

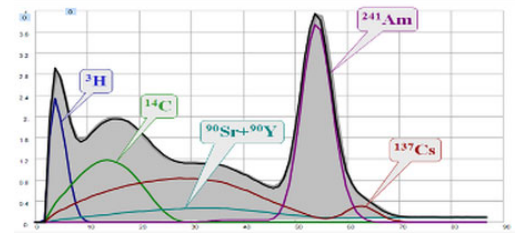
TRIEL

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 |



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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}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 | 0.3 |
| ^{14}C | 0.5 |
| $^{90}\text{Sr}+^{90}\text{Y}$ | 0.7 |
| Maximum throughput, cps, not less than | $1 \cdot 10^5$ |

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

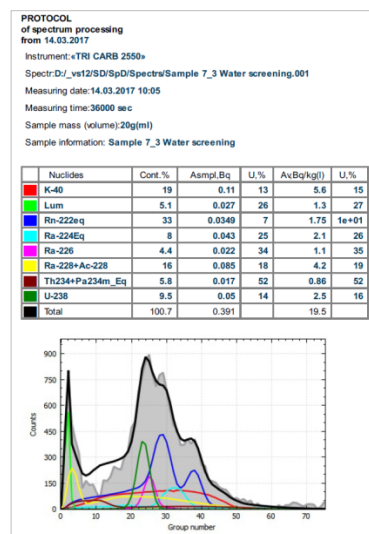
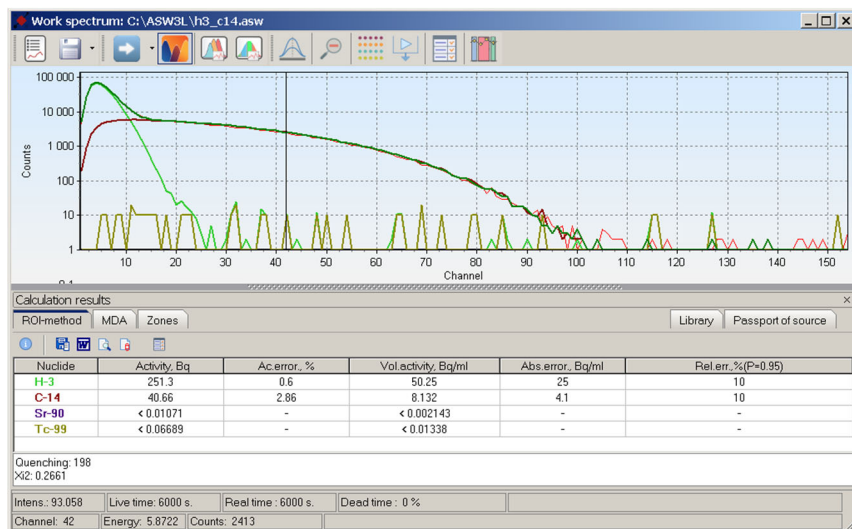
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Dimensions for standard version WxHxL, mm

223x218x473

Weight for standard version, kg

40



TALS Oy. FINLAND, Helsinki, 00160 Merikasarminkatu 12 L4
www.tals.eu E-mail and Skype: info@tals.eu
 Tel: +358449411711