



Compliant with the international standards IEC 60846 and IEC 60325

Branches of Use

- Law enforcement agencies
- Emergency Services and Civil Defens
- Nuclear power industry
- Radioactive waste storage sites
- Radiological laboratories

Purpose of Use

- Measurement of ambient dose equivalent rate (DER) of gamma and X-ray radiation.
- Measurement of ambient dose equivalent (DE) of gamma and X-ray radiation.
- Measurement of beta-particles surface flux density and beta-particles surface activity.
- Measurement of alpha-particles surface flux density and alpha-particles surface activity.
- Measurement of accumulation time of gamma and X-ray radiation DE.
- Archive of measurement results tagged to location coordinates.

Features

- Possibility to measure ambient dose equivalent rate (DER) of gamma radiation with the detector which is built in the control panel.
- Automatic selection between measurement intervals and ranges.
- Audio signalling of each registered gamma-quantum or beta particle.
- Backlit indicator and control keys for operation in the dark.
- Rechargeable lithium-ion battery charging by the built-in charger from:
 - internal solar battery;
 - 12 V automobile battery;
 - 220 V/50 Hz mains power using a voltage converter.

Features (continued)

- Multilevel indication of battery discharge.
- Operates under conditions involving atmospheric precipitation, dusty atmosphere (IP67); waterproof removable detector down to 0.5 m water depth.
- Measures emergency gamma DER levels by placing the removable detector at up to 30 m distance.
- Analog indicator of radiation intensity.
- Logging of up to 1500 measurement results tagged to location coordinates in the nonvolatile memory via infrared port to the PC (built-in GPS/GLONASS receiver).
- Viewing of logged measurement results on the display.
- Easy to operate even if wearing personal protection – rubber gloves.
- Wide operating temperature range – from -30...+55 °C.
- Display temperature resistance – +95 °C.

Detector types

- gas-discharge Geiger-Muller counters without return run of counting response;
- silicon beta radiation detector;
- emergency scintillation gamma detector (Csl – scintillator-photodiode).

Specifications

Measurement of gamma and X-ray radiation parameters

Measurement range of gamma and X-ray DER with the BDKS-01 combined detecting unit		0.1 µSv/h ...10 Sv/h	
Measurement range of gamma and X-ray DER with the BDKS-02 combined detecting unit		0.1 µSv/h ... 2 Sv/h	
Measurement range of gamma and X-ray DER with the wide range removable detector		Sv/h	0.01 ... 100
Measurement range of gamma and X-ray DE with the detector integrated in a control panel and main relative permissible error		mSv	0.001 ... 9 999
		%	±15
Main relative permissible errors in DER measurement when calibrated with ¹³⁷ Cs for:	– BDKS-01 and BDKS-02 combined detecting units	%	±(15+2/Ĥ*(10)), where Ĥ*(10) is a numeric value of measured DER in µSv/h
	– wide range removable detector	%	±(15+200/Ĥ*(10)), where Ĥ*(10) is a numeric value of measured DER in mSv/h
Energy range of measurement		MeV	0.05 ... 3.0
Measurement range of DE accumulation time and measurement precision		1 min ... 100 h; ±1 min per 100 h	

Specifications (continued)

Measurement of beta radiation parameters

Measurement range of surface beta-particles flux density with the BDKS-01 and BDKS-02 combined detecting units	1/(cm ² ·min)	10 ... 200 000
Measurement range of beta-particles surface activity with the BDKS-01 and BDKS-02 combined detecting units	Bq/cm ²	0 ... 13 500
Energy range of measurement with the BDKS-01 combined detecting unit	MeV	0.3 ... 3.0
Energy range of measurement with the BDKS-02 combined detecting unit	MeV	0.15 ... 3.0
Main relative permissible error in measurements of beta-particles flux density when calibrated to ⁹⁰ Sr+ ⁹⁰ Y	%	±(20+200/φβ), where φβ is a numeric value of measured surface flux density part./(cm ² ·min)
Main relative permissible error in measurements of beta-particles surface activity when calibrated to ⁹⁰ Sr+ ⁹⁰ Y	%	±(20+10/B), where B is a numeric value of measured beta-particles surface activity Bq/cm ²

Measurement of alpha radiation parameters

Measurement range of surface alpha-particles flux density with the BDKS-02 combined detecting unit	1/(cm ² ·min)	10 ... 300 000
Measurement range of alpha-particles surface activity with the BDKS-02 combined detecting unit	Bq/cm ²	0 ... 13 500
Energy range of measurement with the BDKS-02 combined detecting unit	MeV	from 4.0 and more
Main relative permissible error in measurements of alpha-particles flux density when calibrated to ²³⁹ Pu	%	±(15+300/φ), where φ is a numeric value of measured surface flux density part./(cm ² ·min)
Main relative permissible error in measurements of alpha-particles surface activity when calibrated to ²³⁹ Pu	%	±(15+15/A), where A is a numeric value of measured alpha-particles surface activity Bq/cm ²
Time of continuous operation when powered from a rechargeable lithium-ion battery	h	100
Operating temperature range (digital display)	°C	-40 ... +50 (-40 ... +95)

Specifications (continued)

<i>Weight and dimensional characteristics</i>	<i>Weight, kg</i>	<i>Dimensions, mm</i>
Control panel (without case)	1.3	156 x 120 x 60
BDKS-01 detecting unit without the cable	0.3	Ø48 x 165
BDKS-02 detecting unit without the cable	0.6	160 x 73 x 43
Wide range removable detector without the cable	0.1	Ø34 x 50
The delivery kit in a carrying case	9	554 x 420 x 123

Delivery Kit

- control panel;
- BDKS-01 combined gamma/beta detecting unit;
- BDKS-02 combined gamma/alpha/beta detecting unit;
- solar battery;
- short telescopic tube for the detecting unit;
- 10 m long cable for charging from the automobile battery;
- 220/12 V adapter;
- rechargeable lithium-ion battery;
- headphones;
- carrying case;
- operating manual;
- logbook;
- emergency wide range detecting unit kit:
 - removable gamma detector with a 30 m length cable;
 - 5 m telescopic tube with a cable bracket for cable winding;
 - telescopic tube case;
- spare parts;
- exchange infrared adapter and software – on request.



The delivery kit may be completed upon customer's request



BDKS-01



BDKS-02



Emergency wide range detecting unit kit

