

**MKS-07 "POSHUK"**

**SEARCH GAMMA, BETA RADIATION  
DOSIMETER-RADIOMETER**

LOGBOOK  
BICT.412129.003-02 ФО

**Dear user,**

You had chosen well if purchased a device of ECOTEST trademark manufactured by the “Sparing-Vist Center”. The unit will reliably operate during many years. Should you have any questions concerning its use, please, contact our managers by telephone (+38 032) 242-15-15, fax (+38 032) 242-20-15 or e-mail [sales@ecotest.ua](mailto:sales@ecotest.ua).

We would greatly appreciate to receive your comments on its operation. The device is under 18-month (free of charge) guarantee maintenance.

Best regards, International Sales Department.

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## 1 GENERAL GUIDELINES

Carefully study the operating manual before using the MKS-07 "POSHUK" search dosimeter-radiometer of gamma, beta radiation (hereinafter called the dosimeter).

The logbook should be always included in the delivery kit of the dosimeter.

All records in the logbook should be accurate and clear.

Erasures and uncertified corrections are not allowed.

Operation is registered in hours.

The dosimeter can be used under the following conditions:

- ambient air temperature from - 25 to +55 °C;
- relative humidity up to 100% at the temperature of 30 °C;
- atmospheric pressure from 66 to 106.7 kPa.

## 2 KEY SPECIFICATIONS

2.1 Key specifications are presented in the Table 2.1.

Table 2.1

Name	Standardized value according to the specification	Actual data
1	2	3
Measurement range of photonizing radiation ambient dose equivalent rate (DER), $\mu\text{Sv/h}$	$0.1 - 2.0 \cdot 10^6$	meets the requirements
Main relative permissible error limit of DER measurement with 0.95 % confidence probability: - in precise measurement mode - in search mode	$15 + \frac{2}{\dot{H}^*(10)}$ $25 + \frac{2}{\dot{H}^*(10)},$ where $\dot{H}^*(10)$ is a numeric value of measured DER in $\mu\text{Sv/h}$	
Measurement range of photonizing radiation ambient dose equivalent (DE), mSv	0.001 - 9999	meets the requirements
Main relative permissible error limit of DE measurement (DER from 0.1 to $1.0 \cdot 10^4 \mu\text{Sv/h}$ ) with confidence probability of 0.95, %	$\pm 15$	

Table 2.1 (continued)

1	2	3
Energy range of the detected photon-ionizing radiation, MeV	0.05 – 3.00	meets the requirements
Energy dependence of the dosimeter readings at photon-ionizing radiation DER and DE measurement in the given energy range, %, not more than	±25	
Measurement range of surface beta-particles flux density, part./( $\text{cm}^2 \cdot \text{min}$ )	5 - $10^5$	meets the requirements
Main relative permissible error limit of surface beta-particles flux density measurement with confidence probability of 0.95, % - in precise measurement mode - in search mode	$15 + \frac{200}{\phi_{\beta}}$ , $25 + \frac{200}{\phi_{\beta}}$ , where $\phi_{\beta}$ is a numeric value of measured flux density in part./( $\text{cm}^2 \cdot \text{min}$ )	
Energy range of the detected particles of beta radiation, MeV	0.15 – 3.00	meets the requirements
Operating supply voltage of the dosimeter from the storage battery of four AA batteries, V	4.8	meets the requirements
Additional relative permissible error limit at measurement caused by supply voltage variations from 5.2 to 4.2 V, %	±5	meets the requirements
Additional relative permissible error limit at measurement caused by ambient temperature changes from - 25 to +55 °C, %	±5, per each 10 °C deviation from 20 °C	meets the requirements
Time of operating mode setting, min, not more than	2	meets the requirements

Table 2.1 (continued)

1	2	3
Battery lifetime of the charged storage battery of 900 mA·h capacity at natural background and switched off display backlight, h, not less than	400	meets the requirements
Unstable readings of the dosimeter during 6 hours of continuous operation, %, not more than	±10	meets the requirements
Useful current of the dosimeter at operating supply voltage of 4.8 V, natural background and switched off display backlight, mA, not more than	2	meets the requirements
Dimensions of the control panel of the dosimeter, mm, not more than	86x35x154	meets the requirements
Dimensions of the remote detecting unit of gamma radiation, mm, not more than	80x36x214	meets the requirements
Dimensions of the remote detecting unit of beta-particles, mm, not more than	82x43x154	meets the requirements
Weight of the control panel of the dosimeter, kg, not more than	0.5	meets the requirements
Weight of the remote detecting unit of gamma radiation, kg, not more than	0.6	meets the requirements
Weight of the remote detecting unit of beta-particles, kg, not more than	0.5	meets the requirements

Quality Control Department Representative \_\_\_\_\_  
(signature)

## 2.2 Precious materials content

The dosimeter contains no precious materials.

