

palmRAD Model PM1630 (PRD)

X-ray and Gamma Radiation Personal Dosimeter



X-ray and Gamma Radiation Personal Dosimeter PM1630 is a miniature electronic dosimeter capable of solving a wide range of personal dose monitoring tasks, including **measurement of personal dose equivalent (DE)** and **personal dose equivalent rate (DER)** of X-ray (continuous and pulsed) and gamma radiation. Also the dosimeter provides **wireless on-line data transfer and off-line transfer of instrument history events** to radiation monitoring system database of different institutions.

The **real time data transfer** capability allows to use PM1630 as a mean of control and indication of DER and DE during endovascular surgical procedures or other procedures with the use of radiation sources and to maintain a database and perform control of personnel exposure for the period of stay in an operating room using **Automated Personal Dosimetry System PM531**.

PM1630 dosimeters can be also integrated into **Automated Personal Dosimetry System PM530** for maintaining the instrument history database and monitoring personnel exposure.

Moreover, PM1630 is equipped with Bluetooth interface for integration with **Polismart®** application which enables **on-line indication** of the instrument data on a smartphone or tablet computer.

Features

- Small dimensions and light weight
- Single control button
- Digital indication, sound and LED alarms
- Three clips for different wearing options
- Resistance to cleaning and disinfection agents
- Wireless charging
- Data transfer via Bluetooth
- Function of automatic countdown and display in the Polismart® app of safe stay near radiation hazards

Application

- Medical personnel:
 - X-ray diagnostics
 - Interventional radiology
 - Radiation diagnostics and therapy
- Operators at radioisotope laboratories
- Medical physicists
- Customs and security officers working with X-ray inspection equipment
- Other professionals who work under the risk of X-ray and gamma radiation exposure

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SPECIFICATIONS

- **Dose equivalent (DE) measurement range:**
1.0 μSv - 10.0 Sv
- **DE measurement accuracy:** $\pm 15\%$
- **Dose equivalent rate (DER) measurement range:**
0.1 $\mu\text{Sv/h}$ - 1.0 Sv/h
- **DER measurement accuracy:** $\pm 15\%$
- **Energy range:** 15 keV - 1.5 MeV
- **Energy response relative to 0.662 MeV:**
- 29% ... +45%
- **Minimum pulse duration of X-ray and gamma radiation:** 2 ms
- **Thresholds:** 2 independent thresholds for both DE and DER
- **Alarm type:** visual and audible
- **Communication with digital devices:** Bluetooth
- **Automatic data logging:** 6000 data points
- **Possible wearing variants :**
 - in breast pocket (front clip)
 - on breast pocket (rear clip)
 - on any clothes item (with clip type "crocodile")
 - on the wrist (silicone band)
- **The color of PM1630 case:** for orders over 50 pcs, the color of the dosimeter case can be selected by the customer.
- **Power supply:** rechargeable battery (wireless charger provided)
- **Battery lifetime in run mode:**
 - ≥ 2 months with Bluetooth disabled and average dose rate up to 0.3 $\mu\text{Sv/h}$
 - ≥ 10 days Bluetooth enabled and average dose rate up to 0.3 $\mu\text{Sv/h}$
 - ≥ 8 h with Bluetooth enabled and average dose rate up to 1.0 Sv/h
- **Operating conditions:**
 - temperature: from -10 °C up to +50 °C
 - humidity: up to 98 % at +35 °C
 - atmospheric pressure: from 84 up to 106.7 kPa
- **Ingress protection:** IP67
- **Resistance to antiseptic:** yes
- **Drop test:** 1.5 m onto concrete surface
- **Dimensions:** 63 x 50 x 18 mm
- **Weight:** ≤ 50 g



 Wireless charging

PM1630 is equipped with Bluetooth module FCC ID: QQQ13, IC: 5123A-13.

The instrument is designed to meet the requirements of IEC 61526:2010, IEC 62743:2012 and ANSI N42.20.

Integration with APDS PM530 and APDS PM531



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