Ecotest MKS-05

Ecotest Terra-P MKS-05 Geiger Counter Dosimeter Radiometer User Manual

1. Overview

The Ecotest Terra-P MKS-05 is a versatile dosimeter-radiometer designed for everyday use to assess radiation safety. It measures gamma background levels, accumulated dose, and estimates beta contamination. Its compact size and durable yellow housing make it suitable for various environments, including homes, workplaces, vehicles, and for checking household items, clothing, construction materials, and food products.

This device is based on the professional MKS-05 TERRA model, which is utilized by the Ukrainian army, ensuring reliability and accuracy. It features five independent measuring channels with alternating data indication on a liquid crystal display, automatic setting of measurement intervals and ranges, and a two-tone audio alarm for exceeded programmed threshold levels. Audio signaling of each detected gamma-quantum and beta-particle is also included.

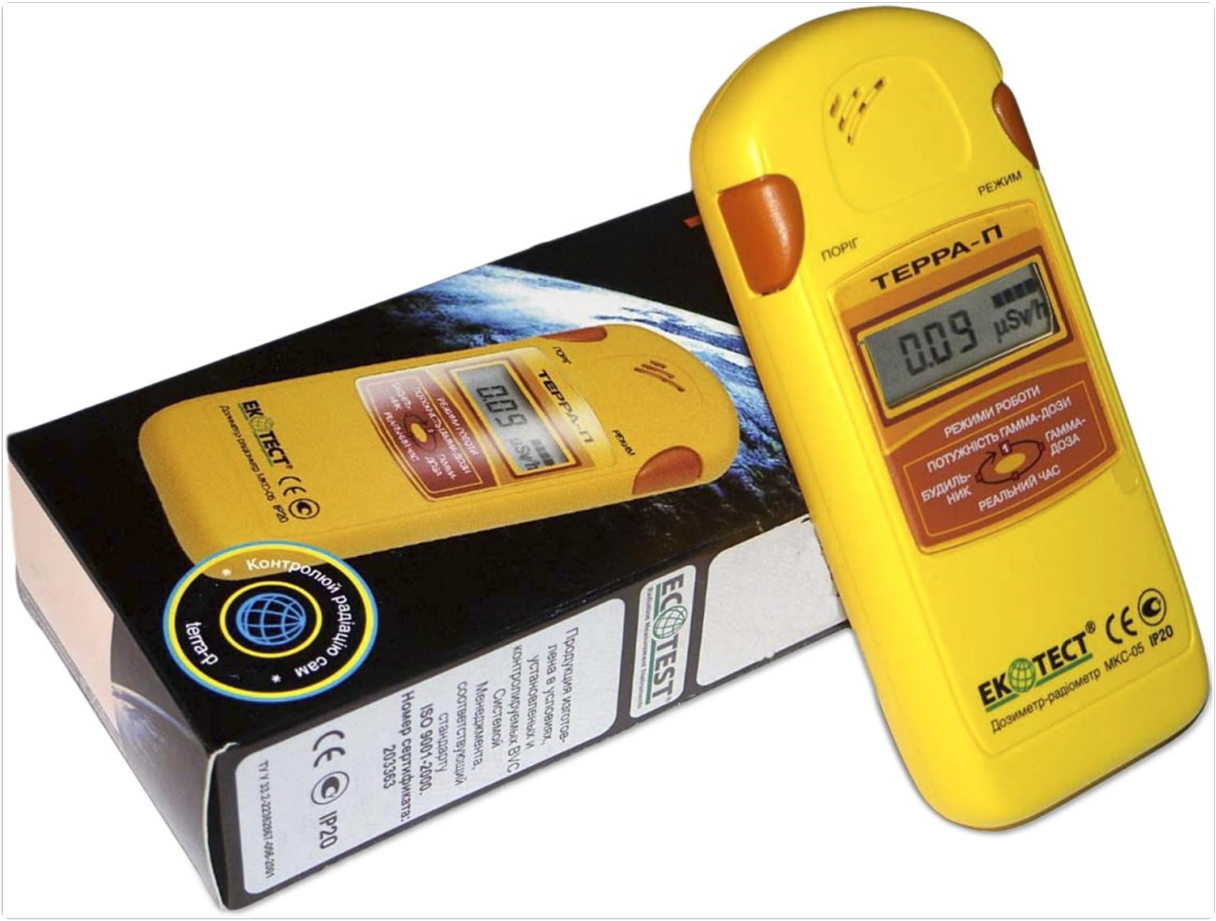

Figure 1: Ecotest Terra-P MKS-05 Geiger Counter with original packaging.

