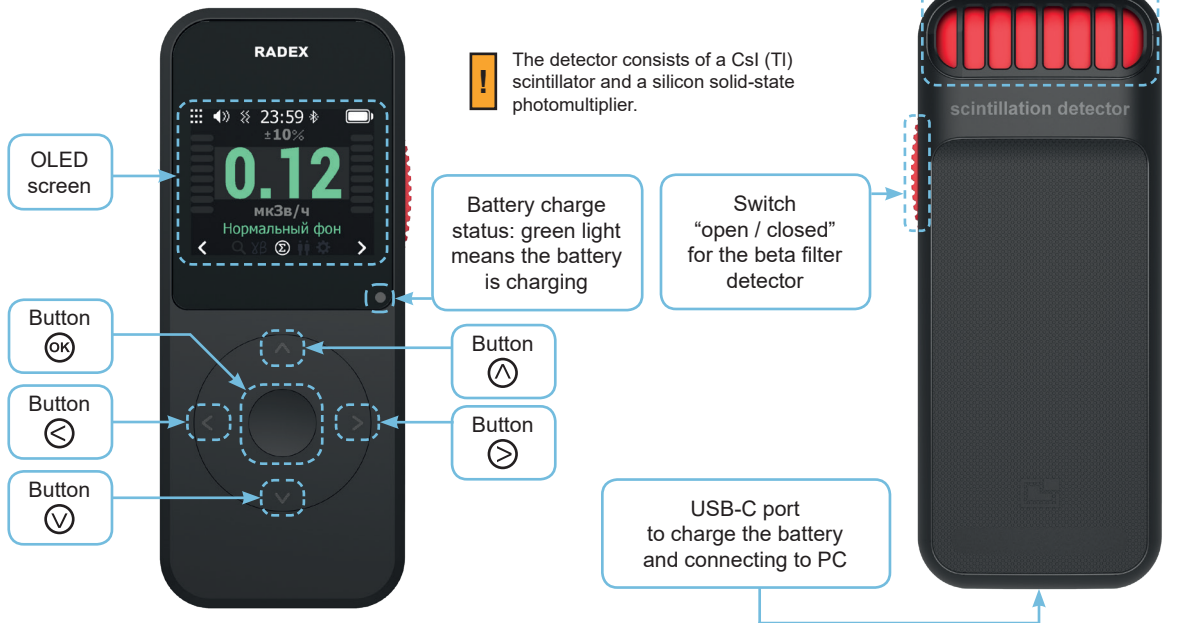


# RADEX OBSIDIAN Radiation Dosimeter

## Intended Use

Radiation dosimeter is used to measure the radioactivity of food, building materials, antiques, household goods, soil in household plots, vehicles, etc.



## To begin — First Use

**Turning ON for the first time, using basic settings.**

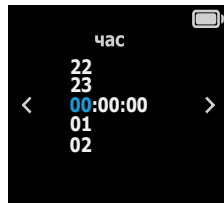
### 1. Turning ON for the first time

To turn on, press and hold **OK** for 2-3 seconds. A beep will sound and clock settings will appear on the screen.



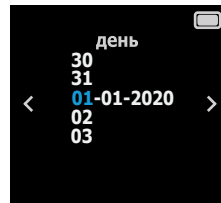
### 2. Setting Time

To set the current hour, use buttons **Up Arrow** and **Down Arrow**. To continue, press **OK** or **Right Arrow** and proceed setting minutes then seconds the same way as the hour.



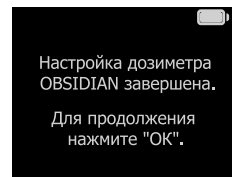
### 3. Setting the Date

To set the current day, use buttons **Up Arrow** and **Down Arrow**. To continue, press **OK** or **Right Arrow** and proceed setting the month then the year the same way as setting the day.



### 4. Settings complete

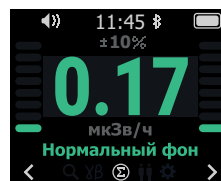
Basic Settings are done. To continue, press **OK** and the unit will begin measuring.



## Turning the device ON and OFF

### Turning ON

Press and hold **OK** for 2-3 seconds. A beep will sound indicating that the unit is on. When first turned on, the device is in the default Equivalent Dose Rate Mode (EDR).

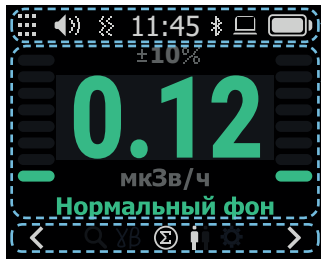


### Shutting OFF

Press and hold **OK** for 2-3 seconds to shut off the unit. The screen will go blank and the unit will be off.

If the device is in Sleep Mode (**Z<sup>2</sup>** lights up on the screen), then press any button and the device will exit the sleep mode, then press and hold **OK** for 2-3 seconds. The screen will go blank and the unit will be off.

