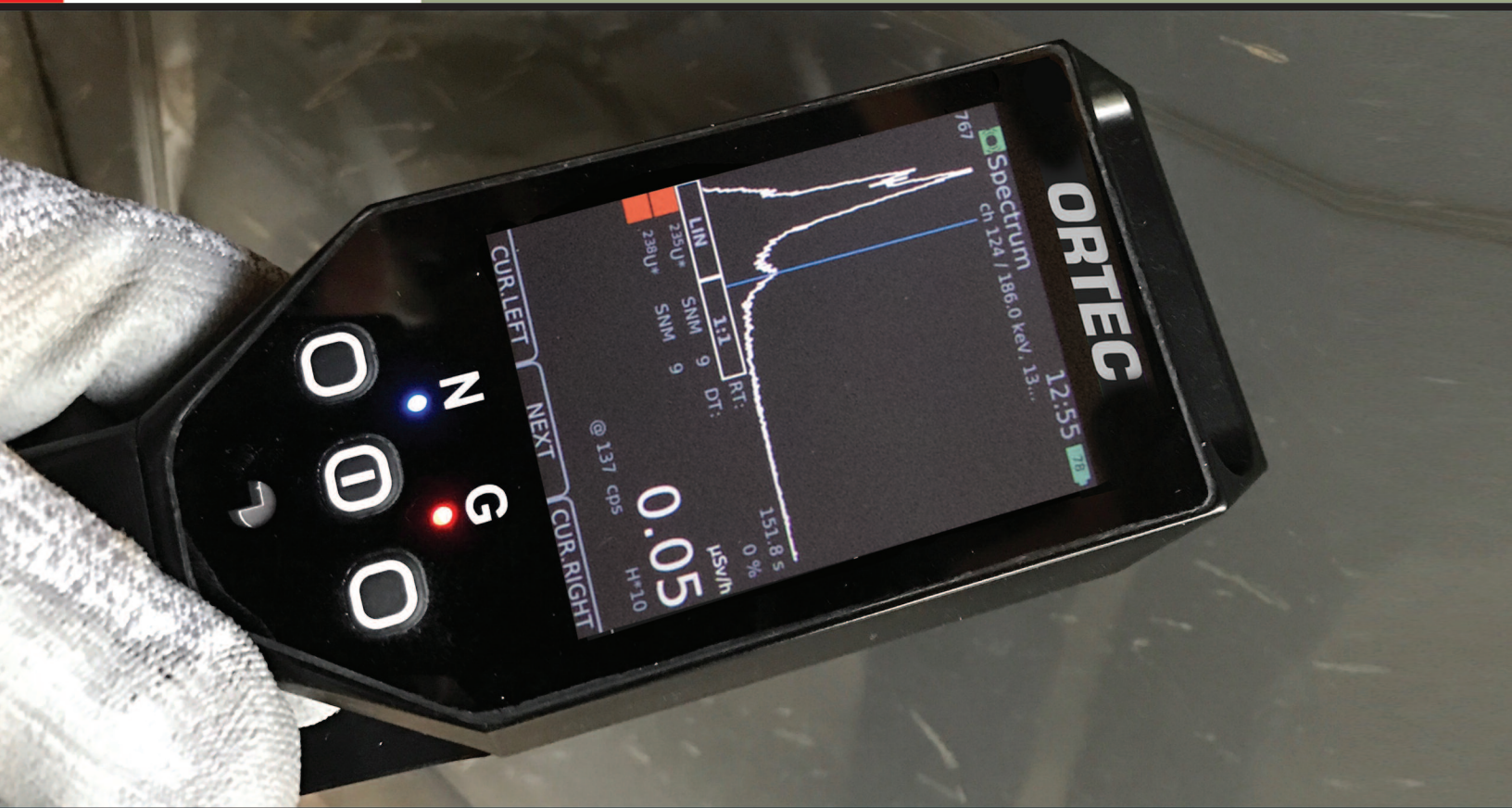


ORTEC®

RADEAGLET

Lightweight Handheld Radioisotope Identification Device



Weighing Only 900 grams, the RADEAGLET is the Lightest HH-RIID in the world!

