

ELECTRONIC PERSONAL DOSIMETER PM1300 PM1300-01

USED INDEPENDENTLY AND
AS PART OF APDS

Purpose

PM1300 is a compact direct-reading electronic personal dosimeter designed for real-time control of radiation situation and measurement of personnel exposure. The instrument may be used both for autonomous work and as a part of the Automated Personal Dosimetry System.

Functions

- Measurement of **dose equivalent** and **dose equivalent rate** of continuous and pulsed photon radiation
- Wireless data exchange via RF-interface (**PM1300**) and wired data exchange via USB-interface (**PM1300 and PM1300-01**)
- Alarming in case the preset dose or dose rate threshold is exceeded
- Recording up to 10 000 events in the history

Features

- Extended range of registered energies of photon radiation: from 15 keV to 20 MeV
- Long battery life: up to 3000 of hours from one power element
- Quick response to the dose rate changes
- RF-interface data exchange with personnel exposure monitoring system (PM1300)
- USB-interface for charging, recording and reading of data
- Remote control of personnel dose exposure while conducting radiation-hazardous works
- Can be supplied together with automated storage rack to collect, store, charge, read out and distribute dosimeters

Application

- Nuclear power plants
- Medical institutions
- Oil and gas industry
- Radiological and isotope laboratories
- Processing and transportation of radioactive materials



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Complies and exceeds the requirements of IEC 61526,
ANSI 42.20

Dosimeter specifications

- **Detector**
Energy compensated silicon PIN diode
- **Dose rate measurement range**
1 $\mu\text{Sv/h}$ – 10 Sv/h
- **Dose rate measurement accuracy**
 $\pm 15\%$
- **Dose measurement range**
1 μSv – 20 Sv
- **Dose measurement accuracy**
 $\pm 15\%$
- **Energy range**
15 keV – 20 MeV
- **Energy response** (relative to 0.662 MeV)
 - from 15 keV to 7 MeV $\pm 15\%$
 - from 7 MeV to 20 MeV $\pm 40\%$
- **Thresholds**
2 independent thresholds for both dose and dose rate
- **Memory:**
10000 records
- **Power supply:**
standard battery or NiMH accumulator (AAA)
- **Battery lifetime:** up to 90 days
- **Operation conditions:**
 - temperature from $-20\text{ }^{\circ}\text{C}$ up to $50\text{ }^{\circ}\text{C}$
 - humidity up to 95% at $40\text{ }^{\circ}\text{C}$
 - atmospheric pressure from 84 to 106.7 kPa
- **Drop test on concrete floor:**
1.5 m
- **Ingress protection:**
IP67
- **Dimensions:**
85 × 57 × 20 mm
- **Mass** (with battery):
 $\leq 95\text{ g}$



RF interface

PM1300 is equipped with a wireless data exchange module which allows:

- transmission of measurement results to the personnel exposure monitoring system
- automated registration of the personnel in exposure monitoring system
- remote control of the access, movement, location and duty hours of personnel in the restricted areas under issued radiological work permits
- integration to automatic access control systems

The reader may be located autonomously in different zones of the controlled areas and simultaneously receive data from several dosimeters in the acquisition range.



Reader specifications

- Operation frequency range:** 2.4 GHz
- Adjustable readout distance:** from 20 cm up to 10 m
- Output power:** 1mW
- PC communication:** USB, Ethernet, RS-485
- Number of stored events:** up to 50000
- Power supply:**
 - mains current or via USB-port from other devices
 - backup internal power supply: one AAA accumulator battery
- Operation conditions:**
 - temperature from $-10\text{ }^{\circ}\text{C}$ up to $50\text{ }^{\circ}\text{C}$
 - humidity up to 98% at $40\text{ }^{\circ}\text{C}$
 - atmospheric pressure from 84 to 106.7 kPa
- Ingress protection:** IP40
- Dimensions:** 100 × 100 × 50 mm
- Mass:** $\leq 0.4\text{ kg}$

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

Radmetron Ltd.
51, Skorina st., Minsk
220084 Republic of Belarus
phone: +375 17 33-66-860
+375 17 33-66-868
info@radmetron.com



radmetron.com



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