

Setting the new  
standard for personal  
radiation detection.



Thermo Scientific RadEye SPRD  
Personal Radiation Detector



# Definitive answers through pin-point accuracy

The Thermo Scientific™ RadEye™ SPRD personal radiation detector sets the new standard in detection and interdiction of illicit radiation. The unique combination of detector sensitivity and intelligent alarming ensure detection in the most challenging cases while eliminating nuisance alarms. Additionally, the SPRD identifies the nature of the discovered material in a manner configurable for your operation or user skills – from simple artificial vs. natural distinction; to industrial, SNM, and medical classification; to full spectroscopic analysis.

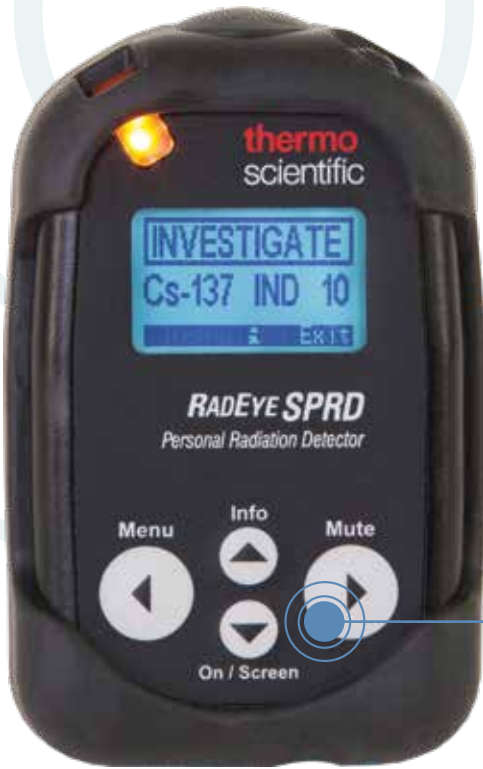
- Faster detection of radiation at greater distances without increasing false alarms
- Faster discrimination between potential threats to public safety and non-threat sources (medical or natural)
- Simplified ID capability for novice to advanced users
- Multiple modes of operation, easily configured to best align with radiation detection operating procedures
- Advanced NBR identifies artificial radiation while minimizing false alarms
- S-Alarm applies extra sensitivity from 90keV to 450keV for effective detection of SNM materials



## Versatility

Configure the RadEye SPRD as a simple 0 to 9 radiation level gauge. Or turn on dose rate readings, simplified gamma ID classification, or full spectroscopic capabilities.

# Easy information. Smarter decisions.



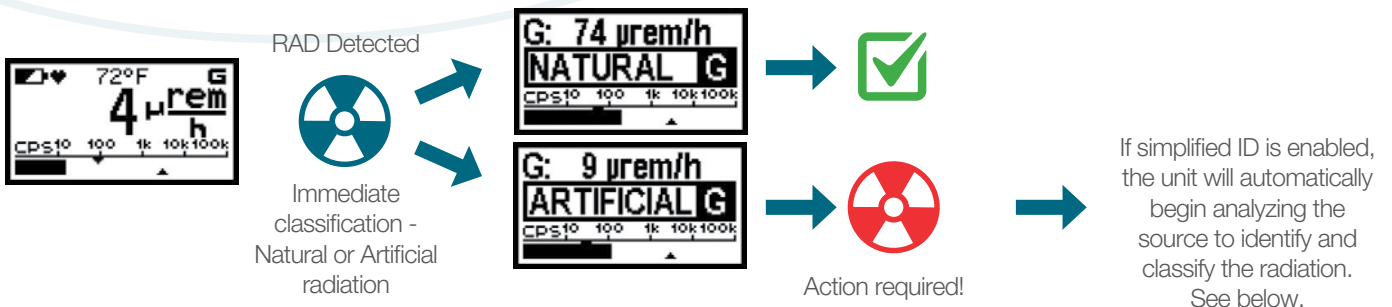
- No retraining or relearning for infrequent users
- Get results automatically, without the need to press buttons
- Quickly guides you through next steps after an alarm
- Simple 4 button design
- Comprehensive data neatly organized and presented on screen

## Configured based on your expertise

The RadEye SPRD can be configured as a basic PRD with no classification, with simplified ID, or full spectroscopic capability to meet user experience and standard operating procedures.