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Video 1: An overview of the Ecotest Terra-P MKS-05 Geiger Counter, demonstrating its features, modes, and physical characteristics.

2. Product Components and Dimensions

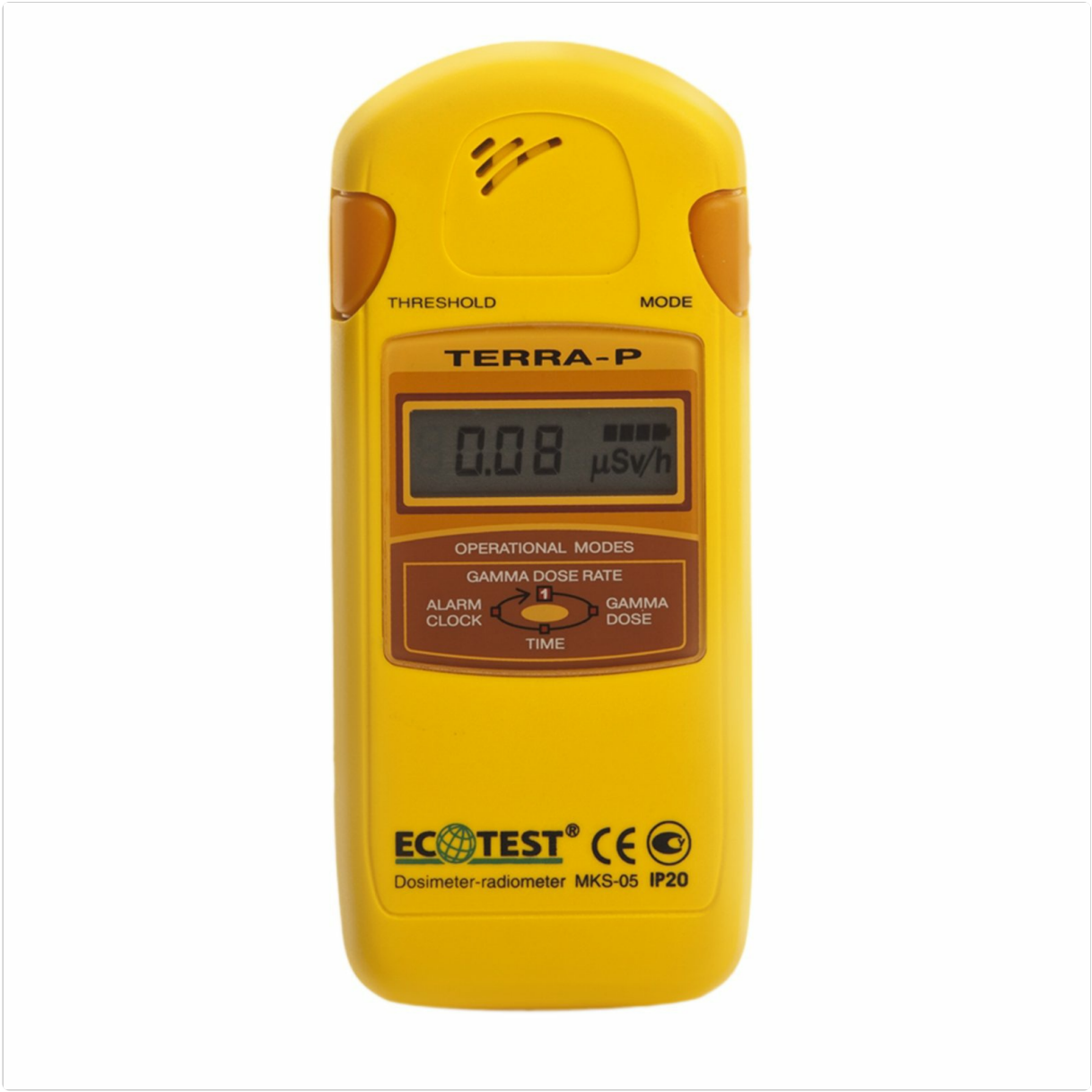

Figure 2: Front view of the Ecotest Terra-P MKS-05 with approximate dimensions.

