



## Electronic Personal Dosimeter PM1300

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 automatic personnel exposure monitoring system.

### Operation Principle

PM1300 dosimeter is designed for real-time control of the radiation situation and dose exposure of the personnel while conducting radiation-hazardous works. It may be used both for autonomous work and as a part of automated personnel exposure monitoring system.

### Functions

- Measurement of dose equivalent and dose equivalent rate of continuous and pulsed photon radiation
- Alarming in case preset dose or dose rate thresholds exceed
- Recording up to 10 000 events in the history
- Wireless data exchange via RF-interface and wired data exchange via USB-interface

### Advantages

- 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
- USB-interface for charging, recording and reading of data
- Possibility of 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

### RF interface

Dosimeter is equipped with a wireless data exchange module which allows automated registration of the personnel in exposure monitoring system and issuing personal radiological work permits; simultaneous transmission of measurement results to the personnel exposure monitoring system from several dosimeters; 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 and also may be built in different gadgets like turn gates, info desks, etc.

### Automated storage rack

Dosimeter maintains its operation with automated storage rack for the group dosimeter storage which enables storing and controlling the access to the set of personal dosimeters by means of authorization in facial recognition system or entering access code, remote data transmission and adjusting parameters of the instruments, automated registering in exposure monitoring system and issuing personal radiological work permits, battery recharging.

### Application

- System dosimeters
- Illicit Trafficking of Nuclear and Radioactive Materials
- Personnel Exposure

### Standards Compliance

Complies and exceeds the requirements of IEC 61526, ANSI 42.20

### Specifications

Detector	Energy compensated silicon PIN diode
Average dose equivalent rate of pulsed photon radiation measurement range	10 mSv/h -10 Sv/h
DER indication range	0.01 $\mu$ Sv/h – 10 Sv/h
Dose equivalent rate (DER) measurement range	1 $\mu$ Sv/h - 10 Sv/h
DER measurement accuracy	$\pm$ 15 %
DE indication range	0.01 $\mu$ Sv – 20 Sv
DE measurement range:	
1 $\mu$ Sv – 20 Sv	
DE measurement accuracy	$\pm$ 15 %

Energy range	15 keV - 20 MeV
Energy response relative to 0.662 MeV:  from 15 keV to 7 MeV    ±15%  from 7 MeV to 20 MeV   ±40%	
Thresholds	2 independent thresholds for both dose equivalent and dose equivalent rate
Memory	10000 records
Drop test on concrete floor	1.5 m
Ingress protection	IP67
Dimensions	85 x 56 x 20 mm
Weight	≤ 84 g
Power supply	One AAA/LR03 battery
Battery lifetime:  at normal conditions up to 3000 hours	
PC communication	USB, wireless RF interface
Operating temperature	from -20 to +50 °C
Humidity	up to 95 % at +40 °C
Atmospheric pressure	from 84 to 106.7 kPa
RF-reader operation frequency range	2.4 GHz
RF-reader adjustable readout distance	from 20 cm up to 10 m
RF-reader output power	1mW
RF-reader communication with PC	USB, Ethernet, RS-485
RF-reader number of event	up to 50 000

RF-reader power supply	mains current or via USB-port from other devices; backup internal power supply - one AAA accumulator battery
RF-reader ingress protection rate	IP40
RF-reader dimensions and weight	100x100x50 mm., not more than 0.4 kg
<p>RF-reader operation conditions:</p> <p>temperatures            from minus 10 up to plus 50°C</p> <p>humidity                up to 98% with plus 40°C</p> <p>atmospheric pressure    from 84 to 106.7 kPa</p>	