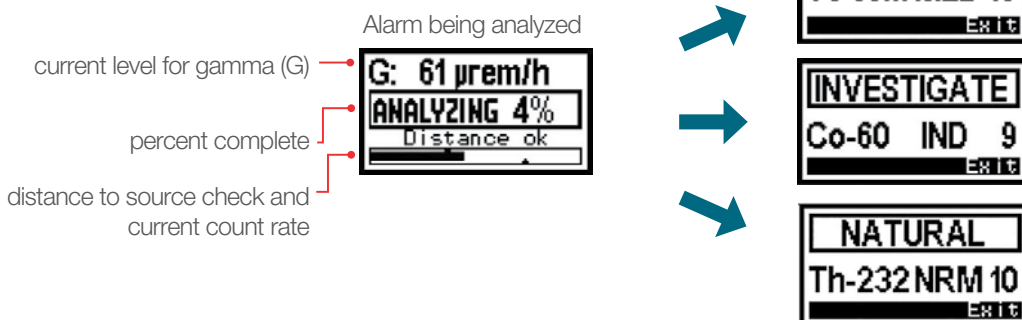
## Ratemeter

Can be configured to display dose rate or count rate in the main display



## Identification and Classification

Automatically classify and ID gamma radiation after receiving an alarm



# Rugged and practical.

- Can be worn in holster or standard service belt
- Small and lightweight
- Long battery life
- Drop resistant to 1.5m
- IP65
- Can be operated in extreme temperatures

“I have to investigate every alarm because I have no indication on my existing PRD of what the radiation may be.”

With Advanced NBR, the RadEye SPRD is able to significantly reduce the number of nuisance alarms without sacrificing sensitivity.

## Stay focused

- Agencies have seen nuisance alarms due to granite, natural stone and subway tiles reduced by 80% after deploying the RadEye SPRD without increasing alarm thresholds.



# Detecting artificial radiation utilizing Natural Background Rejection (NBR) Technology

## How does it work?

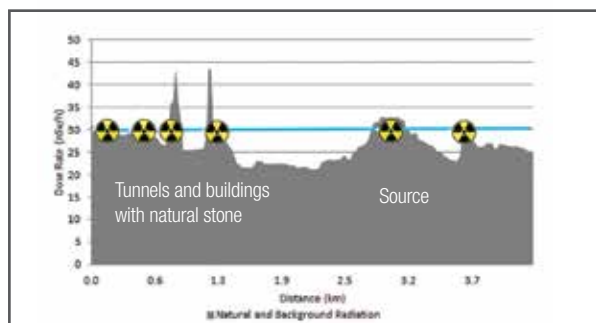
NBR has long set the RadEye PRD apart in the detection of low levels of artificial radiation, while at the same time reducing false alarms. NBR distinguishes artificial radiation from fluctuations in the naturally occurring background (NORM) by analyzing imbalances in the energy distribution of gamma radiation. The RadEye will alarm when these energy imbalances are detected even if the total radiation level does not elevate. This makes the RadEye unique for true field operations.

## How does it work?

NBR ignores fluctuations in naturally occurring radiation (NORM) while analyzing the energy imbalance of artificial radiation.

### Without NBR

- Higher threshold for alarm
- Numerous alarms, most due to natural radiation
- Nuisance for operator, may ignore



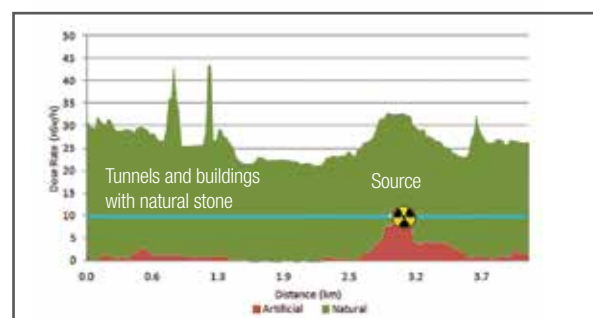
- Reduce false alarms
- Better detect low levels of artificial radiation such as hidden or shielded sources

## Natural background rejection scenario

Driving through tunnels, under bridges and past buildings with natural stone and past an artificial source.