### 3 DELIVERY KIT

3.1 The delivery kit of the dosimeter consists of units and maintenance documentation presented in the Table 3.1

Table 3.1

Type	Item	Q-ty	Note
BICT.468382.002-02	Control panel	1	
BICT.467979.002-02	BDBG-07 gamma radiation de- tecting unit	1	
BICT.467979.003-02	BDIB-07 beta-particles detecting unit	1	
BICT.304592.001	Telescopic tube	1	
BICT.686423.001	Connecting cable	1	
BICT.412129.003-02 TO	Technical description and operating manual	1	
BICT.412129.003-02 ΦO	Logbook	1	
BICT.305636.001-02	Packing box	1	
	Purchased charger	1	Model is not specified
BICT.686423.002	Connecting cable of se- rial port	1	Supplied at the customer's request
	Infrared port adapter	1	Model is not specified Supplied at the customer's request

#### 4 CERTIFICATE OF ACCEPTANCE

The MKS-07 “POSHUK” search dosimeter-radiometer of gamma, beta radiation of BICT.412129.003-02 type with \_\_\_\_\_ serial number meets the TY Y 22362867.003-99 standard technical requirements, is tested and accepted for use.

Date of manufacture \_\_\_\_\_

Stamp here QCD Representative:

\_\_\_\_\_  
(signature)

Verification Mark here State Verification Officer:

\_\_\_\_\_  
(signature)

#### 5 PACKING CERTIFICATE

The MKS-07 “POSHUK” search dosimeter-radiometer of gamma and beta radiation of BICT.412129.003-02 type with \_\_\_\_\_ serial number is packed by the PE “SPPE “Sparing-Vist Center” in accordance with the TY Y 22362867.003-99 standard technical requirements.

Date of packing \_\_\_\_\_  
Stamp here

Packed by \_\_\_\_\_ (signature)

Packed product accepted by \_\_\_\_\_ (signature)

## 6 PUTTING IN PROLONGED STORAGE AND REMOVAL FROM STORAGE

Table 6.1

Date of putting in prolonged storage	Storage method	Date of removal from storage	Name of the enterprise in charge of putting the unit in prolonged storage or removing from storage	Date, position and signature of the responsible official

## **7 WARRANTY**

7.1 The manufacturer guarantees the conformity of the dosimeter to the technical requirements provided that the customer observes the operating, shipping and storage conditions described in the BICT.412129.003-02 TO operating manual.

7.2 The warranty period of the dosimeter shall terminate and be of no further effect 18 months after the date of putting it into operation and not more than 24 months after the manufacture date.

7.3 The warranty period of storage of the dosimeter is 6 months after its manufacture date.

7.4 The warranty period of use of the dosimeter is prolonged for the period of the warranty repair time.

7.5 After the warranty period of the dosimeter terminates, the repair of the dosimeter is performed according to separate contracts.

7.6 Warranty and post-warranty repair is done only by the manufacturer.

7.7 If the mechanical damage is detected or the seals are removed the repair is done at customer's cost.

7.8 The storage battery failure is not the reason for claim, after the warranty period of the battery is finished.

## 8 CLAIMS

8.1 In case of failure or troubles during the warranty period of the dosimeter, the user should contact the enterprise producer by e-mail (see below) to receive the address of the nearest service center:

**PE “SPPE “Sparing-Vist Center”,  
Tel. (+38 032) 242-15-15, fax (+38 032) 242-20-15,  
E-mail: sales@ecotest.ua.**

8.2 All claims are registered in the Table 8.1

Table 8.1

Date of failure	Claim summary	Action taken	Note

## 9 STORAGE

Table 9.1

Date		Storage conditions	Position, name and signature of the responsible official
of placing in storage	of removing from storage		

