

thermo scientific

RIID capability in the
palm of your hand



Thermo Scientific RadEye SPRD-GN
Personal Radiation Detector



ThermoFisher
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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
- Continuous source-less stabilizing algorithm
- Onboard diagnostics monitor and calibrate neutron performance – even with no source present
- 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 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 monitoring gamma/neutron



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.

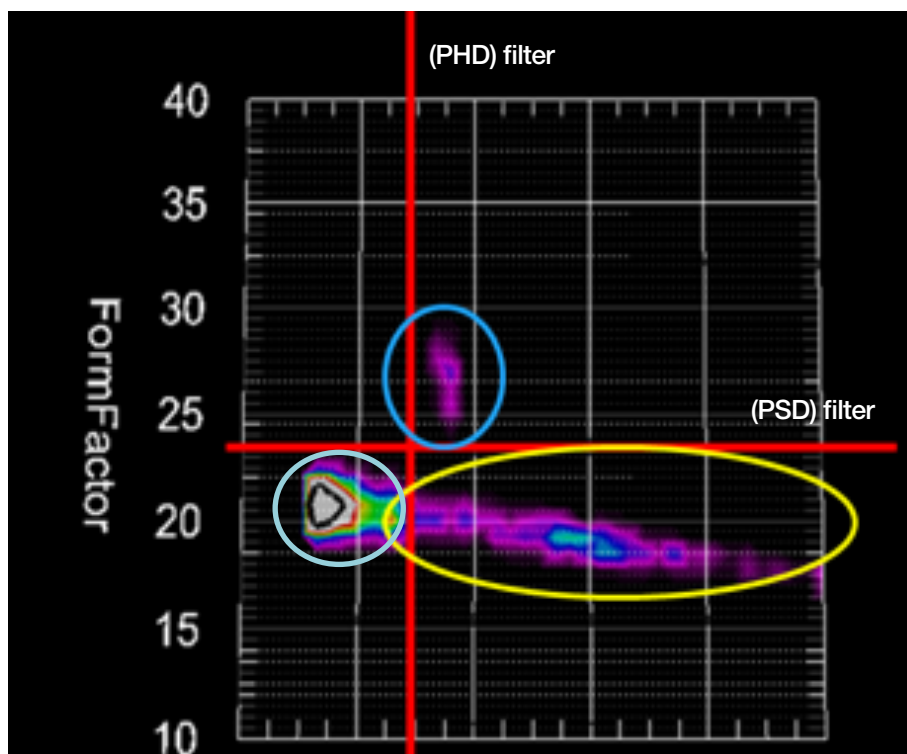
Most neutron detectors distinguish gamma and neutron radiation using pulse height discrimination (PHD). CLYC, however, utilizes pulse shape discrimination (PSD) as well as PHD. By evaluating the shape of the light pulse created by the neutron, rather than just the pulse height, PSD detects the difference between background neutrons, typically from cosmic radiation, and artificial neutron sources, making RadEye SPRD-GN more sensitive to neutrons that matter, up to 10 times.

The plot diagram below provides a visual description of CLYC and the optimized algorithms in the RadEye SPRD-GN.

- PHD distinguishes gamma (light blue) from neutrons (blue and yellow)
- PSD distinguishes background neutrons (yellow) from neutrons of interest (blue)

These algorithms allow:

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



RadEye SPRD-GN's CLYC and PSD filters can distinguish background neutrons from cosmic rays (in yellow) from artificial neutrons (in blue) or gamma rays (light 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.