### With NBR

- Lower threshold for alarm
- No false alarms
- Only alerts to artificial sources
- Operator knows to act

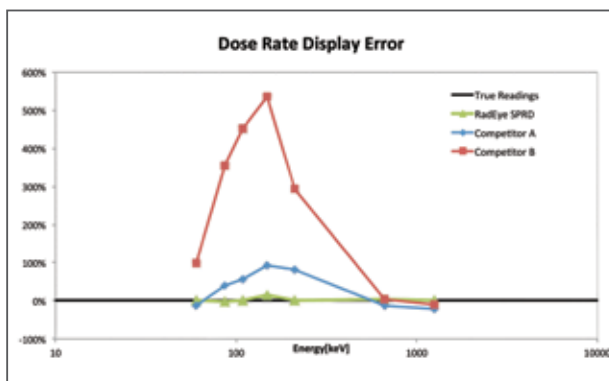


The spectroscopic architecture of the RadEye SPRD provides Advanced NBR with more energy bins to identify even complex mixes of artificial radiation from NORM. And the outstanding detector sensitivity of the RadEye SPRD further boosts its NBR performance.

## An architecture that improves dose rate accuracy

The primary purpose of a personal radiation detector (PRD) is to search and find illicit radiation sources. And while most PRDs provide dose rate measurements for personal safety reasons, this is typically a secondary purpose of the PRD. As a result, most PRDs specify dose rate accuracy in context with only one or a few gamma energies (eg., Cs-137 at 662keV). But what about accurate dose rate measurements associated with other isotopes?

The spectroscopic architecture of the SPRD enables accurate dose rate measurements across the broader gamma spectrum which enables better personnel safety.



The energy compensated dose rate response of the RadEye SPRD ensures more accurate dose rate measurements providing greater assurance of personal safety.

## RadEye SPRD ordering information

Part number	Description
4250817	SPRD, includes software for configuring RadEye and spectra download
4250818	SPRD Kit- includes RadEye SPRD, software, Holster (42506746), Lutetium test adapter (425067071), desktop holder (425067060), USB data cable (4254026), spare batteries, and rugged storage and carry case.

## RadEye SPRD specifications

<b>Radiation Detected</b>	Gamma
<b>Detector</b>	CsI
<b>Energy Resolution (662 keV)</b>	7.5%
<b>Sensitivity (cps per <math>\mu\text{Sv/h}</math> (662 keV))</b>	200
<b>NBR (Natural Background Rejection)</b>	Advanced with 6 energy windows
<b>Alarm Notification</b>	Display, LED, Sounder, Vibe
<b>Dose Rate Range</b>	1 $\mu\text{R/h}$ - 25mR/h (10 nSv/h - 250 $\mu\text{Sv/h}$ )
<b>Energy Range (+/- 30%)</b>	60keV - 3 MeV
<b>Typical ID Time @ 1<math>\mu\text{Sv/h}</math> (100<math>\mu\text{R/h}</math>)</b>	~ 3 minutes
<b>Gain Stabilization</b>	Continuous using temperature
<b>Neutron Verification</b>	via prompt gamma
<b>Designed to Meet Specification</b>	ANSI N42.48 2008
<b>Battery Type</b>	AAA x 2
<b>Estimated Battery Life</b>	~ 200 hrs
<b>Weight including Batteries and Rubber Sleeve (g)</b>	189
<b>Water/Dust Rating</b>	IP65
<b>Drop Distance onto Concrete</b>	1.5m
<b>Wireless Communications</b>	BT4 optional
<b>Wired Communications</b>	USB to IR

We offer a comprehensive range of accessories. To see a full listing of accessories visit [thermofisher.com/prdaccessories](http://thermofisher.com/prdaccessories)



### Accessories

#### Bluetooth™ Adaptor and mobile app.

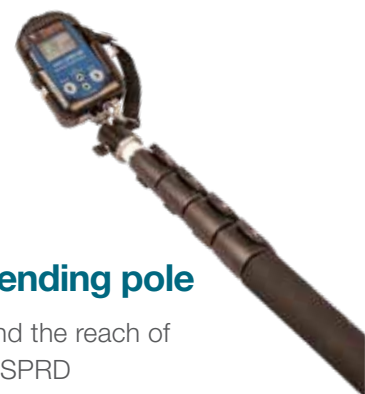


Faster response to alarms without exposing operation



#### Holster options

A wide range of holster options are available



#### Extending pole

Extend the reach of your SPRD



#### RadEye SPRD kit

Lu test kit adaptor for performance checking, cable and docking station for detailed analysis of data on a PC.

Find out more at [thermofisher.com/sprd](http://thermofisher.com/sprd)

**ThermoFisher**  
SCIENTIFIC