

RIID capability in the
palm of your hand



Thermo Scientific RadEye SPRD-GN
Personal Radiation Detector



Changing the game

The Thermo Scientific™ RadEye™ SPRD-GN delivers unprecedented detection. The first personal detector that can significantly exceed the original ANSI N42.48 2008 standards for neutron alarms while still fitting in the palm of your hand. With its excellent detection capability and reliable identifications, the RadEye SPRD-GN may be the only radiation detection tool you will need.

- Neutron alarms in under 2 seconds without increasing false alarms
- Detect both fast and thermal neutrons
- Detects neutrons **up to 10 times** faster than other lithium based detectors and 4 times faster than most He3 based neutron detectors
- Patent pending source-less stabilization algorithm runs continuously for reliable identifications in any scenario
- Outstanding neutron sensitivity along with patent pending source-less calibration
- Excellent IDs, especially SNM
- The detector is tuned to identify Special Nuclear Material (SNM) and low energy isotopes
- Single crystal design provides both gamma and neutron detection without bulk or complexity, (reducing weight and cost of ownership burdens)
- It is drop resistant to 1.5m, IP65 and can be operated in extreme temperatures (-20°C-50°C)

Applications

- Event security and investigations
- Immigration and border crossing
- Government programs where neutron detection is required
- Regional civil support teams
- Military WMD support
- Personal dose gamma/neutron monitoring



Neutron detection performance and stabilization through Integrated Spectroscopic Capable CLYC

A refined, higher resolution Cs₂LiYCl₆:Ce (CLYC) crystal allows for gamma spectroscopy and advanced pulse shape discrimination. These algorithms give you outstanding gamma and neutron performance you may have only achieved in larger instruments.

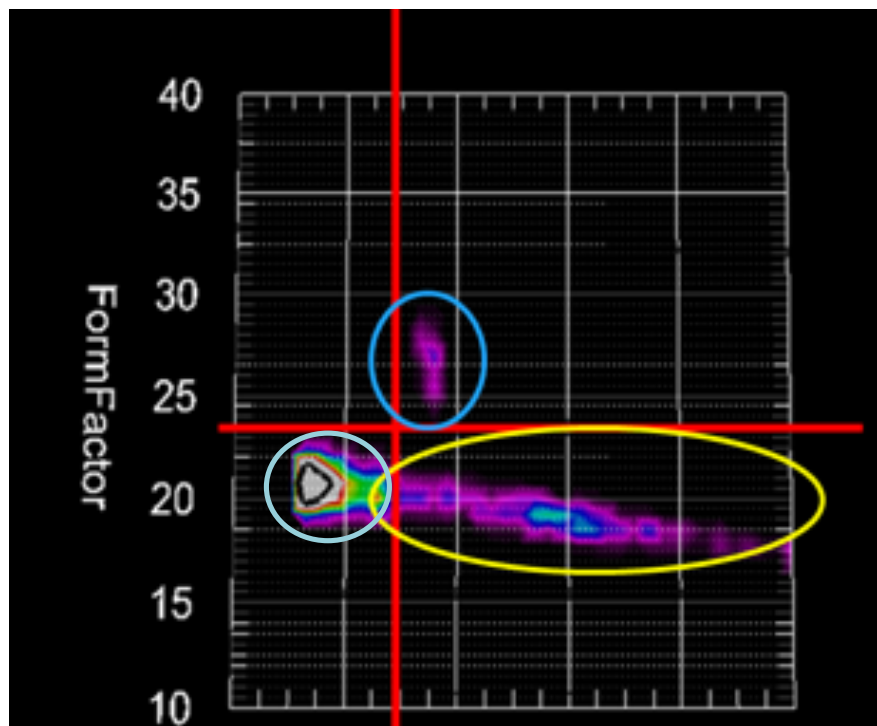
Most neutron detectors distinguish gamma and neutron radiation using pulse height discrimination (PHD), resulting in poor neutron detection, especially while moving. The SPRD-GN uses a specialized pulse shape discrimination (PSD) technique that separates gamma from neutron radiation. PSD also distinguishes high energy particles (typically cosmic radiation) from artificial neutron sources. This makes the RadEye SPRD-GN very effective in finding neutrons of interest, even while walking around.

