

AT6101

SPECTROMETER

Hand-held multifunctional scintillation gamma radiation spectrometer to search, detect and identify radionuclides and measure ambient equivalent dose rate

FOUR MODIFICATIONS
AT6101, AT6101A,
AT6101B, AT6101C

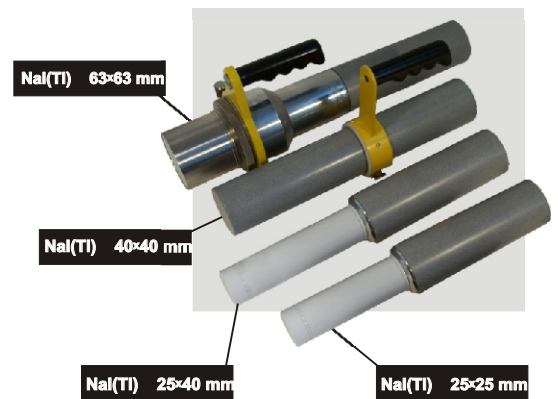
Features

- Gamma radiation source search, detection and activity evaluation
- Spectrometric intelligent detection unit
- Automatic built-in continuous LED stabilization of spectrometer energy scale
- Digital temperature compensation of measuring path
- Audible and visual alarm at gamma radiation radionuclide identification or dose and dose rate threshold exceeding
- Spectrometric data output on LCD with backlighting of 128x64
- Record and keeping up to 500 measured spectra in the memory
- Wide temperature range operation under field conditions (IP65)
- PC interface



Application

- Environmental monitoring
- Radioactive waste control
- Radioactive and fission material trafficking control
- Nuclear medicine
- Scientific research
- Emergency



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INSTRUMENTS AND TECHNOLOGIES FOR
NUCLEAR MEASUREMENTS AND RADIATION MONITORING

Instruments identify natural, industrial and medical radionuclides and nuclear materials. AT6101 and AT6101B modifications measure ambient equivalent dose rate. It is possible to connect external intelligent detection units:

- BDKG-01 to measure ambient equivalent gamma radiation from 0.1 Sv/h to 10 Sv/h.
- BDPA-01 to measure alpha radiation flux density from 0.1 to 10⁴ particles/cm² min.
- BDPB-01 to measure beta radiation flux density from 1 to 10⁴ particles/cm² min
- BDKN-01 to measure neutron radiation flux density in the energy range from 0.025eV to 10 MeV, and measure ambient equivalent neutron radiation dose rate from Pu-Be sources.

Specification

Detector

AT6101 scintillation NaI(Tl) 40x40 mm, G-M tube
 AT6101A scintillation NaI(Tl) 63x63 mm
 AT6101B scintillation NaI(Tl) 25x40 mm
 AT6101C scintillation NaI(Tl) 25x25 mm

Gamma radiation energy range 50-3000 keV

Integral nonlinearity not more than 1%

Relative energy resolution

on gamma line of 662keV 7.0 - 7.5%

Channel number 512

Maximum input statistical load 5 · 10⁴ s⁻¹

Continuous operation time

AC mains, 220V not less than 24 h
 built-in accumulator not less than 14 h

Temporal instability

within continuous operation for 24h not less than 1 %

Ambient equivalent gamma radiation dose rate measuring range

AT6101 0.03 Sv/h - 100 mSv/h
 AT6101B 0.03 Sv/h - 300 Sv/h

Intrinsic dose rate

measurement error not more than ±15%

Operating temperature range -20 +50 °C

Operation mode

setup time not more than 10 min

Protection class IP65

Radio disturbance characteristics

CEI/IEC CISPR 22:1997

Electromagnetic compatibility

CEI/IEC 61000-4-2:1995
 IEC 61000-4-3:1995

Weight

detection unit (AT6101) 1.2 kg
 detection unit (AT6101A) 3.0 kg
 detection unit (AT6101B) 0.8 kg
 detection unit (AT6101C) 0.8 kg
 processing unit 0.7 kg

Dimensions

detection unit (AT6101) 60x320 mm
 detection unit (AT6101A) 97x350 mm
 detection unit (AT6101B) 60x290 mm
 detection unit (AT6101C) 60x275 mm
 processing unit 109x200x35 mm

Complete set: processing unit, spectrometric gamma radiation detection unit, AC adapter, handle, manual.

By additional order it is possible to include into spectrometer complete set external intelligent detection units, cable to connect PC, applied software.

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