## What is on the screen



Notifications and Alarms

Measured results

Modes of measuring

### Notifications and Alarms

|  |                       |  |                       |
|--|-----------------------|--|-----------------------|
|  | audio alarm is ON     |  | battery power at 100% |
|  | vibration alarm is ON |  | battery power at 80%  |
|  | Bluetooth is ON       |  | battery power at 50%  |
|  | connected to phone    |  | Battery power at 30%  |
|  | current time          |  | battery power at 10%  |
|  | connected to PC       |  | USB connected         |
|  | saving to History     |  |                       |

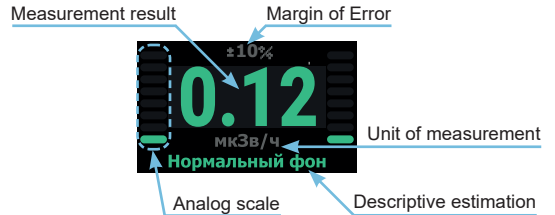
### Modes of measuring

- SEARCH Mode.** The sum measurement of dose rate of gamma radiation and the flux density of beta-particles, with results shown as a graph.
- MEASURE Mode.** Separate measurement of gamma radiation dose and flux density of beta particles.
- EDR Mode in white** means the detected radiation levels are normal. The sum measurement of the dose rate of gamma radiation and the flux density of beta particles.
- EDR Mode showing in yellow** indicates the detected radiation levels as elevated and are higher than threshold Gamma 1
- EDR Mode flashing in red** means the detected radiation levels are dangerous and are higher than threshold Gamma 2
- DOSE Mode is ON for User 1**
- DOSE Mode is ON for User 2**
- DOSE Mode is ON for User 1** blinking in red means the Dose Threshold for User 1 has been reached.
- DOSE Mode is ON for User 2** blinking in red means the Dose Threshold for User 2 has been reached.
- Settings menu**

### How dangerous?

Different levels of ionizing radiation present different degrees of danger or they may be just a natural background radiation (coming mostly from soil and space). As a general rule, an increase in measurement by 0.2  $\mu\text{Sv/h}$  above the established natural background radiation is considered an excess or "elevated". You should be aware of where these readings are coming from.

### Measured results



**Measurement result** is a numerical value of level of radioactivity.

**Descriptive Estimation** has 3 phases: "Normal Bgnd." / «Elevated Bgnd.» / "Dangerous Bgnd." (Bgnd. is short for Background).

**Analog Scale** displays the level of radioactivity on a logarithmic scale.

**Unit of measurement** displays the units of measurement selected in the Settings:  $\mu\text{Sv/h}$ ,  $\mu\text{R/h}$ , CPS, CPM or their multiples mSv/h, mR/h, R/h, KCPS, KCPM.

**Margin of Error** - if set to "Relative" (under Settings) then the margin error is displayed as a percent of the nominal value. If set to "Absolute" then the margin of error is displayed in the same units as the measurement. If set to "Do not show" then the margin of error will not be displayed on the screen.

## TECHNICAL SPECIFICATIONS

|                                                                    |                                      |                             |
|--------------------------------------------------------------------|--------------------------------------|-----------------------------|
| Dose rate measurement range                                        | $\mu\text{Sv/h}$                     | 0.01 — 9999                 |
| Dose measuring range                                               | Sv                                   | 0 — 9.99                    |
| Flux density measurement range of beta particles                   | $\text{cm}^{-2}\cdot\text{min}^{-1}$ | 10 — 999000                 |
| Range of detectable energy gamma radiation                         | MeV                                  | 0.05 — 3                    |
| beta radiation                                                     |                                      | 0.1 — 3.5                   |
| Margin of error for dose rate                                      | %                                    | ± 15                        |
| Margin of error for beta-particles, where "P" is a measured result | %                                    | ± (20+1000 / P)             |
| Measurement time                                                   | seconds                              | 1                           |
| Connection type                                                    |                                      | USB (TYPE-C), Bluetooth     |
| Energy source                                                      |                                      | Lithium polymer battery     |
| Data saves in memory                                               |                                      | 500                         |
| Continuous operation time                                          | hours                                | 100                         |
| Temperature range                                                  | °F / °C                              | -4 to +104 / -10 to +40     |
| Unit Size                                                          | in / mm                              | 46 x 19 x 8 / 116 x 48 x 19 |
| Weight                                                             | oz / gr                              | 2.8 / 80                    |

### INCLUDED IN THE PACKAGE

- RADEX OBSIDIAN Radiation Dosimeter device
- USB-C cable
- User manual
- Warranty replacement



The on-screen images (icons) shown in this manual may differ from the actual images on the screen.



The technical specifications and/or any features of this device are subject to change by the manufacturer without notice.