The plot diagram below provides a visual representation of how CLYC and the optimized PSD algorithms in the RadEye SPRD-GN function.

- Gamma radiation (light blue) is separated from neutrons (blue and yellow)
- High energy particles in the background (yellow) are distinguished from neutrons of interest (blue)

These SPRD-GN algorithms allow:

- Continuous, auto calibration without intrinsic sources
- Setting neutron alarm thresholds below background levels without false positive alarms



The RadEye SPRD-GN's CLYC and PSD filters provide clear delineation between gamma rays (light blue), high energy particles typically from cosmic rays (yellow), and artificial neutrons (blue).

With over 90,000 RadEye units sold world wide, our first responder, nuclear power and medical customers know first hand the longevity and reliability of the family of instruments. The RadEye SPRD-GN is a next generation detector that reestablishes the standard in personal radiation detection.

Straightforward, foolproof operation

- Interface quickly guides infrequent users through easy to understand menus
- 4 button design
- Comprehensive data neatly organized and presented on screen



Easy-mode operation

Easy mode simplifies the device for infrequent users. It quickly guides you through the next steps after an alarm.



Download spectra

- Single step download and viewing of spectra using included software
- ANSI N42.42- 2012 compliant file for local review and reach back



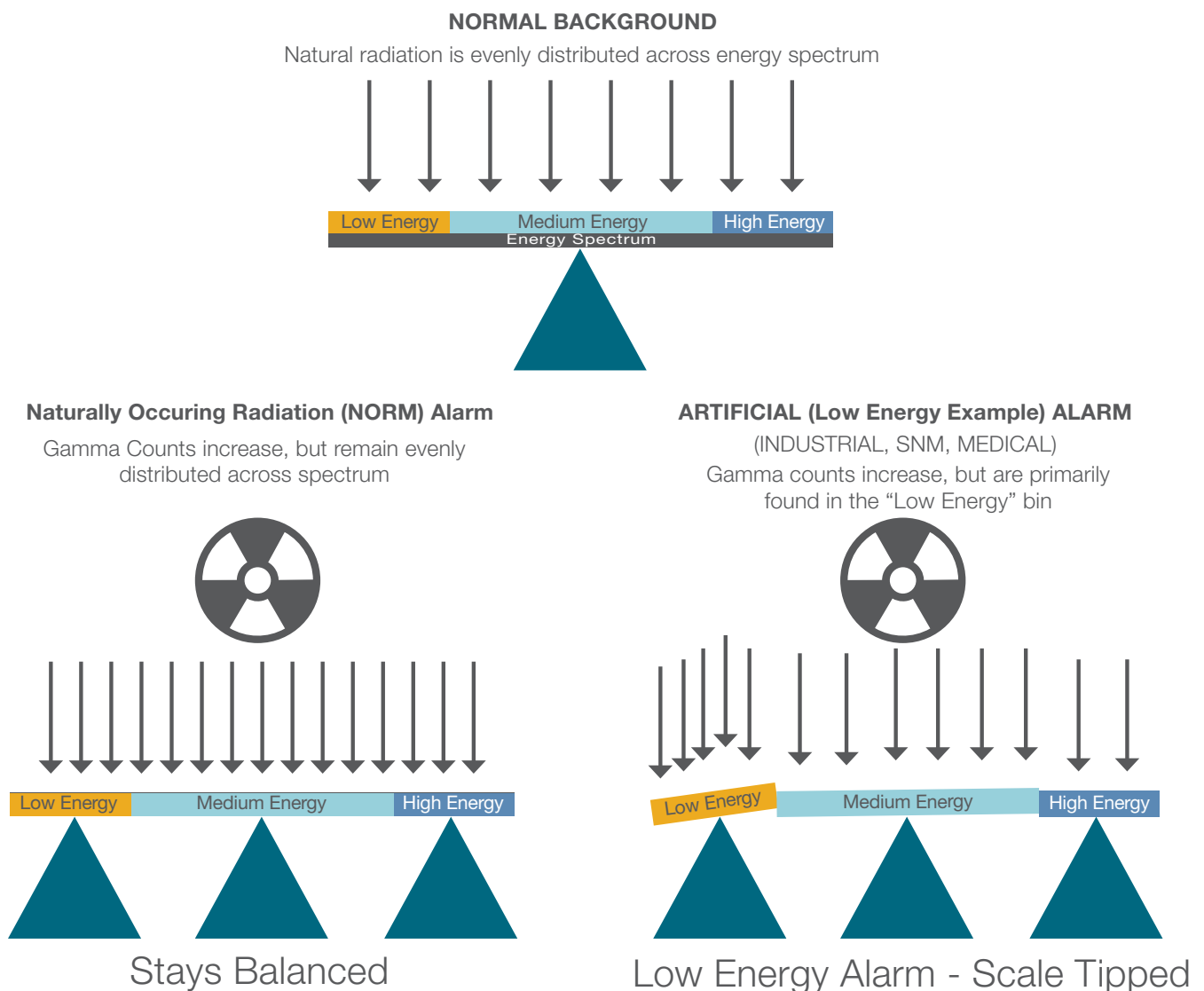
Unparalleled radiation detection

We offer different levels of NBR to meet your application. Similar to standard definition, HD and 4K with your television, we offer 3 different levels of NBR across our RadEye line to meet your needs and budget.

Basic NBR (Radeye PRD series) - Simple, and low power consumption, Basic NBR can quickly determine if radiation is natural or artificial by placing gamma ray counts from the energy spectrum into 3 bins and evaluating the ratios.

