

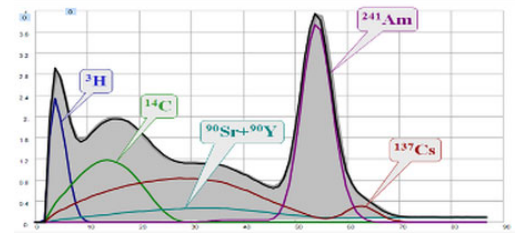
TRIEL

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 α - and β -emitters
- Monitoring of natural radionuclides (^{226}Ra , ^{228}Ra , ^{228}Th , ^{222}Rn , ^{210}Pb , ^{210}Po , ^{234}U , ^{238}U) and technogenic radionuclides (^3H , ^{14}C , ^{90}Sr , ^{89}Sr , ^{137}Cs , ^{241}Pu , ^{36}Cl , ^{129}I , ^{85}Kr , ^{99}Tc , Pu) in environmental objects at background levels
- Monitoring of technogenic radionuclides in emissions and discharges of enterprises of the nuclear cycle (^3H , ^{85}Kr , ^{89}Sr , ^{90}Sr , ^{99}Tc , ^{129}I , ^{241}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



Metrology of ionizing radiation

TRIEL

Liquid scintillation spectrometer

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}Cs , %, not more than	15
Detection sensitivity to beta radiation of radionuclide, cps/Bq	
- radionuclide ^3H	0.4
- radionuclide ^{14}C	0.95
- radionuclide $^{90}\text{Sr}+^{90}\text{Y}$	0.98
Background intensity in energy range, not more, cps	
^3H (with an additional set of lead elements)	0.5
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 ± 5 %

Power consumption, W, not more

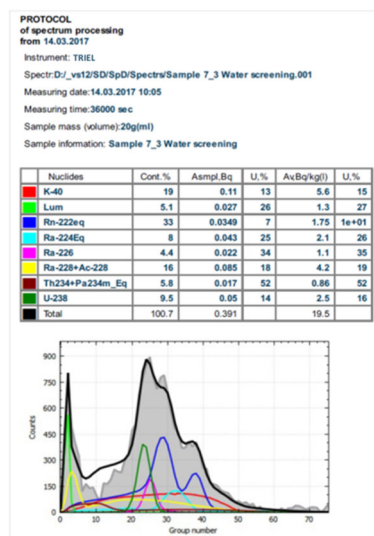
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Dimensions for standard version WxHxL, mm

223x218x473

Weight for standard version, kg

45



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