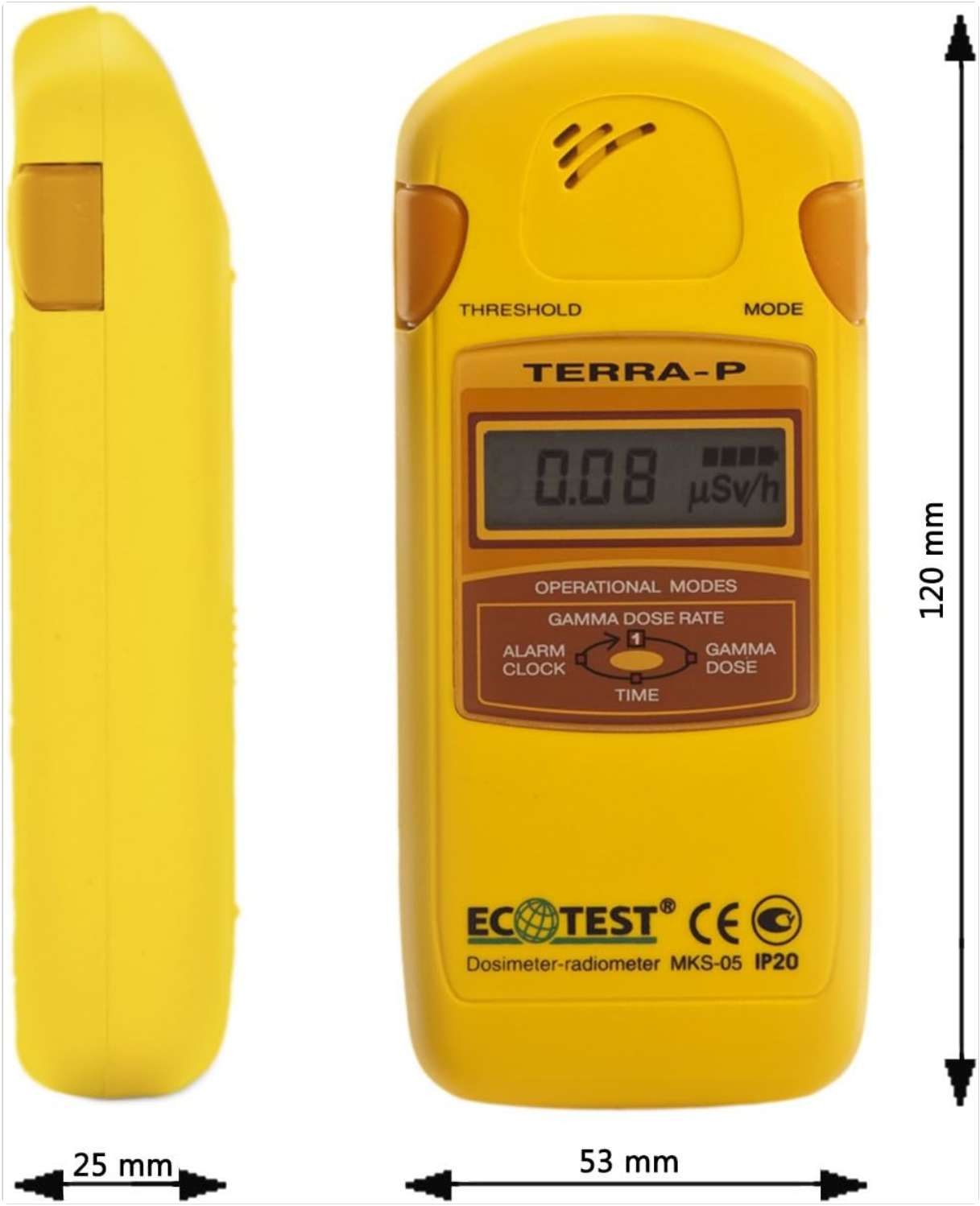

Figure 3: Side view of the Ecotest Terra-P MKS-05.