The Perfect Instrument for First Responders Who Need to Wear a RIID On Their Belt.

AMETEK®
ADVANCED MEASUREMENT TECHNOLOGY

RADEAGLET

RADEAGLET is a state-of-the-art handheld, radioisotope identification device (RIID) delivering superior speed and accuracy.

- Combining a 2-inch diameter, high sensitivity NaI crystal with a proven and tested intelligent algorithm, the RADEAGLET can quickly, accurately, and simultaneously detect and identify up to six isotopes, typically in under 30 seconds.
- Weighing Only 900 grams, the RADEAGLET is the Lightest HH-RIID in the world!
- The RADEAGLET performs well, even in complex shielded or masked scenarios.
- **ANSI 42.34 compliant**, the RADEAGLET offers a **user-friendly interface** that is intuitive, simple to navigate, provides visually clarity, and utilizes an extensive array of alarms.
- Incorporating **decades of industry expertise** in detection and identification algorithms along with advanced hardware, electrical, and software systems, the **RADEAGLET is the handheld RIID of choice.**

Key Customers and Applications

- ✓ First Responders and Emergency Management
- ✓ Customs and Border Protection
- ✓ Security and Military Forces
- ✓ Nuclear Safeguards
- ✓ Environmental Management and Cleanup
- ✓ Nuclear Medicine and Scientific Institutes
- ✓ Scrap Steel and Recycling

Superior Algorithms for Identifying Multiple Sources, Masked Sources, and Shielded Sources (especially SNM)

The RADEAGLET employs a new generation isotope ID algorithm that incorporates multiple techniques (template matching, peak search, multi-agent analysis, etc.). Unlike many other competitive RIIDs that only use a template matching approach, the RADEAGLET uses multiple approaches to correctly identify the radionuclides present. Template matching works well under laboratory conditions, but in real world situations where nuclear threat sources may be shielded or masked, the template matching technique frequently misidentifies the hazard.

Why is the RADEAGLET algorithm so successful? Because each nuclide is found with the best method to find it, delivering unparalleled speed and accuracy for detecting and identifying over 100 nuclides, exceeding ANSI 42.34 requirements.



RADEAGLET

Application Centric Approach

The RADEAGLET algorithm is optimized for multiple real-world applications. Through extensive simulation, validated and refined with real world empirical testing, the RADEAGLET's performance is tuned and optimized for key isotopes associated with SNM in the nuclear security and safeguards market, NORM and IND for environmental and industrial applications and MED for nuclear medicine.

No Annual Calibration Required

Many RIID systems require annual or bi-annual factory calibrations. The ORTEC RADEAGLET does not require calibration/optimization at the factory. The RADEAGLET is supplied with a calibrated and linearized crystal integrated with the Multi-Channel Analyzer. This linearized system can be quickly checked for proper calibration with a Cs-137 source or with K-40 (natural background) and recalibrated by the user (typically in less than 1 minute). This can save several thousand dollars over the life of the product.

Stabilize On the Natural Background K-40 or with an Embedded Radiation Source

The RADEAGLET can stabilize on the natural K-40 background, or in situations where natural backgrounds may not be sufficient, an optional embedded source is available. The contribution of the embedded source is automatically subtracted, so it will never create a false alarm.

Extensive Nuclide Library

The RADEAGLET has over 100 nuclides in the library, and it does not require separate libraries for specific categories of radionuclides. As new nuclides become available, they can be easily added to the library.

