



# NeutronRAE II

Personal Radiation Detector



RAE Systems NeutronRAE II is a personal radiation detector that provides rapid detection of both gamma and neutron sources. The NeutronRAE II's high sensitivity can alert users to the presence of a radiation threat well before they might be exposed to health-threatening levels. The NeutronRAE II features a loud audible alarm, bright flashing LEDs, and a vibration alarm. Each alarm can be disabled separately. NeutronRAE II's water-resistant design makes for reliable operation in wet environments and for easy decontamination.

## KEY FEATURES

- Detects neutrons from weapons-grade Plutonium ( $^{239}\text{Pu}$ )
- Sensitive CsI and LiI scintillators for excellent search capability and fast response
- Continuous digital dose rate readout in  $\mu\text{R}/\text{h}$  or  $\mu\text{Sv}/\text{h}$  for gamma radiation, and counts per second (cps) for neutron radiation
- Continuously accumulated total dose readout for gamma radiation
- IP-67, immersible in water for easy decontamination
- Two operation keys, simple intuitive programming
- Continuous datalogging with a large-10,000-point datalog capacity

## APPLICATIONS

- Alerts first responders to radioactive threats
- Customs and border patrols
- Security officers in nuclear power facilities, banks, government laboratories, medical facilities
- Military
- Government agencies
- HazMat teams
- Police and fire departments

- Quick detection of radiological threats
- Alerts the wearer with a loud audible buzzer, bright flashing LEDs, and a built-in vibration alarm
- Water resistant/immersible
- Dose accumulator tracks total dose exposure from gamma radiation
- NeutronRAE II is designed in compliance with IEEE ANSI N42.32 standard



A First Responder uses the RAE Systems NeutronRAE II for audible and flashing alerts about the presence of a radiation threat and tracking of total dose exposure from gamma radiation.

# NeutronRAE II



## Personal Radiation Detector

### SPECIFICATIONS

#### Sensor

Radiation Detector	Gamma: 1cc CsI (TI) with Photodiode Neutron: 1cc LiI (Eu) with Photodiode
Energy Range	Gamma: 0.06 to 3.0 MeV Neutron: thermal to 14 MeV
Dose Equivalent Rate (DER) Range for <sup>137</sup> Cs	1 to 20 mR/h (0.01 to 200 µSv/h)
Accuracy of DER	±20%
Neutron Measuring Range	1 to 100 cps
Dose Range	1 µR to 999 R (0.01 µSv to 9.9 Sv), gamma only
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 0.5 µCi or higher <sup>137</sup> Cs check source. Factory calibration available if needed.

#### Alarms

Alarm Alerts	<ul style="list-style-type: none"><li>• Loud audible buzzer (85+ dB @ 12"/30 cm)</li><li>• Built-in vibration alarm</li><li>• Highly visible LED lights on both sides of LCD graphic display</li><li>• Can be separately enabled or disabled</li></ul>
Alarm Modes	Search Mode: Gamma alarm threshold based on variations in local background level Safety Mode: User-programmable low and high gamma alarm thresholds based on dose rate (applies to gamma alarm only)

#### Datalogging And Communication

Datalog Size	10,000 data points (20 days at 180-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

#### Power

Battery	2 AA alkaline batteries
Battery Runtime	500 hours

#### Operating Environment

Temperature	-20° C to 50° C (-4° F to 122° F)
Temperature Alarm	Temperatures above 50° C (122° F) 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)

#### 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 (gamma, neutron) or dose rate in µR/h or µSv/h (gamma only)
Direct Readout	Dose rate, peak rate, minimum rate, total gamma dose, battery status, current time and date, current time since start-up, 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	10 oz (283 g)
Attachments	Rugged metal belt clip and wrist strap

\*Specifications are subject to change.

#### DETECTOR KIT INCLUDES:

- NeutronRAE II personal radiation detector
- Belt clip
- 2 AA alkaline batteries
- Wrist strap
- User's Guide
- Calibration certificate
- ProRAE Studio II software

#### ORDERING INFORMATION (MODEL PRM-3021)

Product	Part Number
NeutronRAE II Detector Kit	047-0401-200



Sicherheit von Kopf bis Fuss

Arsitec AG Industrie Neuhof 25 fon 034 427 00 58 info@arsitec.ch  
3422 Kirchberg BE fax 034 427 00 68 www.arsitec.ch