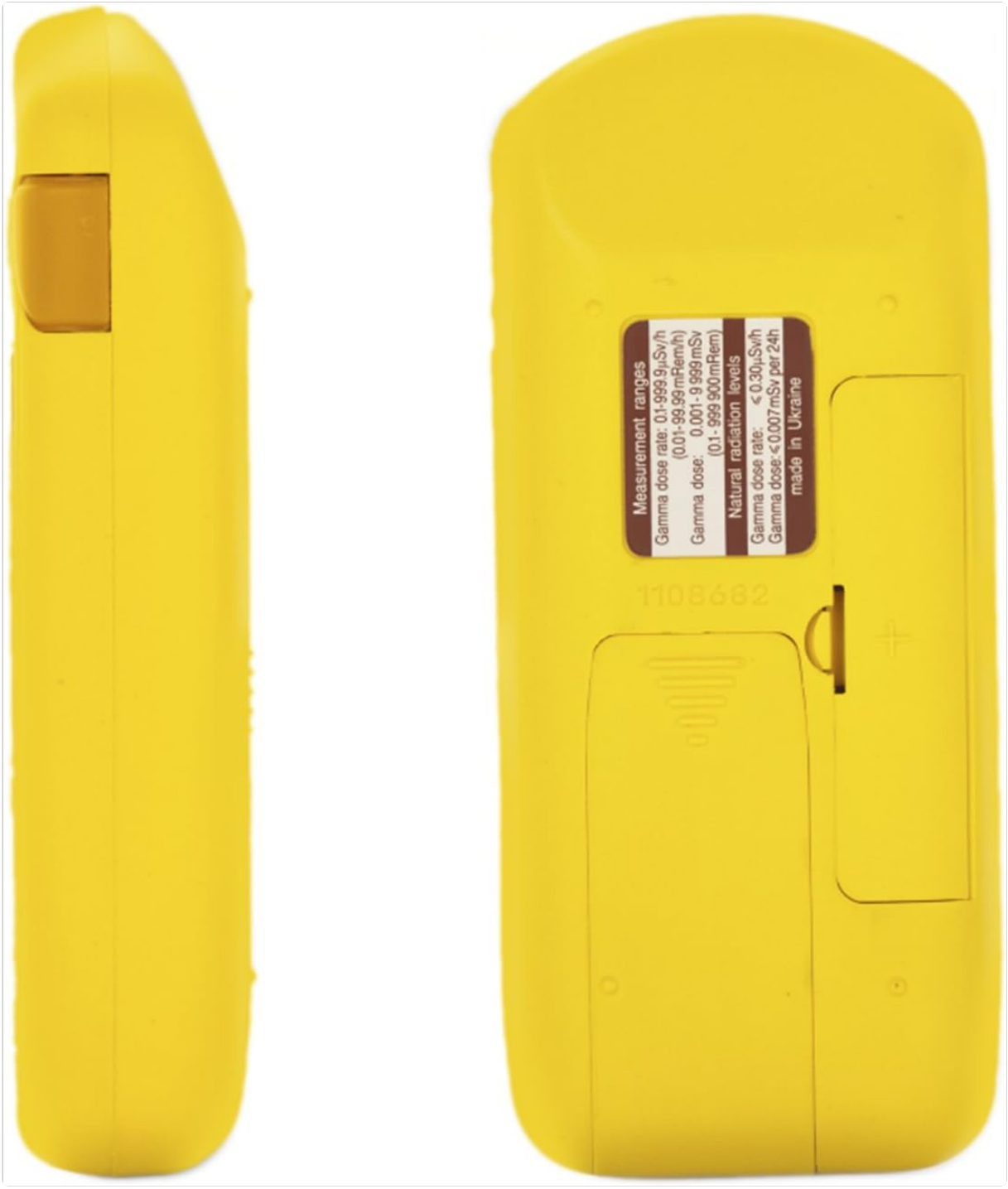

Figure 4: Back view of the Ecotest Terra-P MKS-05, highlighting the battery compartment and measurement range sticker.