Extremely Rugged

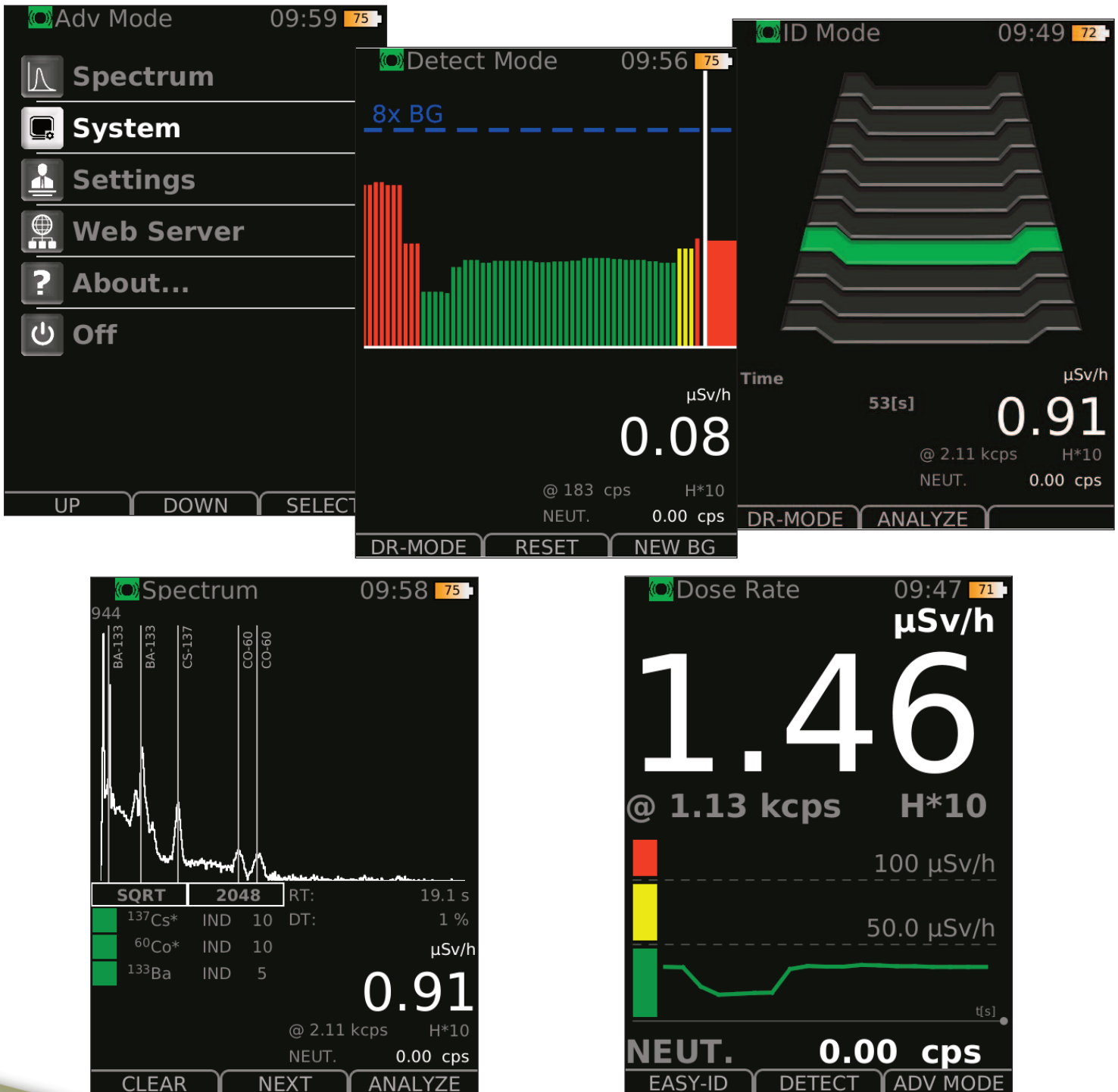
The RADEAGLET is rated at IP 65 which is superior to most RIIDs. It has passed drop tests, shock tests, and vibration tests.



