

# Monitoring Device KDU-6BM



## Shipboard radiation monitoring equipment

- used on military small displacement ships instead of the obsolete KDU-6B unit
- unique algorithm to determine the direction towards the detected source of radioactive emissions
- measurements ranging from background values
- full self-testing of measurement channels
- high resistance to marine climate

## Description

KDU-6BM is a state-of-the-art development replacing the outdated Soviet KDU-6B unit, which, unlike its predecessor, allows taking measurements ranging from background values, as well as more accurate determining of the direction towards the detected radiation source (four detecting units have been applied instead of two).

The product is a part of the ship's life support system and is designed to collect, process, visualize information about radiation environment aboard and determine the direction towards the source of radiation in order to take measures on crew protection from ionizing radiation and radioactive

contamination, and ship maneuvering in the area that has been exposed to radioactive contamination from nuclear weapons, man-triggered disasters or other reasons.



## Purpose of Use

Display of measurement results of ambient dose equivalent rate (DER) of gamma radiation obtained from the BDBG-6BM detecting units of gamma radiation

Determining the direction towards the source of radiation

Sound and light alarms of exceeding the gamma DER threshold levels

## Branches of Use

- Law enforcement agencies Law enforcement agencies
- Emergency Services and Civil Defense Emergency Services and Civil Defense
- Customs and Border Services

## Features

- Display of measured gamma radiation DER from 4 detecting units is simultaneous and continuous.
- Application of the intelligent detecting units.
- Detecting units have the function of the integrated detectors efficiency control with generation of check information.
- Three-color digital indicators of measurement results have been applied.
- Ability to automatically switch from the basic power system to the backup one without information loss.

## Specifications

### Key specifications of the detecting units

Name	Unit of measurement	Standardized values
Measurement range of gamma radiation DER	$\mu\text{Sv/h}$	0.05 – $10^7$

Main relative permissible error limit of DER measurement at <sup>137</sup> Cs calibration with 0.95 confidence probability	%	$\pm(15+2/H^*(10))$ , where $H^*(10)$ – is a numeric value of DER in $\mu\text{Sv/h}$
Energy range of the detected gamma radiation	MeV	0.05 – 3.00
Energy dependence of measurement results of the detecting unit while gamma DER measurement within the energy range from 0.05 to 1.25 MeV	%	$\pm 30$
Anisotropy of the detecting unit at gamma quanta incidence at angles from + 60° to - 60° on horizontal and vertical planes with regard to the main measurement direction marked with “+” symbol, for <sup>137</sup> Cs and <sup>60</sup> Co isotopes does not exceed	%	$\pm 30$
Operating supply voltage range of the detecting unit from external stabilized power supply	V	7 – 13
Useful current of the detecting unit for the whole range of the measured gamma radiation DER, not more than	mA	30
Time of operating mode setting and measurement time of the detecting unit, not more than	min	3
Unstable readings of the detecting unit during 24 hours of continuous operation, not more than	%	5
Additional relative permissible error limit at measurement caused by environmental temperature change from – 40 to +60 °C	%	5 per each 10 °C of deviation from +20 °C
Interface		RS-485
Dimensions of the detecting unit without fastening elements, not more than	mm	100 x 80 x 250
Weight of the detecting unit without fastening elements, not more than	kg	0.5
Ingress protection rating		IP57

## Environment of use

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– air temperature	°C	-40 – +60
– relative humidity	up to 100 % given +50 °C and lower temperatures with humidity condensation	

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## Key specifications of the concentrator unit

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Name	Unit of measurement	Standardized values according to specifications
Range of gamma radiation DER values display	µSv/h	0.01 – 10 <sup>7</sup>
Time of operating mode setting, not more than	min	1
Time of continuous operation	hrs	24
Operating supply voltage	V	~220(50 Hz)
Power consumption, not more than	W	25
Operating temperatures range	°C	0 – +40
Dimensions, not more than	mm	390x390x175
Weight, not more than	kg	19
Ingress protection rating		IP23

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## Environment of the concentrator unit use

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– air temperature	°C	0 – +40
– relative humidity	up to 98 % given +40 °C and lower temperatures, non-condensing	

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The product provides for the two threshold levels of 0.3 µSv/h and 5 µSv/h. In case of exceeding, the concentrator unit changes the color of gamma radiation DER display, highlights the transparencies of the established direction towards the radiation source, and triggers audio alarm. If the value of the gamma radiation DER measured by any of the detecting units exceeds 5 µSv/h, the concentrator unit lights up “IN ZONE” transparency.

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# Delivery Kit

- BK concentrator unit, 1 pc.;
- BDBG-6BM gamma radiation detecting unit, 4 pcs.;
- The set of spare tools and accessories, 1 pc., including: BDBG-6BM detecting unit, BK-6BM.01 module, BK-6BM.02 module, BK-6BM.03 module, BK-6BM.04 module, passport, case;
- Logbook;
- Operating manual;
- Package.

**Delivery kit may vary depending on the Customer's demands.**

Distribuito in Italia da :

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