

Specification

Parameter	Value
Type of detectors	NaI(Tl)
	CsI(Tl)
	LaBr3(Ce)
	Polystyrene
	ZnS(Ag)
Energy range, keV	
- for gamma radiation	40-3000
- for beta radiation	65-4000
- for alpha radiation	1500-10000
Relative energy resolution on the line 661,7 keV,	
- for NaI(Tl) (63x63mm)	< 8,5
- for NaI(Tl) (76x76mm)	< 9
- for NaI(Tl) (150x100mm)	< 12
- for CsI(Tl) (50x50mm)	< 9
- for LaBr3(Ce) (38x38mm)	< 3,5
Relative energy resolution on the conversion electron line 624 keV	
- for Polystyrene detector	< 15
Integral nonlinearity in the gamma energy range from 40 to 3000 keV, %	< 1
Integral nonlinearity in the beta energy range from 65 to 4000 keV, %	< 2
Detection sensitivity for beta radiation of 90 Sr-90Y (energy range 550-2300 keV), cps/Bq	
- for Polystyrene detector	> 0,15
Detection sensitivity for alpha radiation of 239 Pu, cps/Bq,	
- for ZnS(Ag) detector	> 0,3
Maximum throughput, cps	> 5·10 ⁴



TRIO α , β , γ - spectrometer – radiometer

Application

Spectrometer TRIO is intended for measuring energy distribution of gamma- and beta - radiation, identify gamma-emitting radionuclides, and also for measuring the activity (specific and volumetric activity) natural radionuclides ²²⁶Ra, ²³²Th, ⁴⁰K, ²²²Rn, and technogenic radionuclides (¹³⁷Cs, ¹³⁴Cs, ⁶⁰Co, ^{99m}Tc, ⁹⁰Sr and etc.) in different samples. Also it is used for measuring gross specific activity of beta- and alpha- emitting radionuclides in water.

Complete set (standard)

- Multichannel analyzer Binom
- Spectrometric detectors of gamma – radiation based on NaI(Tl), CsI(Tl) or LaBr3(Ce) crystal
- Spectrometric and Radiometric detectors of beta – radiation based on plastic scintillator (polystyrene)
- Spectrometric Si-detectors of alpha – radiation
- Radiometric detectors of alpha – radiation based on ZnS(Ag) crystal
- Low-background protective chambers
- Vacuum chamber and vacuum gauge with pressure display
- Software for spectrometric analysis

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