RADEAGLET

Operating Modes

The RADEAGLET uses five basic operating modes: Dose Rate, Detect, Easy-ID, Spectrum, and Advanced. These **five simple modes give the user full system control** ranging from quick and accurate identification to extensive spectrum analysis to expert system configurations.



Common Technical Specifications

RADIOLOGICAL PERFORMANCE	
Energy Range/MCA	15 keV to 3 MeV / 2048 channels
Calibration Source	Natural background. Optional embedded calibration source.
Nuclide Library	<p>Default Isotopes: ^{110m}Ag, ²⁴¹Am, ¹³³Ba, ²⁰⁷Bi, ¹⁰⁹Cd, ²⁵²Cf (requires neutron detection), ⁵⁷Co, ⁶⁰Co, ⁵¹Cr, ¹³⁴Cs, ¹³⁷Cs, ¹⁵²Eu, ⁶⁸Ga, ¹²³I, ¹²⁵I, ¹³¹I, ¹¹¹In, ⁴⁰K, ⁵⁴Mn, ^{99m}Tc, ²²Na, ²³⁷Np, ²³⁸Pu, ²³⁹Pu, (²⁴⁰Pu, ²⁴¹Pu as part of compositions) ²²⁶Ra, ⁷⁵Se, ^{99m}Tc, ²³²Th, ²⁰¹Tl, ²³³U, ²³⁵U, ²³⁸U</p> <p>Optional Isotopes (contact factory): ^{109m}Ag, ¹⁹⁸Au, ^{135m}Ba, ¹⁴⁰Ba, ²¹³Bi, ¹¹⁶Cd, ⁵⁸Co, ¹³⁹Ce, ¹⁴¹Ce, ¹⁴⁴Ce, ¹³¹Cs, ⁶⁴Cu, ⁶⁷Cu, ¹⁶⁵Dy, ¹⁸F, ⁵⁹Fe, ⁶⁷Ga, ⁶⁸Ge, ^{166m}Ho, ¹²⁴I, ¹³²I, ¹³³I, ¹⁹⁴Ir, ⁴²K, ^{81m}Kr, ¹³⁸La, ¹⁴⁰La, ¹⁷³Lu, ¹⁷⁴Lu, ¹⁷⁶Lu, ¹⁷⁷Lu, ^{177m}Lu, ⁵⁶Mn, ²⁴Na, ⁹⁵Nb, ⁹⁶Nb, ¹⁴⁷Nd, ²¹²Pb, ¹⁰³Pd, ¹⁴⁴Pr, ⁸²Rb, ¹⁸⁶Re, ¹⁸⁸Re, ¹⁰⁶Rh, ¹⁰³Ru, ¹⁰⁶Ru, ¹⁵³Sm, ¹¹³Sn, ⁸²Sr, ⁸⁹Sr, ⁹⁰Sr, ¹³²Te, ²²⁸Th, ⁴⁴Ti, ²⁰²Tl, ²⁰⁴Tl, ²³²U, ²³⁷U, ¹⁸⁷W, ^{131m}Xe, ¹³³Xe, ^{133m}Xe, ¹³⁵Xe, ⁸⁸Y, ⁹⁰Y, ¹⁶⁹Yb, ¹⁷⁷Yb, ⁶⁵Zn, ⁹⁵Zr</p>
Nuclide Categories	Special nuclear material (SNM), Naturally occurring radiation (NORM), Industrial emitter (IND), or Medical source (MED)
PHYSICAL	
Dimensions	227 mm x 78 mm x 85 mm (8.9" x 3.1" x 3.4")
Weight	See page 6
Display	640 x 480, 89 mm (3.5") Transflective Color TFT
Batteries	Rechargeable Lithium Ion Battery Pack
Operational Run Time	>10 hours standard operation at room temperature
ENVIRONMENTAL	
Operating Temperature	-20 °C to +50 °C (-4 °F to +122 °F)
Relative Humidity	10% – 90%, non-condensing
Protection Rating	IP65
COMPUTATIONAL	
Memory	> 16 GB (1,000,000 spectra)
CPU Speed	1 GHz
File Formats	ANSI N42.42, SPE (IAEA)
Connectivity	USB, WiFi, GPS (optional)
SOFTWARE	
Operating System	Microsoft Windows (XP, Vista, 7, 8, 10), MAC OS X Yosemite, Linux (tested for Ubuntu)

