

Gamma RAE IIR

Radiation Detector and Dosimeter in One



The **GammaRAE II R** is a gamma radiation detector and full-range dosimeter in a single instrument. Designed specifically to meet the needs of first responders, it has the rapid response of a detector and the accurate dose measurement of a dosimeter.

- Combined Detector and Dosimeter**
- Intrinsically Safe**
- Immersible**
- Loud Alarm**
- Dose Accumulation**

Applications

- Customs and border patrols
- Law enforcement
- Security officers in nuclear power facilities, banks, government laboratories, medical facilities
- Military
- Government agencies
- HazMat teams
- Fire departments



Key Features

- Sensitive CsI scintillator for excellent search capability and fast response
- Energy-compensated PIN diode sensor for high dose rate range and accurate dosimeter capabilities
- Prominent visible, audible and vibration alarms
- Alerts first responders to radioactive threats
- Accurately measures accumulated dose to the wearer
- Immersible in water for easy decontamination
- Top-mounted, invertable display
- Continuous digital readout in Rem/hour ($\mu\text{R/h}$ & mR/h) or in Sievert/hour ($\mu\text{Sv/h}$ & mSv/h) and counts per second (cps)
- Two operation keys, simple intuitive programming
- Long calibration life
- Two AA alkaline batteries last up to 600 hours
- Large, 30,000-point datalog capacity, downloaded via cable-free Bluetooth® connection

Specifications

Detector Specifications

Sensor

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| Radiation Sensors | 3cc CsI (TI) with Photodiode (Low channel) Energy-Compensated PIN Diode (High channel) |
| Energy Range | 0.06 to 3.0 MeV |
| Dose Equivalent Rate (DER) Range for ¹³⁷Cs | 1 µR/h to 600 R/h (0.01 µSv/h to 6 Sv/h) |
| Accuracy of DER | ±20% |
| Dosage Range | 1 µR to 999.9 R (0.01 µSv to 9.9 Sv) |
| Background Reference | Background level reference set automatically on start-up (Search Mode only), plus user-initiated as needed |
| Calibration | None required. Periodic functional test recommended using 1 µCi and 16 µCi ¹³⁷ Cs check sources. Factory calibration available if needed. |

Alarms

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| Time to Alarm | <2 seconds |
| Alarms | <ul style="list-style-type: none">• Loud audible buzzer (85+ dB @ 30 cm)• Built-in vibration alarm• Highly visible LED lights on both sides of LCD graphic display |
| Alarm Settings | <p>Dose Rate Search Mode: Alarm threshold based on variations in local background level</p> <p>Safety Mode: User-programmable low and high alarm thresholds based on dose rate</p> <p>Dose User-programmable low and high alarm thresholds based on dose</p> <p>Stay Time: Alarms vary by time (3 min to 2 hrs, once per minute; <3 min, once every 5 sec; 0 min and beyond, same as dose alarm)</p> |

Datalogging And Communication

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| Datalog Size | 30,000 data points (20 days at 60-second intervals) |
| Datalog Modes | Continuous: Logs data at all times Event-Driven: Starts logging data on alarm |
| Datalog Interval | User programmable, 1 to 3,600 seconds |
| Communication | Built-in Bluetooth® radio interfaces with computer for datalog download and configuration changes |

Power

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| Battery | 2 AA alkaline batteries |
| Operating Period | Up to 600 hours |

Operating Environment

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| Temperature | -20° C to 50° C (-4° F to 122° F) |
| Temperature Alarm | Temperatures above 50° C (122° F) will cause a high-temperature error message |
| Humidity | 0% to 95% (non-condensing) |
| Shock Resistance | Passes drop test from 1.5 m (59") |

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| IP Rating | IP-67 (immersible) |
| Intrinsic Safety | Certified to meet Class I, Div. I, Groups A, B, C, D, T4 ATEX II IG EEx ia IIC T4 |
| Physical Characteristics | |
| Display | Graphic LCD with 1.2" x 0.75" (30.5 mm x 19 mm) viewable area can be flipped for view by user; Radiation intensity displayed in cps or dosage rate in divisions of R/h or Sv/h |
| Direct Readout | Dose rate, peak, min, total dose, battery status, time, temperature |
| Ergonomics | Nonslip rubber housing with grippable ridges securely fits hand or glove |
| Keypad | 2 operation/program buttons |
| Size | 4.92" x 2.68" x 1.38" (125 mm x 68 mm x 35 mm) |
| Weight | 9.5 oz (270 g) |
| Attachments | Rugged metal belt clip and wrist strap |

*Specifications are subject to change

GammaRAE II R Kit includes:

- GammaRAE II R personal radiation detector/dosimeter
- Belt clip
- 2 AA alkaline batteries
- Wrist strap
- User's guide
- Calibration certificate
- ProRAE Studio Radiation software

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| GammaRAE II R Standard Kit | 047-0501-000 |
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| GammaRAE II R Rechargeable Kit | 047-0601-000 |
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