POLIMASTER

Personal Combined Radiation Detector/Dosimeter

PM1703MO-1

OPERATION MANUAL

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1 DELIVERY OPTIONS

Consult the following table to find out which modes and features enabled in your particular Personal Combined Radiation Detector/Dosimeter.
Enabled features are marked by a checked box.
Detector serial number: _____

Features and operation modes	**On☒/off☐**
Search mode (indication "µR/h")	☒
Measurement mode (indication µSv/h)	☐
Measurement mode (indication µR/h)	☒
Dose mode (indication µR)	☒
Auto calibration	☒
Possibility to adjust DER thresholds for other search and measurement modes	☐
Possibility to change values of the coefficient n (gamma)	☒
Possibility to enable/disable alarm types	☒
Audio alarm	☒
Vibration alarm	☒

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2 BEFORE YOU BEGIN

Thank you for purchasing a Polimaster Personal Combined Radiation Detector/ Dosimeter PM1703MO-1. Before operating this unit, please review this guide thoroughly and retain it for future reference.

The Personal Combined Radiation Detector/Dosimeter is designed to detect, search, and locate gamma-emitting radioactive sources. The detector is easily handled requiring only understanding of the basic parameters and settings for proper operation.

The device is intended for everyday or emergency use by firefighters, military, police, etc. It is designed for use in any area where radiation dose and dose rate are required to be measured, where exceeding the default dose and dose rate values requires an alarm. In addition, the device provides accumulated information about the accumulated dose and system analysis of the gathered dosimetric information.

3 PRECAUTIONS

1. Keep the instrument at least 4 inches from radio emitting sources, such as cell phones, to avoid false positives.
2. Avoid severe mechanical shocks and submerging the device into water.

4 GENERAL DESCRIPTION

The PM1703MO-1 belongs to Polimaster's new generation of highly sensitive, small and power-saving personal gamma combined radiation detectors/dosimeters. When ON the detector continuously monitors the environment for radiation and alerts the user with a visual, audio and/or vibrating alarm if a radiation source is detected or a radiation threshold is exceeded.

All operations history is stored in the device's permanent memory, protecting the data even when the battery is removed. The stored data can also be transferred from the PM1703MO-1 to a personal computer via its infrared interface.

The instrument is recommended for detecting and locating radiation sources in both indoor and outdoor environments.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation

4.1 Display and Control Buttons

The instrument is equipped with two control buttons located on its top panel:

• **MODE** button — (switching on the instrument; switching between operation modes; background level calibration; changing the device parameters in setup mode)

• **LIGHT** button — (switching on the backlight; enabling IR communications with a PC; changing the parameters in setup mode.)

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The LCD screen may display any of the following information:

- **gamma Dose Rate (DER)** in μR/h;
- **Dose (DE)** in μR;
- **n coefficient**: number of mean square deviations for the gamma threshold (also called "alarm multiplier");
- **Messages** "tSt", "CAL", "OL", "oFF" etc.;
- " " **sound alarm icon** (if sound alarm is enabled);
- " " **vibration alarm icon** (if vibration alarm is enabled);
- **Blinking "h" symbol —** indicates that there has been an alarm actuation and information about it hasn't been uploaded to a computer**;**
- **Blinking "S" symbol –** indicates that the search mode is currently on;
- **Critical battery discharge**: displayed when the battery voltage drops below 1.15 V.

An analog bar in the lower area of the LCD display indicates the time left until self-tests or background calibration are completed.

In the Search Mode, Measurement mode and Dose indication mode, the analog scale segments represent the dynamics of radiation environment change. The bar represents a relative excess of the measured value over the set alarm threshold.

For additional information, please contact Berkeley Nucleonics or Polimaster directly. 800-234-7858

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