

# New PRD “CADMIUM”

## Search Alarm Dosimeter DKS-02PN



## Description

High-sensitivity device intended to detect and localize radioactive and nuclear materials by their external gamma and neutron radiation. It is widely used by the Border Guard Service and environmental inspections to prevent illicit transfer of radioactive materials across the state borders.

## Features

- New generation high sensitivity CsI scintillation detectors of gamma and LiI of neutron radiation with solid state (silicon) photomultiplier.
- Color display with high resolution.
- Integrated GPS/GLONASS-receiver.
- No “microphone effect”.
- High thermal stability.
- Audio and vibration alarm of threshold levels exceeding.

- Light color alarm (indication) of threshold levels exceeding (gamma radiation – red color, neutron – blue) and visual alarm on the side of the device.
- The dosimeter communicates with a PC via USB-port.
- Powered by built-in lithium polymer storage battery that can be charged via USB-cable.
- Ingress protection rating IP67.

# Key Specifications

Gamma sensitivity for ( <sup>137</sup> Cs), not less than	(pulse/s)/(μSv/h)	200
Neutron sensitivity for:		
– thermal neutrons, not less than	pulse·cm <sup>2</sup> /neutron	1.2 ± 0.12
– fast neutrons, not less than	pulse·cm <sup>2</sup> /neutron	0.120 ± 0.012
Indication range of photon-ionizing radiation DER	0.01 μSv/h ... 1 Sv/h	
Indication range of neutron radiation DER	0.01 μSv/h ... 10 mSv/h	
Indication range of photon-ionizing radiation count rate	cps	1 ... 25000
Indication range of neutron radiation count rate	cps	0.01 ... 25000
Main relative permissible error limit of photon-ionizing radiation DER measurement with confidence probability of 0.95 ( <sup>137</sup> Cs)	%	±(15+1/H*(10)), where H*(10) is a numeric value of measured DER equivalent to μSv/h
Energy range of detected photon-ionizing radiation	MeV	0.02 ... 3.00

Energy dependence of the dosimeter readings during photon-ionizing radiation DER measurement in the energy range of 0.05 to 3.00 MeV relative to 0.662 MeV energy ( <sup>137</sup> Cs)	%	±25%
Energy range of detected neutron radiation		from thermal neutrons to 14 MeV
Setup time of operating mode of the dosimeter not more than	min	1
Calibration time relative to gamma background	s	2 ... 60
Response time for photon-ionizing radiation DER variation greater than 10 times	s	0.25
Operating supply voltage of the dosimeter from Li-Ion storage battery	V	3.7
Time of continuous operation of the dosimeter with fully charged storage battery under conditions of normal background radiation with switched off display backlight, not less than	h	45
Operating temperature range	°C	-20 ... +50
Dimensions of the dosimeter without a clip, not more than	mm	67 x 127 x 30
Weight of the dosimeter, not more than	kg	0.28

## Delivery Kit

- Search Alarm Dosimeter DKS-02PN “Cadmium”;
- charger;
- operating manual;
- software;
- packing case.

# Software

## **Is used for:**

- reading measurement results and critical events from the dosimeter memory into the PC
- report preparation and printout
- display of the obtained dosimetric information with the GPS-coordinates on the area map.