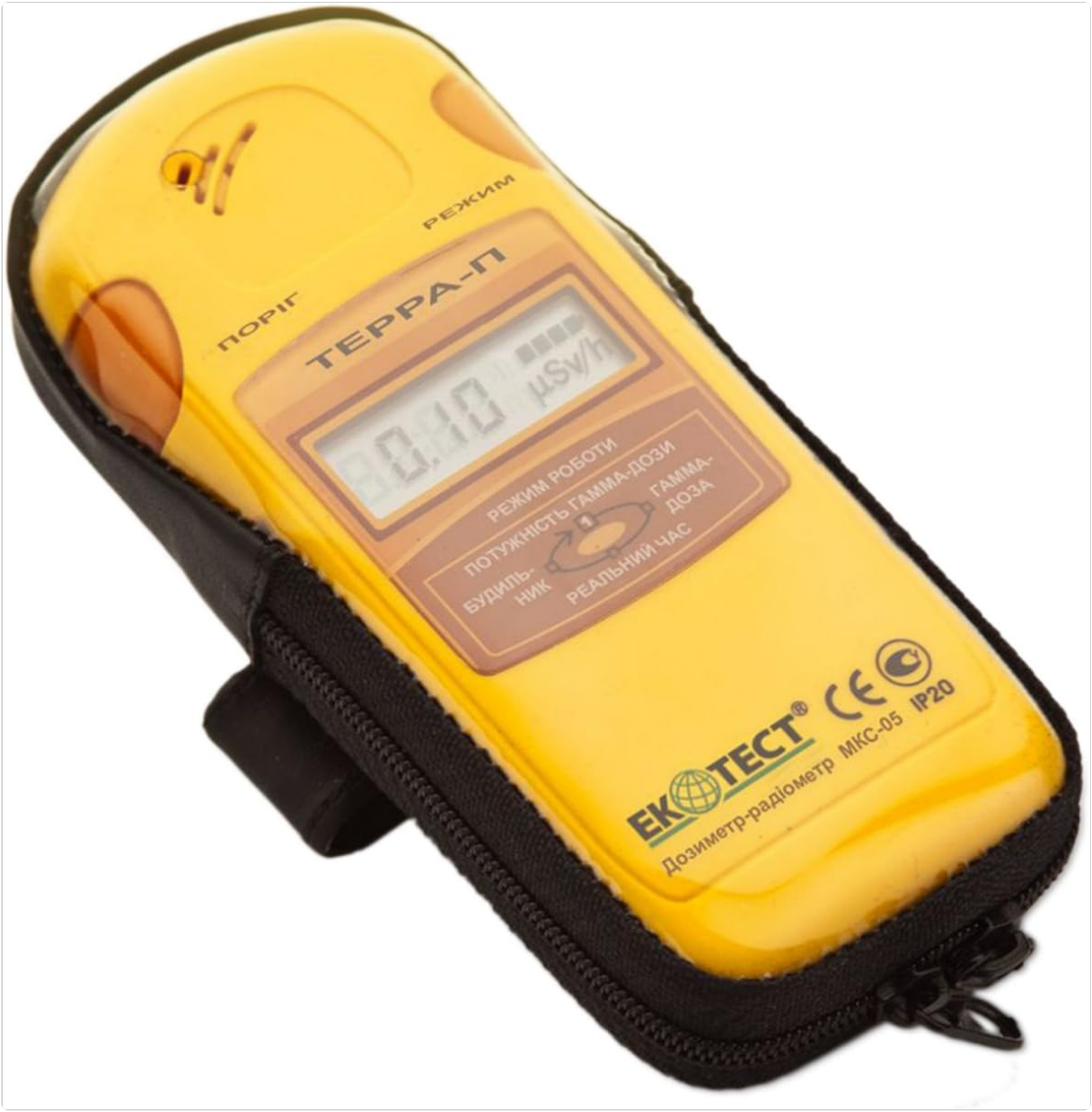

Figure 5: Ecotest Terra-P MKS-05 in its durable carrying case with a belt clip.

