PoliSimeter™ ER
Electronic Personal Dosimeter

X-ray (continuous/pulsed) and gamma radiation personal dosimeter with an **extended range** of dose measurement.

PoliSimeter™ series of electronic personal dosimeters (EPDs) is the **next generation** of the well-known **PM1610 series** by Polimaster, which was a trusted solution on the market for nearly 15 years, with over 20,000 dosimeters sold. Building on the legacy of the PM1610, the PoliSimeter offers enhanced capabilities for the extended measurement of **personal dose Hp(10)** and **dose rate Ḣp(10)** of both continuous and pulsed X-ray and gamma radiation. The PoliSimeter is designed to meet the latest industry requirements and features a USB-C port for convenient connectivity and data transfer.

PoliSimeter ER model has an **extended range** of dose measurement of **up to 20 Sv** for use in high-radiation environments, providing critical safety and monitoring functionality.

Feature

Wide dose and dose rate measurement ranges
Long-life rechargeable battery: 500 hours
Measurement of pulsed photon radiation
Simple navigation with two large buttons
Audible, visual, and vibration alarms
USB-C communication with PC
Shockproof hermetic case
Small and lightweight

Applications

- Customs and border control
- Healthcare professionals
- Nuclear power plants
- Emergency services
- Police and security
- Industrial facilities
- First responders

Operation principle

The PoliSimeter EPDs allow the setting of two dose rate alarm thresholds and two dose alarm thresholds. The instruments continuously control the threshold levels and alert the user with audible, visual, and vibration alarms when any of them are exceeded. PoliSimeter automatically records and stores in its non-volatile memory up to 7500 dose rate and dose measurement history events. The dosimeter is manufactured in two models: the basic **PoliSimeter** model and the **PoliSimeter ER** model with an **extended range** of dose measurement of up to 20 Sv. The EPD is supplied with the user software for downloading measurement history to a PC, maintaining the personnel exposure database, and adjusting the settings of the dosimeter. The PoliSimeter dosimeters are also compatible with the **Automated Personal Dosimetry System** for maintaining the instrument history database and monitoring personnel exposure. **Important:** During long-term storage, the instrument battery may gradually discharge even when the instrument is switched off. Over time, deeply discharged batteries may experience a decrease in capacity. To prevent this, Polimaster recommends periodically charging the battery, at least once every six months.

Specification

Detector	Geiger-Mueller tube
Dose indication range	0.001 µSv to 24 Sv
Dose measurement range	0.05 µSv to 20 Sv
Dose rate indication range	0.01 µSv/h to 12 Sv/h
Dose rate measurement range	0.1 µSv/h to 10 Sv/h
Dose rate linearity (0.1 µSv/h to 1 Sv/h)	-13 % to +18 % *IEC 61526:2024 compliant*
Accuracy (Ref. ^{137}Cs at 300 µSv/h)	±5 %
Statistical fluctuations for dose and dose rate	*IEC 61526:2024 compliant*
Energy range	20 keV to 10 MeV
Combined energy and angular response (Ref. ^{137}Cs)	−29 % to +67 % (48 keV to 1.25 MeV; 0° to 60°) *IEC 61526:2024 compliant*
Pulsed radiation - pulse width - dose range	 >1 ms 10 µSv to 10 Sv
Alarms	visual, audible, vibration
Thresholds	2 independent thresholds for both dose and dose rate
Memory	7500 events
PC communication	USB-C
Power supply	built-in rechargeable battery

Battery lifetime	500 hours (typical) *When the average dose rate is not more than 0.2 µSv/h; backlight and alarms are activated for not more than 20 s per 24 hours
Ingress protection	IP65
Drop test	1 m (concrete surface)
Dimensions	58 × 58 × 20 mm
Weight	70 g
Operating temperature	–20 °C to 50 °C
Atmospheric pressure	84 to 106.7 kPa
Humidity	up to 98 % at 35 °C