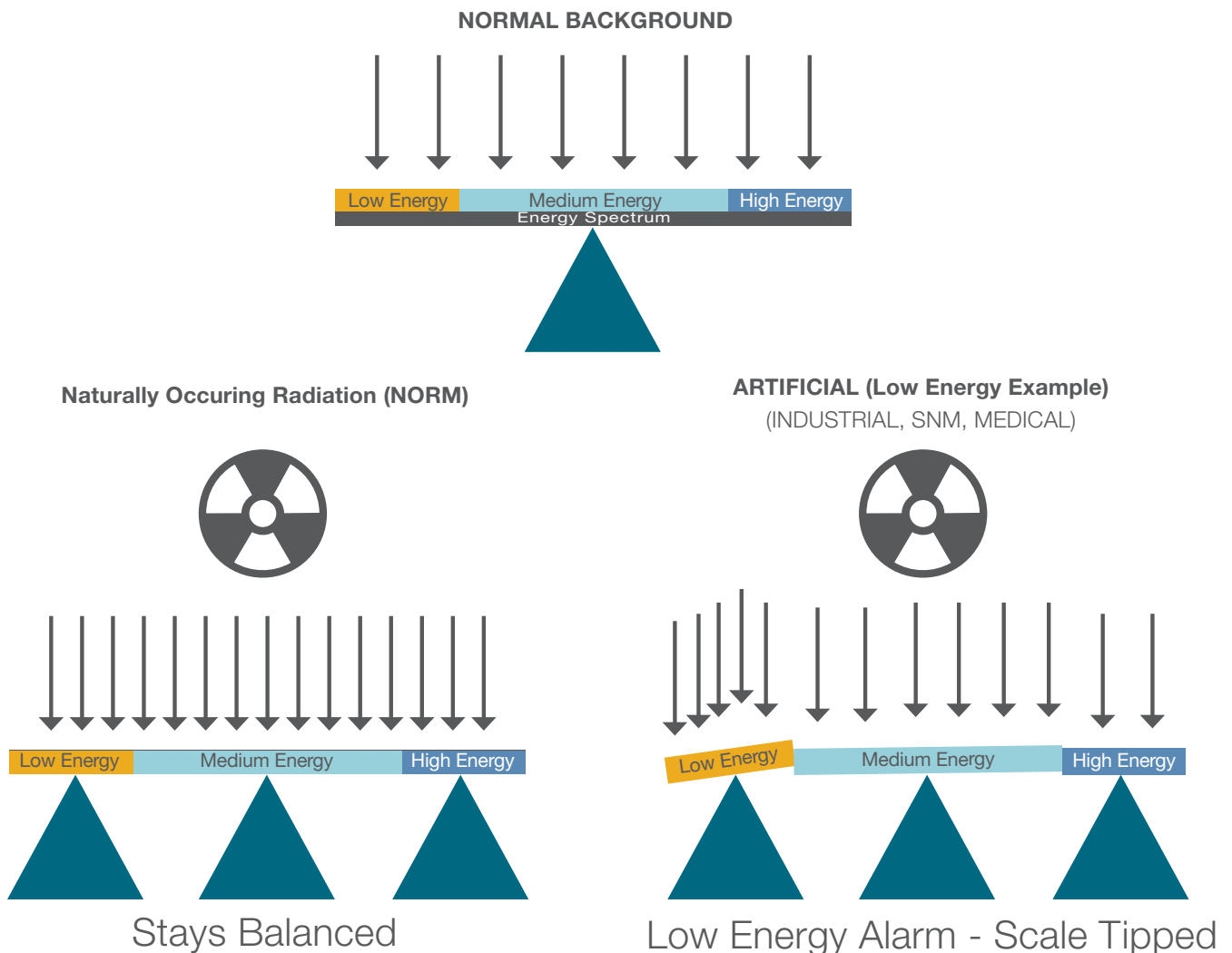
Unparalleled radiation detection

We offer different levels of NBR to meet your application. Similar to standard definition, HD and 4K with your television, NBR can be offered at a number of different levels:

Basic NBR - Simple, and low power consumption, Basic NBR can quickly determine if radiation is natural or artificial by dividing the energy spectrum into 3 channels (low, medium and high) and evaluating ratios

Enhanced Basic NBR with ID - Enhanced basic NBR provides higher resolution over Basic NBR by dividing the energy spectrum into additional channels and provides nuclide identification to reduce false alarms.

Advanced NBR with ID - Dividing the energy spectrum into 1024 channels, combined with automatic stabilization and excellent ID performance, this NBR provides the most capability and reliability in any scenario.



RadEye SPRD-GN Ordering Information

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 (Cs2LiYCl6)
Dose Rate Range	1 μ R/h - 25mR/h
Energy Range (+/- 30%)	50keV - 3 MeV
Sensitivity (cps per μ Sv/h (662 keV))	110
NBR - Instant analysis NORM or Artificial?	Very Good - 1024 analysis of entire gamma spectrum
Energy resolution (662 keV)	7.0%
Typical ID-time @ 1 μ Sv/h (100 μ R/h)	<3 min - The data shows some complicated spectra taking 5 min, but most can be made in 3 min or less.
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 - 2 per
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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