

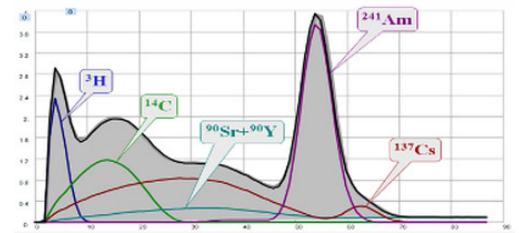
# TRIEL

## Liquid scintillation spectrometer

Liquid scintillation spectrometer TRIEL is a modern portable instrument for measuring the activity of beta and alpha - emitting radionuclides and their mixtures

### FEATURES

- application the system of two PMTs and the coincidence scheme
- high registration efficiency and low background level
- digital multichannel analyzer with the possibility of setting measurement parameters
- low power consumption and the possibility of power supply from the battery
- the ability to connect a number of devices controlled by one software
- software allowing to identify and measure complex radionuclide mixtures
- rapid processing in the automatic mode of spectra with small statistics and with a significant overlap in the energy spectra of constituent radionuclides
- availability of the measurement techniques for water and solid samples taken from natural and technological systems
- fast test (without radiochemical preparation) of the activity of  $\alpha$ - and  $\beta$ -emitters
- Monitoring of natural radionuclides ( $^{226}\text{Ra}$ ,  $^{228}\text{Ra}$ ,  $^{228}\text{Th}$ ,  $^{222}\text{Rn}$ ,  $^{210}\text{Pb}$ ,  $^{210}\text{Po}$ ,  $^{234}\text{U}$ ,  $^{238}\text{U}$ ) and technogenic radionuclides ( $^3\text{H}$ ,  $^{14}\text{C}$ ,  $^{90}\text{Sr}$ ,  $^{89}\text{Sr}$ ,  $^{137}\text{Cs}$ ,  $^{241}\text{Pu}$ ,  $^{36}\text{Cl}$ ,  $^{129}\text{I}$ ,  $^{85}\text{Kr}$ ,  $^{99}\text{Tc}$ ,  $\text{Pu}$ ) in environmental objects at background levels
- Monitoring of technogenic radionuclides in emissions and discharges of enterprises of the nuclear cycle ( $^3\text{H}$ ,  $^{85}\text{Kr}$ ,  $^{89}\text{Sr}$ ,  $^{90}\text{Sr}$ ,  $^{99}\text{Tc}$ ,  $^{129}\text{I}$ ,  $^{241}\text{Pu}$  ...), as well as in radioactive waste



### MAIN PARAMETERS

<u>Number of channels in the spectrum:</u>	1024, 2048, 4096
<u>PC communication interface:</u>	USB and RS-485
<u>Software:</u>	ASW3L or SpectraDec
<u>Quenching:</u>	using an external standard



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### METROLOGICAL CHARACTERISTICS

Energy range of registered alpha radiation, keV	from 2000 to 10000
Energy range of registered beta radiation, keV	from 1 to 4000
Range of activity measurement of alpha and beta emitting radionuclides, Bq	from 0.05 to $5 \cdot 10^4$
Relative energy resolution for energy 624 keV of radionuclide $^{137}\text{Cs}$ , %, not more than	15
Detection sensitivity to beta radiation of radionuclide, cps/Bq	
- radionuclide $^3\text{H}$	0.4
- radionuclide $^{14}\text{C}$	0.95
- radionuclide $^{90}\text{Sr}+^{90}\text{Y}$	0.98
Background intensity in energy range, not more, cps	
$^3\text{H}$ (with an additional set of lead elements)	0.3
Maximum throughput, cps, not less than	$5 \cdot 10^4$

### TECHNICAL SPECIFICATIONS

Operating conditions:

- ambient temperature, °C
- relative air humidity, %
- atmospheric pressure in the range, kPa

from +10°C to +40°C  
up to (70±3)  
101±5

The spectrometer is powered from the AC power supply with voltage, V / with frequency, Hz

220 (+10%;-15%) /  $50 \pm 5$  %

Power consumption, W, not more

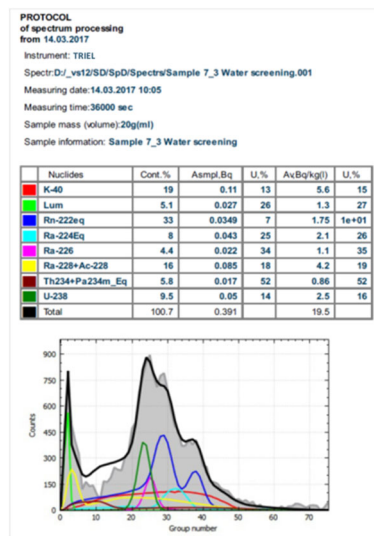
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Dimensions for standard version WxHxL, mm

223x218x473

Weight for standard version, kg

45



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