoaccumulator	Stirling cryocooler	Liquid nitrogen
Relative efficiency (with respect to 3" x 3" NaI detector and <sup>60</sup> Co source mounted 25 cm above the detector) at 1.33 MeV g-photon*, %		10	
Resolution at 122 KeV at 10 <sup>3</sup> s <sup>-1</sup> , keV	< 1.0	< 1.5	< 1.0
Resolution at 1.33 MeV, keV	< 1.9	< 3.2	< 2.0
Energy range of detector operation, keV	100 - 3500		
Diameter of protective housing, mm	65	80	70
Length of Borehole Probe, mm	1450	1250	1550
Cooling time, h	10	12	8
Autonomous operation time, h	8	15000	10

\* Borehole detection unit can be equipped with HPGe detector with efficiency up to 40%

## Complete set

Borehole Gamma Spectrometer consists of:

- Spectrometric Probe
- Ground workstation

Spectrometric probe consists of:

- Spectrometric gamma-radiation detection unit based on high-purity germanium detector with built-in preamplifier of signals.
- Alternatives for Cooling System:
  - Cryoaccumulator,
  - Stirling cryocooler;
  - Liquid nitrogen,
- Spectrometric device;
- Protective housing;
- Well-logging borehole connection cable;

Ground workstation consists of

- Data processing and analysis software SpectraLineGP;
- Personal computer;
- Borehole cable and connectors set.