RADEAGLET

Model Specific Technical Specifications

Model	Detector Type	Detector Dimensions	PMT	GM	He ^{3*}	GPS	Resolution @ 662 keV ¹³⁷ Cs at ambient room temp	Dose Rate Range Detector μ Sv/h	Dose Rate Range GM, up to Sv/h	Nominal Weight lb (grams)
RADEAGLET-2SG	Nal(Tl)	50.8x25.4 mm (2x1 in)	1.5"	✓			≤7.2%	0.01–200	1	1.94 (880)
RADEAGLET-2SG-H	Nal(Tl)	50.8x25.4 mm (2x1 in)	1.5"	✓	✓		≤7.2%	0.01–200	1	2.00 (910)
RADEAGLET-2SG-H-GPS	Nal(Tl)	50.8x25.4 mm (2x1 in)	1.5"	✓	✓	✓	≤7.2%	0.01–200	1	2.05 (930)

*with internal moderator

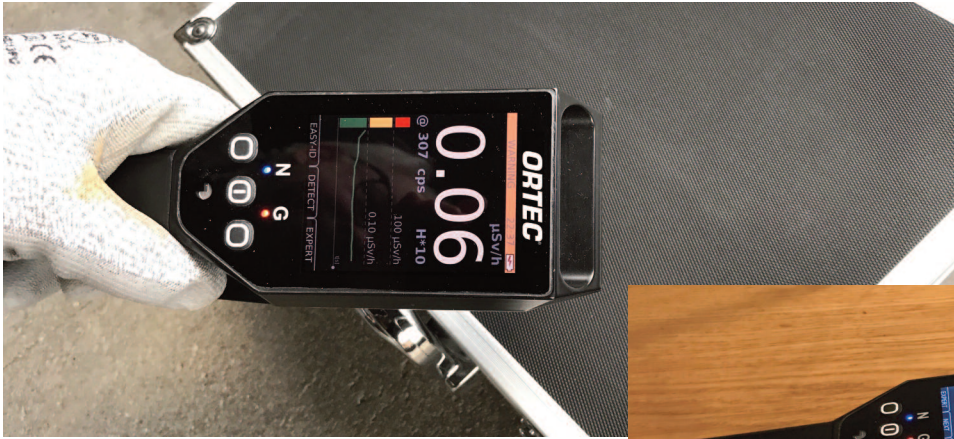


RADEAGLET

Ordering Information (All models includes carrying case and accessories)

Model	Description
RADEAGLET-2SG	Gamma Handheld RIID with 2x1 NaI(Tl) detector and GM tube.
RADEAGLET-2SG-H	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube and He-3 detector.
RADEAGLET-2SG-H-GPS	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, He-3 detector and GPS.
RADEAGLET-2SG-H-GPS-ES	Gamma/Neutron Handheld RIID with 2x1 NaI(Tl) detector, GM tube, He-3 detector GPS and embedded calibration source.
Accessories	
RT-CA019	Car Adapter 12 V
RT-CM020	Charger Module
RT-HB021	Carry Strap
RT-CC022	Carrying Case

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Specifications subject to change
062921

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www.ortec-online.com

Tel. (865) 482-4411 • Fax (865) 483-0396 • ortec.info@ametek.com

801 South Illinois Ave., Oak Ridge, TN 37830 U.S.A.

For International Office Locations, Visit Our Website

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