



POLIMASTER[®]



Innovating Radiation Detection Technologies Since 1992

CONTINUOUS AND PULSE X-RAY AND GAMMA RADIATION PERSONAL DOSIMETER

PM1610B PM1610B-01



These electronic personal dosimeters are excellent instruments for personnel exposed to pulsed X-ray and gamma radiation.

The instruments provide measurement of dose equivalent and dose equivalent rate of continuous and pulsed X-ray and gamma radiation, as well as time of dose accumulation.

Devices have audible, visual and vibration alarms to warn the user when preset dose/dose rate threshold levels are exceeded.

For reading data from dosimeters the special software Personal Dose Tracker is provided. It allows to record and monitor radiation exposure of users of dosimeters.

The device is ready for use immediately after installing the battery.

PM1610B-01 version can be used with different types of wireless readers in compliance with ISO 15693.

Features

- ✧ Easy to use
- ✧ Measurement of pulse X-ray and gamma radiation with pulse duration 1 ms and up
- ✧ Dose rate measurement up to 10 Sv/h (1000°rem/h) and dose measurement up to 20°Sv (2000 rem)
- ✧ Two independent alarm thresholds for dose and dose rate
- ✧ Default settings for dose: threshold 1 – 5 mSv (500 mrem), threshold 2 – 10 mSv (1000 mrem)
- ✧ Audible, visual and vibration alarms
- ✧ Wide energy range from 20 keV to 10 MeV
- ✧ Settings can be controlled (blocked by the user to change) from a PC via USB
- ✧ Ability to display measurements in Sv or rem
- ✧ Turning off the alarm by pressing any button
- ✧ Shockproof hermetic case
- ✧ Light weight and small dimensions



Applications

- ✧ Firstresponders
- ✧ Customs and border patrol
- ✧ Medical professionals
- ✧ Radiological and Radionuclide isotope laboratories
- ✧ Professionals exposed to pulse radiation

ALARM

**PULSE
RADIATION**

MEASUREMENT



**USB
RF-ID**



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SPECIFICATIONS

Detector	Geiger-Mueller tube
Dose equivalent rate (DER) indication range	0.01 μ Sv/h - 12.0 Sv/h (1 μ rem/h - 1200 rem/h)
DER measurement range	0.1 μ Sv/h - 10.0 Sv/h (10 μ rem/h - 1000 rem/h)
DER threshold range (in all measurement range)	Two threshold levels
Dose equivalent (DE) indication range	0.001 μ Sv - 24.0 Sv (0.1 μ rem - 2400 rem)
DE measurement range: - continuous photon radiation (current) - pulsed photon radiation (pulse duration not less than 1 ms)	0.05 μ Sv - 20.0 Sv (5 μ rem - 2000 rem) 10 μ Sv - 20.0 Sv (1000 μ rem - 2000 rem)
DE threshold range (in all measurement range)	Two threshold levels Default settings for dose: - threshold 1: 5 mSv (500 mrem), - threshold 2: 10 mSv (1000 mrem)
Minimum pulse duration of X-ray and gamma radiation	1 ms at multiple exposure (more than 10 pulses) 10 ms at single exposure
Accuracy of DER measurement	$\pm(10 + 0.0015/\dot{H} + 0.0015\dot{H})$ %, where H - DER value in mSv/h
Accuracy of DE measurement in the range 0.05 μSv - 20.0 Sv	$\pm 20\%$
Energy range	20 keV - 10 MeV
Energy response relative to 0.662 MeV (¹³⁷Cs) in the DER and DE measurement mode, not more than	- 60% 20 keV - 33 keV; - 40% 33 keV - 48 keV; $\pm 30\%$ 48 keV - 3 MeV; $\pm 50\%$ 3 MeV - 10 MeV.
Communications	- USB interface - ISO15693 interface for PM1610B-01
Features	- PC communication via USB - Audio alarm - Visual alarm - Vibration alarm - Holder with clip
Automatic data logging	7500 data points
Power supply	Battery type LR03/AAA
Operating time on new battery in normal conditions	no less than 20 days
Low battery (partial and critical)	Indication on LCD
Operating conditions: - temperature range - pressure	-20 - +50°C 84 - 106.7 kPa
Case Protection Class	IP65
Dimensions	71x59x20 mm
Weight	90 g

Design and specifications of the device can be changed without further notice.