Enhanced NBR with ID (Radeye SPRD) - Enhanced NBR improves performance over Basic NBR by leveraging a higher resolution detector and additional bins. With basic gamma spectroscopy capability, Enhanced NBR with ID provides results that increase confidence and reliability.

Advanced NBR with ID (Radeye SPRD-GN) - Leverages the Enhanced NBR features and adds an automatic detector energy stabilization algorithm for reliable classifications and identifications in any scenario.



Part Number	Description
4250812	SPRD-GN, includes software for configuring RadEye and Spectra download
4250813	SPRD-GN Kit- includes RadEye SPRD-GN, software, Holster (42506746), Lutetium test adapter (425067071), desktop holder (425067060), USB data cable (4254026), spare batteries, and rugged storage and carry case.

RadEye SPRD-GN Specifications

Radiation detected	Gamma & Neutron
Crystal	CLYC (Cs ₂ LiYCl ₆)
Dose Rate Range	1 µR/h - 25mR/h (10 nSv/h - 250 µSv/h)
Energy Range (+/- 30%)	50keV - 3 MeV
Sensitivity (cps per µSv/h (662 keV))	110
NBR - Instant analysis Natural or Artificial?	Advanced NBR with ID
Energy resolution (662 keV)	7.0%
Typical ID-time @ 1µSv/h (100µR/h)	~ 3 minutes
Gain Stabilization	Source-less stabilization algorithm running continuously
Thermal neutron sensitivity (cps/nv)	4
Neutron pager alarm (20000 n/s, 25 cm)	Yes (<2 s)
Alarm Notification	Display, LED, Sounder, Vibe
Estimated Battery Life (hours)	120 (alkaline), 100 (rechargeable)
Battery Type	AAA x 2
Weight including batteries and rubber sleeve (g)	170
Water/Dust Rating	IP65
Drop Distance onto Concrete	1.5m
Wireless Communications	BT4 optional
Wired communications	USB to IRDA



Accessories

Bluetooth™ battery cover - Transmit data using low power BLE to a compliant mobile device. No tools or software required.



Holster options

A wide range of holster options are available

Extending Pole

Extend the reach of your SPRD-GN



RadEye SPRD-GN kit

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

Find out more at www.thermofisher.com/sprdgn

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