

GammaRAE II R

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.

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, invertible 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 data log capacity, downloaded via cable free Bluetooth® connection

Applications

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

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 software



GammaRAE II R

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Sensor

Radiation Sensors 3cc CsI (TI) with Photodiode (Low channel)
Energy Compensated PIN Diode (High channel)

Energy Range Gamma: 0.06 to 3.0 MeV

Dose Equivalent Rate 1 µR/h to 600 R/h (0.01 µSv/h to 6 Sv/h)

(DER) Range
for ¹³⁷Cs

Accuracy of DER ±20%

Neutron Measuring 1 to 100 cps

Range

Dose 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 ¹³⁷Cs check sources. Factory calibration available if needed.

Alarms

Time to Alarm ≤2 seconds

Alarm Alerts ▶ Loud audible buzzer (85+ dB @ 30 cm)
▶ Built-in vibration alarm
▶ Highly visible LED lights on both sides of LCD graphic display

Alarm Settings Dose Gamma and neutron alarm thresholds based on Rate

Search Mode—alarm threshold based on variations in local background level

Safety Mode—user programmable low and high alarm thresholds based on dose rate

Data Logging and Communications

Data log Size 30,000 data points (20 days at 60-second intervals)

Data log Modes

Continuous Logs data at all times

Event-Driven: Starts logging data on alarm

Data log Interval User programmable, 1 to 3,600 seconds

Communication Built-in Bluetooth® for data log download and configuration changes

Power

Battery 2 AA alkaline batteries

Battery Runtime Up to 600 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 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

Direct Readout Dose rate, peak rate, minimum rate, total dose, battery status, current time and date, internal 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

**Combined Radiation Dosimeter and Rate Meter Technology is produced by RAE Systems and protected by U.S. Patent No. 7,592,603 B2