

# FEATURES

## Real-Time Alarm

Audible, visual, and vibrating alerts



## Data Log and Export

Software available for Mac and PC

## All Digital

High system stability and reliability



## Pager-Like Design

Unobtrusive and convenient

## Intuitive Use

Easy two-button navigation



## Clear Indication of Exposure



Both dose rate and accumulated dose are measured in real time, enabling users to be aware of their current exposure.

# CORE TECHNOLOGY

Each device houses a YSO scintillator coupled with an SiPM array using the MVT algorithm to detect and measure radiation.

## YSO

*Yttrium Orthosilicate*

Yttrium orthosilicate (YSO) is a crystal with excellent scintillation properties, such as high light output, high linear attenuation coefficient, short decay time, stable chemical and physical properties, and resistance to radiation damage.

## SiPM

*Silicon Photomultiplier*

We utilize a silicon photomultiplier (SiPM) to convert light signals from the scintillator to electrical signals for digitization. SiPMs attain the same gain as photomultiplier tubes (PMTs) and offer many advantages over other them, including low operation voltage, rugged structure, compact size, and magnetic insensitivity.

## MVT

*Multi-Voltage Threshold*

To directly digitize scintillation pulses with virtually no loss of information, we employ our patented multi-voltage threshold (MVT) data sampling algorithm, which achieves wide dynamic range, shortened response time, and broad measurement range.

## CONTACT US

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# Radfarge II

Electronic Personal Dosimeter



Engineering a Safer World



RadTarge II is a series of all-digital electronic personal dosimeters that detect gamma and X-rays, combining four functions in one:

- Dose equivalent rate meter
- Accumulated dose meter
- Active self-reading dose meter
- Active self-alarming dose meter

This pager-like, direct-reading dosimeter accurately detects and measures radiation exposure for workers and responders in potentially hazardous environments. The upward-facing, backlit display offers users readability in dark or bright environments.

RadTarge II is designed to process routine personnel dosimetry on which occupational dose of record is based. A tamper-proof label prevents users from opening the instrument, ensuring operational integrity for compliance and liability concerns.

## MODELS

**D300**

### Wide range

For strong radiation fields such as irradiation processing, accelerator centers, and nuclear power plants

**D700**

### High sensitivity

For weak radiation fields such as nuclear medicine centers, radiology departments, and research labs

**D900**

### High dose rate

For strong radiation fields such as irradiation processing, accelerator centers, and nuclear power plants

RadTarge II D300

RadTarge II D700

RadTarge II D900

### Radiological

|                            |   |  |  |
|----------------------------|---|--|--|
| Detector                   | YSO scintillator + SiPM   |  |  |
| Type of Radiation Detected | Gamma, X-ray  |  |  |
| Energy Range               | 30 keV–1.5 MeV  | 20 keV–3 MeV   |  |
| Dose Rate Range            | 50 $\mu\text{rem/h}$ –500 $\text{mrem/h}$<br>(0.50 $\mu\text{Sv/h}$ –5 $\text{mSv/h}$ )   | 1 $\mu\text{rem/h}$ –100 $\text{mrem/h}$<br>(0.01 $\mu\text{Sv/h}$ –1 $\text{mSv/h}$ ) | 10 $\mu\text{rem/h}$ –10 $\text{rem/h}$<br>(0.1 $\mu\text{Sv/h}$ –100 $\text{mSv/h}$ ) |
| Integrated Dose Range      | 1 $\mu\text{rem}$ –10,000 $\text{rem}$ (0.01 $\mu\text{Sv}$ –100 $\text{Sv}$ )  |  |  |
| Sensitivity                | 90 $\text{cps/mrem/h}$<br>(9 $\text{cps}/\mu\text{Sv/h}$ )  | 340 $\text{cps/mrem/h}$<br>(34 $\text{cps}/\mu\text{Sv/h}$ )                           | 10 $\text{cps/mrem/h}$<br>(1 $\text{cps}/\mu\text{Sv/h}$ )                             |
| Energy Response            | $\leq \pm 40\%$   | $\leq \pm 20\%$  | $\leq \pm 20\%$ @ 20 keV–1.5 MeV<br>$\leq \pm 50\%$ @ 1.5 MeV–3 MeV                    |
| Dose Rate Linearity        | $\leq 10\%$   |  |  |
| Accuracy                   | $\pm 5\%$ ( $\propto$ Cs-137)   |  | $\pm 10\%$ ( $\propto$ Cs-137)   |
| Alarm Threshold            | User-set values for dose rate from 100 $\mu\text{rem/h}$ (1 $\mu\text{Sv/h}$ )  |  |  |
| Alert Options              | Audible (80 dB at 12 in / 30 cm), visual (LED and display), and vibrating   |  |  |
| Alarm Response Time        | < 8 s   | < 2 s  | < 6 s  |
| Overload Display           | Activation when > 100 $\text{mrem/h}$ (1 $\text{mSv/h}$ )<br>Overload indication up to 1,000 $\text{rem/h}$ (10 $\text{Sv/h}$ ) |  |  |

### Electrical and Mechanical

|                       |  |
|-----------------------|--|
| Communications        | MicroUSB and RadSuite-Dose (Mac/PC software) |
| Power Supply          | Rechargeable lithium-ion battery             |
| Battery Life          | Typically 200 h in background field          |
| Display               | Backlit LCD                                  |
| Weight                | 2.1 oz (60 g)                                |
| Dimensions            | 2.7 x 1.8 x 0.7 in (69 x 46 x 17 mm)         |
| Operating Temperature | 32–122 °F (0–50 °C)                          |
| IP Rating             | IP65   |
| FCC ID                | 2AC7P-110                                    |

### All Digital

All-digital technology unlocks the potential of digital signal processing (DSP) to provide state-of-the-art architecture at a fraction of the cost.

### Modularity in Design

Enables adaptive configurations from simple to extremely complex measurement and imaging solutions.

### Transformative

Our transformative technology provides inspiration to exceed the perpetual research and development threshold.