BALTIC SCIENTIFIC INSTRUMENTS

MONOLITH
HPGe Detectors with Stirling-cycle refrigerator

Complete set (standard)

Detection unit Monolith consists from the following integrated components:

- HPGe detector
- Preamplifier with State-of-Health (SHP) feature
- Long-lasting Stirling cooler with low power consumption
- Controller for Stirling cooler
- Protective housing

Accessories (optional)

- Multichannel Analyzer (MCA)
- Analytical Software packages:
  - quantitative and qualitative analysis
  - γ-spectra modeling & efficiency registration calculation for complex geometry objects
  - extended radionuclide library
- Collimator set
- Lead shield with supporting table
- Hand-cart or tripod

Features

- 10% - 160% efficiency HPGe p-type coaxial detectors are available;
- Energy range from 40 keV to 10 MeV for GCD model;
- Energy range from 3 keV to 10 MeV for GCDX/GCDX-OS models;
- High efficiency of radiation detection;
- High energy rate up to 200000 MeV/sec;
- Excellent peak symmetry;
- Detection of radiation in any spatial orientation depending on cryostat modification;
- Low background and Ultra - low background materials are available.

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Gamma-rays

Specification

Parameter	Value
HPGe detector relative efficiency	30 %*
Energy resolution**	
at 122 keV	< 850 eV
at 1.33 MeV	< 1900 eV
Peak to Compton ratio	52 : 1
Energy range of detector operation	5*** keV – 3 MeV
Peak shape	
FWTM/FWHM	< 2
FW.02M/FWHM	< 3
Endcap window material	Al / Be / Carbon fibre
Cooling time of the detector, hours	8-10
Orientation in space	Any
AC Power supply	230 V; 50/60 Hz
Power consumption, max	250 W
Power consumption, nominal	120 W
Range of the operating temperatures	0 ... +40, ° C
Detection unit weight	21 kg

* Detectors with higher efficiency are available
** Energy resolution measured in accordance with ANSI/IEEE Std. 325-1996 using Multichannel Analyzer manufactured at BSI.
*** Depending on detector type and input window.

No LN_2 required