



*Number  
U1524-07  
in State Register  
for Measuring  
Instruments*

*Hygienic  
conclusion  
of the State  
Sanitary-Hygiene  
Expertise  
# 5.10/6300 of  
February 20, 2002*

TY Y 33.2-22362867-006:2001  
TY Y 33.2-22362867-006-01-2003 (military accepted)

### Branches of Use

- Customs and Border Service
- Law enforcement agencies (Army, Ministry of Internal Affairs, State Security Services, guard services)
- Emergency Services and Civil Defense
- Vehicles monitoring, seaports and airports
- Environmental inspectorates
- Sanitary and epidemiological services
- Radiological laboratories
- Labor protection
- Medicine
- Educational programs

*State Sanitary-  
Epidemiological  
Conclusion for use  
in educational  
establishments  
# 05.03.02-04/  
20545 of  
April 09, 2009*

### Purpose of Use

- Measurement of gamma and X-ray radiation ambient dose equivalent rate (DER).
- Measurement of gamma and X-ray radiation ambient dose equivalent (DE).
- Measurement of surface beta-particles flux density.
- Measurement of ambient dose equivalent accumulation time.
- Real time measurement (clock), alarm clock.

## Specifications

### Measurement ranges and main relative errors:

- Gamma and X-ray radiation ambient dose equivalent rate ( <sup>137</sup> Cs)	0.1 ... 9 999 μSv/h ; ± (15+2/√H*(10))%, where H*(10) is a numeric value of measured DER equivalent to μSv/h
- Gamma and X-ray radiation ambient dose equivalent ( <sup>137</sup> Cs)	0.001 ... 9 999 mSv; ±15%
- Beta-particles flux density ( <sup>90</sup> Sr+ <sup>90</sup> Y)	10 ... 100 000 1/(cm <sup>2</sup> ×min); ±(20 + 200/φβ)%, where φβ is a numeric value of measured beta-particles flux density equivalent to part./(cm <sup>2</sup> ×min)
- Ambient dose equivalent accumulation time and accuracy of measurement	1 min ... 9 999 h ; ±0.1 s per 24 h

### Energy ranges of measurement and energy dependence:

- Gamma and X-ray radiation	MeV	0.05...3.0; ±25%
- Beta radiation	MeV	0.5...3.0
- Resolution of threshold level programming for: • dose rate • dose • flux density	μSv/h mSv 10 <sup>3</sup> /(cm <sup>2</sup> ×min)	0.01 0.001 0.01
- Battery life*	hours	1 500
- Operating temperature range	°C	-20...+50
- Weight	kg	0.2
- Dimensions	mm	120 x 52 x 26

\* under gamma background not more than 0.3 μSv/h, switched off display backlight and alarm system

## Features

- Big display with luminescent backlight.
- Simultaneous indication of units of measurement, measurement errors, threshold level and real time on the display.
- Analog ten-segment indicator of registered radiation intensity.
- Ability to perform measurements with a preset error.
- Four-level indication of battery discharge.
- Built-in memory which allows storing up to 1200 measurements.
- Mode of PC connection via Bluetooth.

### Features (continued)

- Five independent measuring channels with alternate indication of data on the single liquid crystal display.
- Built-in gamma, beta sensitive Geiger-Muller counter.
- Prompt evaluation of gamma background within 10 seconds.
- Automatic subtraction of gamma background at measurement of beta contamination.
- Measurement results averaging, manually and automatically interrupted.
- Automatic setting of measurement intervals and ranges.
- Audio, vibration and vibration-audio alarm of each detected gamma-quantum or beta-particle that can be switched off.
- Two-tone audio, vibration and vibration-audio alarm of exceeded programmed threshold levels.
- Two AAA batteries.
- Shock-resistant body.
- Small weight and dimension parameters.

*A description of communications protocol with the PC and a demo program have been prepared and can be downloaded from [www.ecotest.ua](http://www.ecotest.ua).*

### Delivery Kit

- MKS-05 "TERRA" dosimeter-radiometer;
- operating manual;
- leather case;
- "Cadmium ECOMONITOR" software;
- packing box.

### "Cadmium ECOMONITOR" Software

*Is used for:*

- readout of measurement results from the dosimeter memory into the PC as a dosimeter measurement protocol;
- viewing measurement results on the PC monitor, preparation and printout of the report, saving measurement results to a file without changes or as a report for further use.