GammaRAE II R

Radiation Detector and Dosimeter

The RAE Systems GammaRAE II R is a rapid gamma radiation detector and dosimeter in a single instrument. The GammaRAE II R is designed specifically to meet the needs of national security and emergency responders. Due to its high sensitivity at low radiation levels, GammaRAE II R can alert users of the presence of a radiation threat well before reaching health-threatening levels. Its high range and dosimeter functionality allow security and emergency responders to track their dose.

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

KEY FEATURES

- Sensitive CsI scintillator for fast search capability and 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 (µR/h & mR/h) or in Sievert/hour (µSv/h & mSv/h) and counts per second (cps)
- Two AA alkaline batteries last up to 600 hours
- Large, 30,000-point datalog capacity, downloaded via cable-free Bluetooth® connection

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

Emergency responders and police can protect themselves with immediate notification of dose rate and gamma radiation levels with the GammaRAE II R

GammaRAE II R

Radiation Detector and Dosimeter in One

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 ^{137}Cs	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 automatic on start-up, plus user-initiated as needed (Search Mode only)
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
Alarms	• 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 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 **DOSE** User-programable low and high alarm thresholds based on dose **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)

Datalogging And Communication

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

Battery	2 AA alkaline batteries
Battery Runtime	Up to 600 hours

Operating Environment

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

ORDERING INFORMATION (MODEL PRM-3021)

Product	Part Number
GammaRAE II R Standard Kit	047-0501-000
GammaRAE II R Rechargeable Kit	047-0601-000

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