

Model RP Personal Radiation Detector



Features

RadPavise | Personal Radiation Detector is a next-generation all-digital personal radiation detector that combines four functions in one:

- Dose Equivalent Rate Meter
- Accumulated Dose Meter
- Radiation Survey Meter
- Radiation Source Locator



This pocket-sized, direct-reading PRD accurately detects and measures radiation exposure for workers and responders in potentially hazardous environments.

RadPavise | Personal Radiation Detector uses a YSO scintillation detector combined with a state-of-the-art silicon photomultiplier (YSO+SiPM) and multi-voltage threshold (MVT) algorithm to detect a wide range of radiation doses.

Proportional, real-time detection and measurement provide meaningful readouts that focus on real-world applications. The fast response and wide dose rate range maximize the safety of your team. Intuitive navigation allows users to adjust settings in the field.

The unique, high-contrast OLED display provides a clear indication of the wearer's equivalent dose rate, accumulated dose, and count rate. The search interface can also be used as a survey meter to locate the source of radiation.

RadPavise | Personal Radiation Detector is designed to meet the needs of emergency responders and radiation protection personnel across the United States.

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Specifications

Feature	Parameter
Radiological	
<i>Detector</i>	YSO(Ce) scintillator + SiPM
<i>Type of Radiation Detected</i>	Gamma; X-ray
<i>Energy Range</i>	20 keV–3 MeV
<i>Dose Rate Range</i>	1 μ rem/h–100 mrem/h (0.01 μ Sv/h–1 mSv/h)
<i>Integrated Dose Range</i>	1 μ rem–10,000 rem (0.01 μ Sv–100 Sv)
<i>Sensitivity</i>	340 cps/mrem/h (34 cps/ μ Sv/h) (\propto Cs-137)
<i>Energy Response</i>	$\leq \pm 20\%$ (\propto Cs-137)
<i>Dose Rate Linearity</i>	$\leq 10\%$ up to 100 mrem/h (1 mSv/h)
<i>Accuracy</i>	$\pm 5\%$ (\propto Cs-137)
<i>Alarm Threshold</i>	User-set values for dose rate: 100 μ rem/h–100 mrem/h (1 μ Sv/h–1 mSv/h)
<i>Alert Options</i>	Audible (80 dB at 12 in / 30 cm) Visual (LED and display) Vibrating
<i>Alarm Response Time</i>	< 2 seconds
<i>Overload Display</i>	Activation when > 100 mrem/h (1 mSv/h) Overload indication up to 1,000 rem/h (10 Sv/h)
Electrical and Mechanical	
<i>Communications</i>	MicroUSB and RadSuite-Dose (Mac/PC software)
<i>Ergonomics</i>	Upward facing, tilted screen
<i>Power Supply</i>	Rechargeable lithium-ion battery
<i>Battery Life</i>	Typically 200 hours in background field
<i>Display</i>	Backlit LCD
<i>Dimensions</i>	2.7 x 1.8 x 0.7 in / 69 x 46 x 17 mm
<i>Weight</i>	2.1 oz / 60 g
<i>Initialization Time</i>	< 2 seconds
Environmental	
<i>Operating Temperature</i>	-4 °F to 122 °F / -20 °C to 50 °C
<i>Storage/Transport Temperature</i>	-4 °F to 158 °F / -20 °C to 70 °C
<i>Relative Humidity</i>	$\leq 90\%$ RH (non-condensing)
<i>IP Rating</i>	IP65
<i>EMI/EMC</i>	Exceeds IEC 61526 requirements
<i>FCC ID</i>	2AC7P-110

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Features

Digital data acquisition

- All Digital solid-state detection

High-performance detection design

- High-performance YSO crystal
- Miniaturized SiPM
- High-speed chip enables fast response and the smallest dead time in industry
- Patented MVT digital signal processing technology provides excellent performance and stability
- Background radiation interference virtually eliminated

Rapid response

- Full-range reading and alarm response in less than 2 seconds
- High sensitivity allows for earlier detection
- Audible output quickly alerts responders of rapidly changing radiation levels
- Real-time, active self-reading

Quality control system

- Auto-calibration
- Virtual elimination of false alarms
- Ability to discriminate between background and man-made source
- Programmable chips enable firmware updates and system upgrades
- Ultra-low power consumption
- High system stability and reliability
- Accurate and reliable data
- Precise quantitative analysis

Benefits

- As an active self-reading device, both dose rate and accumulated dose are measured in real time, enabling users to always be aware of current exposure
- Large OLED display offers user readability in dark or bright environments
- Three types of alarms alert users in a multitude of ways: vibrating, audible, and visual
- Alarm is either preset or user programmable through entire measurement range
- Intuitive menu-driven navigation allows user to adjust settings in the field
- Easy one-handed operation with just two buttons, allowing total control with a thumb
- Proportional, real-time detection and measurement provide meaningful readouts that focus on the awareness and safety of the user during critical times
- Patented MVT sampling method resulting in no signal loss and high signal-to-noise ratio
- Low-power CMOS digital electronics combined with digital silicon photomultiplier chip (SiPM)
- Dose and dose rate alarms provide additional awareness of high radiation levels