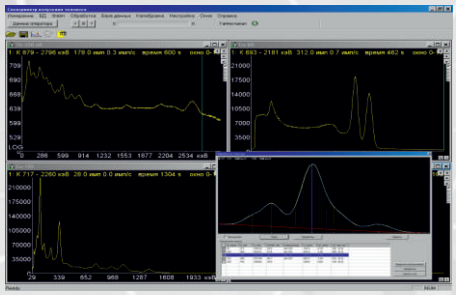
AT1316 Whole Body Counter



^{137}Cs, ^{134}Cs and other radionuclides measurement in human body

Applications

Citizens and staff individual dosimetric monitoring of internal exposure:

- Citizens and staff monitoring during and after radiation accidents
- Factory and office workers monitoring, involved into radioactive material production or use

Features

- Stabilized spectrometric path
- Spectrometric and radiometric measurement modes
- Efficient algorithm of spectra radiometric processing for ^{137}Cs and ^{134}Cs radionuclides activity measurement
- Calculation of expected annual effective internal exposure dose for incorporated ^{137}Cs and ^{134}Cs radionuclides
- Radionuclide identification in spectrometric mode
- Flexible software control of spectrometer functions, generation of database and report based on measurement results
- Fixed chair geometry
- Compact design
- Prompt accommodation to background conditions using operational background generating option
- Can be installed into a van as part of mobile radiation monitoring laboratory
- USB Counter-to-PC connection

AT1316 Whole body counter (WBC) is designed for express-monitoring and measuring of gamma-emitting radionuclides in human body, as well as for internal exposure dose estimation ("Sitting straight" geometry).

Operating principle

WBC operating principle is based on detection of incorporated radionuclide activity with spectrometric detection unit and processing of spectrometer measurement information with hardware-software instruments to define radiometric characteristic of internal contamination considering anthropometric characteristic of target person.

Whole body counter calibration using human body phantom

Measurement of a Person

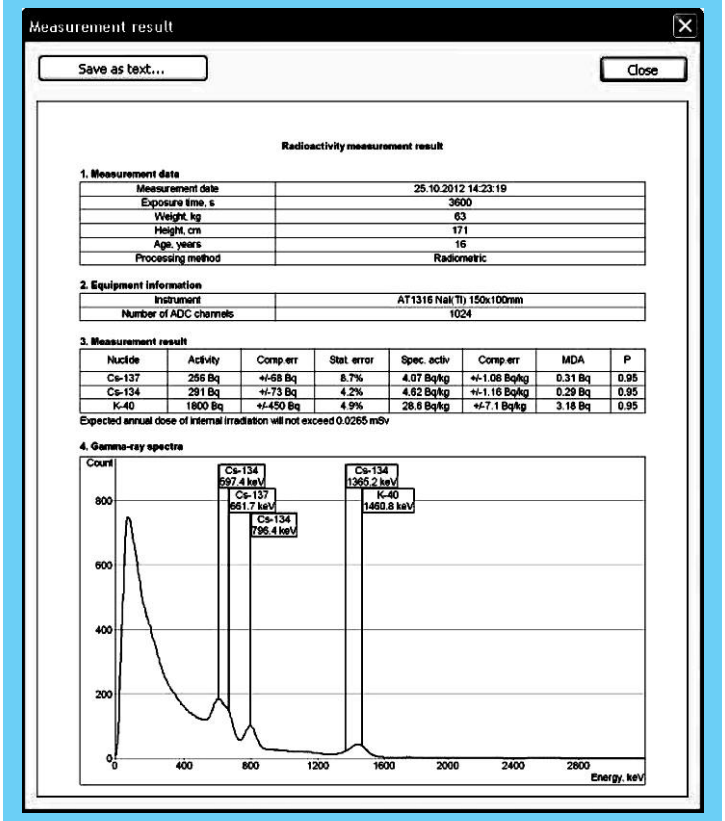
AT1316 Whole Body Counter

Specification

Detector type	Scintillator, NaI(Tl) Ø150x100 mm
Registered gamma radiation energy range	50 keV – 3 MeV
Minimum measured activity of ^{137}Cs and ^{134}Cs in adult human body for 3 min. measurement interval	300 Bq
Radionuclides activity measurement range in human body	
^{137}Cs	80 – $7.5 \cdot 10^5$ Bq
^{134}Cs	80 – $4 \cdot 10^5$ Bq
Measurement geometry	"Sitting straight"
Limits of tolerable intrinsic relative error	±15%
Number of ADC channels	1024
Integral nonlinearity	±1% max.
Typical resolution at 662 keV (^{137}Cs)	9%
Measurement instability during continuous service	±3% max.
Express-monitoring productivity	15 person/h
Operation mode setup time	10 min
Continuous run time	24 h
Working temperature range	+10°C to +35°C
Relative air humidity with air temperature ≤30°C without condensation	≤75%
Power supply	110-230 VAC, 50-60 Hz
Power consumption	≤200 VA
Weight	250 kg

Design and specifications are subject to change without notice

Measurement result display



The whole body counter complies with: GOST 27451-87, Safety requirements of GOST 30324.0-95, EMC requirements of EN 55011:2009, IEC 61000-4-2-2008, IEC 61000-4-3-2008, IEC 61000-4-4:2004, IEC 61000-4-5:2005, IEC 61000-4-6:2008

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