**10 TRANSFER AND FASTENING OF THE DOSIMETER DURING USE**

10.1 Transfer of the dosimeter during use

Table 10.1

Received		Position, name and signature of the person responsible for acceptance	Sent		Position, name and signature of the person responsible for sending
from	number and date of order		to	number and date of order	

## 10.2 Assignment of the dosimeter during use

Table 10.2

Position	Name of the person responsible for use	No. and date of order		Signature of the responsible official
		about assignment	about repeal	

**11 OPERATION REGISTER**

11.1 Operation register

Table 11.1

Date	Purpose for operation	Time of switching on	Time of switching off	Operation duration

## 11.2 Calendar operation register

Table 11.2

Month	Total per year								
	20			20			20		
	Number of hours	Total	Signature	Number of hours	Total	Signature	Number of hours	Total	Signature

## 12 TROUBLE RECORD DURING USE

Table 12.1

Date and time of failure. Operating mode	Type (manifestation) of trouble	Cause of trouble, number of operation hours of the failed element	Action taken and claim note	Position, name and signature of the person responsible for solving the problem	Note

### 13 PERIODIC VERIFICATION OF KEY SPECIFICATIONS

Table 13.1

Name		Verification date					
Name	Values according to the specifications	20.....		20.....		20.....	
		Actual value	Measured by: Position, Signature	Actual value	Measured by: Position, Signature	Actual value	Measured by: Position, Signature
Main relative error limit of photon-ionizing DER measurement, % - in precise measurement mode, - in search mode	$15 + \frac{2}{\dot{H}^*(10)}$ $25 + \frac{2}{\dot{H}^*(10)},$ <p style="text-align: center;">where <math>\dot{H}^*(10)</math> is a numeric value of measured DER in <math>\mu\text{Sv/h}</math></p>						
Main relative error limit of photon-ionizing DE measurement, %	$\pm 15$						
Main relative error limit of beta-particles flux density measurement, % - in precise measurement mode, - in search mode	$15 + \frac{200}{\phi_\beta},$ $25 + \frac{200}{\phi_\beta},$ <p style="text-align: center;">where <math>\phi_\beta</math> is a numeric value of measured surface flux density in <math>\text{part}/(\text{cm}^2 \cdot \text{min})</math></p>						

Table 13.1 (continued)

Name		Verification date					
Name	Values according to the specifications	20.....		20.....		20.....	
		Actual value	Measured by: Position, Signature	Actual value	Measured by: Position, Signature	Actual value	Measured by: Position, Signature
Main relative error limit of photon-ionizing DER measurement, % - in precise measurement mode, - in search mode	$15 + \frac{2}{\dot{H}^*(10)}$ $25 + \frac{2}{\dot{H}^*(10)},$ <p>where <math>\dot{H}^*(10)</math> is a numeric value of measured DER in <math>\mu\text{Sv/h}</math></p>						
Main relative error limit of photon-ionizing DE measurement, %	$\pm 15$						
Main relative error limit of beta-particles flux density measurement, % - in precise measurement mode, - in search mode	$15 + \frac{200}{\phi_\beta},$ $25 + \frac{200}{\phi_\beta},$ <p>where <math>\phi_\beta</math> is a numeric value of measured surface flux density in <math>\text{part./}(\text{cm}^2 \cdot \text{min})</math></p>						

**14 REPLACEMENT OF COMPONENT PARTS (COMPONENTRY INCLUDED)**

Table 14.1

Removed part				Newly inserted part		Date, position and signature of the person responsible for replacement
Name and type	Number or name of the unit	Number of hours worked	Cause of failure	Name and type	Number or name of the unit	

**15 CATEGORY APPROVAL CERTIFICATE**

Table 15.1

Date	Reason for category approval	Approved category	Position, name and signature of the responsible official	Note

## 16 REPAIR

Table 16.1

Name and type of the component part	Reason for repair	Date		Name of the repair organization	Number of hours worked before repair	Type of repair	Name of repair work	Position, name and signature of the responsible person	
		of arriving for repair	of completion of repair					who performed repair	who accepted after repair

**17 VERIFICATION AND INSPECTION RESULTS**

Table 17.1

Date	Verification or inspection type	Verification or inspection results	Position, name and signature of the responsible for inspection person	Note