3. Setup

3.1 Battery Installation

1. Locate the battery compartment cover on the back of the device.
2. Slide the cover open.
3. Insert two (2) AAA alkaline batteries, ensuring correct polarity.
4. Close the battery compartment cover securely.

The device is designed for efficient power consumption, with batteries lasting a very long time. The battery indicator on the display shows the remaining power (4 bars for full charge).

3.2 Beta Radiation Detection

To enable beta radiation detection, carefully remove the back cover of the device. This exposes the Geiger tube, making it more sensitive to beta particles. Reattach the cover when beta detection is not required or for general gamma measurements.

4. Operating Instructions

4.1 Power On/Off and Hibernation

- To turn the device on, press the **MODE** button. The display will activate and begin showing gamma dose rate measurements.
- The Terra-P MKS-05 does not have a traditional 'off' button. When not actively in use, it enters a hibernation mode to conserve battery power. In this mode, the display turns off, but the device continues to monitor and accumulate dose data.
- To reactivate the display from hibernation, simply press the **MODE** button again.

4.2 Measurement Modes

Press the **MODE** button repeatedly to cycle through the following operational modes:

1. **Gamma Dose Rate:** Displays the current gamma radiation level in microsieverts per hour (µSv/h). This is the primary measurement mode for real-time radiation assessment.
2. **Accumulated Dose:** Shows the total radiation dose accumulated since the last battery installation or reset. This feature is crucial for tracking personal exposure over time. The device continuously measures accumulated dose even in hibernation.
3. **Clock:** Displays the current time.
4. **Alarm Clock:** Allows you to set an alarm time.

4.3 Setting the Threshold and Audio Alarm

- The device features an adjustable threshold for gamma dose rate. To set the threshold, press and hold the **THRESHOLD** button.
- Use the **MODE** button to adjust the threshold value.
- Once the desired threshold is set, release the **THRESHOLD** button.
- If the measured radiation level exceeds the set threshold, a loud two-tone audio alarm will sound, and the display will activate (if in hibernation) to alert the user.
- The device also provides an audio signal for each detected gamma-quantum and beta-particle, which can be turned on or off.

5. Maintenance

5.1 Battery Replacement

When the battery indicator shows low power, replace the two (2) AAA alkaline batteries as described in the Setup section. Replacing batteries will reset the accumulated dose measurement.

5.2 Cleaning

Clean the device with a soft, dry cloth. Do not use abrasive cleaners or solvents, as they may damage the housing or display.

6. Troubleshooting

- **Device not turning on:** Ensure batteries are correctly installed and fully charged. Replace with new batteries if necessary.
- **Inconsistent readings or sudden spikes:** While the device is designed for accuracy, environmental factors can cause fluctuations. If readings are consistently erratic, ensure the device is away from potential interference sources. If issues persist, contact customer support.
- **Alarm not sounding:** Check if the audio alarm is enabled in the settings. Ensure the threshold is set

appropriately for the desired alert level.

- **Display issues:** If segments of the LCD display are missing or intermittent, this may indicate a manufacturing defect. Contact customer support for assistance.

7. Specifications

Feature	Specification
Model Number	MKS-05 (Part Number: 4151066)
Measurement Ranges (Gamma Dose Rate)	0.1 - 999.9 µSv/h (0.01 - 99.99 mR/h)
Measurement Ranges (Gamma Dose)	0.001 - 9999 mSv (0.1 - 999.9 R)
Natural Radiation Background	0.10 - 0.16 µSv/h
Gamma Dose Threshold	0.30 µSv/h (default, adjustable up to 1 mSv/h)
Battery Type	2 x AAA Alkaline batteries
Item Weight	6.9 ounces
Package Dimensions	5.7 x 3.1 x 1.8 inches
Color	Yellow
Material	Plastic
Manufacturer	SPPE "Sparing - Vist Center"

8. Warranty and Support

For warranty claims, technical support, or inquiries, please contact the manufacturer directly:

- **Manufacturer:** SPPE "Sparing - Vist Center"
- **Email:** sales@ecotest.ua
- **Website:** www.ecotest.ua

Please refer to your product's original documentation for specific warranty terms and conditions.