



GammaRAE II R

Radiation Detector and Dosimeter in One

Gamma radiation detector and full-range dosimeter in a single instrument

GammaRAE II R is two instruments in one: it has the rapid response of a detector and the accurate dose measurement of a dosimeter. It is designed specifically to meet the needs of first responders.

Detector Meets Dosimeter

The GammaRAE II R contains two separate sensors. The Cesium Iodide (CsI) scintillator provides a fast, two-second response to radiological threats, while the energy-compensated PIN diode provides high dose rate range coverage and accurate dose measurements.

Loud Alarm

GammaRAE II R alerts the wearer with a loud audible alarm, big, bright flashing LEDs, and a built-in vibration alarm. For stealth operations, users can disable each alarm individually.

Water Resistant

Immersible (IP67) design makes for reliable operation in wet environments and easy decontamination.

Dose Accumulation

The GammaRAE II R accumulates accurate total dose. Stored dose data can be cumulative or reset for each use period.

Intrinsic Safety (IS)

IS certification permits operation in potentially flammable/explosive environments.

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
- 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 900 hours
- Large, 30,000-point datalog capacity, downloaded via cable-free Bluetooth® connection

Applications

- Alerts first responders to radioactive threats
- Accurately measures accumulated dose to the wearer
- Customs & border patrols
- Law enforcement
- Security officers in nuclear power facilities, banks, government laboratories, medical facilities
- Military
- Government agencies
- HazMat teams
- Fire departments



Combined Detector and Dosimeter

Intrinsically Safe

Immersible



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www.raesystems.com

ATEX cSP[®] US CE



GammaRAE II R

Specifications*

Detector Specifications

| SENSOR | |
|--|--|
| 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 10 R/h (0.01 µSv/h to 0.1 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 automatic 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 | |
| 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>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> |
| DATALOGGING AND COMMUNICATION | |
| Datalog Size | 30,000 data points (20 days at 60-second intervals) |
| Datalog Modes | <p>Continuous: Logs data at all times</p> <p>Event-Driven: Starts logging data on alarm</p> |
| Datalog Interval | User programmable, 1 to 3,600 seconds |
| Communication | Built-in Bluetooth® radio interfaces with computer for datalog download and configuration changes |
| POWER | |
| Battery | 2 AA alkaline batteries |
| Operating Period | Up to 900 hours |
| OPERATING ENVIRONMENT | |
| 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") |
| IP Rating | IP67 (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

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| RAE Systems Inc. | USA/Canada | 1-877-723-2878 |
| 3775 North First Street | Europe/Russia | +45 8652 5155 |
| San Jose, CA 95134 USA | Middle East/Australia | 971 50 429 1385 |
| raesales@raesystems.com | China | 8610 58858788 |
| | Asia | +852 2669 0828 |

www.raesystems.com

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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