Industrial Radiation Protection
for Your Personnel, Facility and Business
Are you concerned with radioactive sources showing up at your recycling or scrap blending facility? Finding their way into your scrap metals stream and contaminating your shearing, shredding or melting process? Or ending up contaminating your products and having them wind up in the hands of consumers?

There should be a concern. Long before the security threat posed by radioactive sources was thrust to the forefront by the terrorist events of 9-11, the threat was and still is real for industrial operations, and the costs to worker safety, equipment decontamination or replacement, and lost productivity can be significant!

Reasons to Monitor For Radiation
International Atomic Energy Agency (IAEA) is aware of, on average, 150 or so “events”/year involving scrap metal

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>YEAR</th>
<th>EVENT</th>
<th>Cost or Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciudad Juarez, Mexico</td>
<td>1983</td>
<td>Co-60</td>
<td>1 dead, 4 exposed</td>
</tr>
<tr>
<td>Goiana, Brazil</td>
<td>1987</td>
<td>Cs-137</td>
<td>4 dead, 250 exposed</td>
</tr>
<tr>
<td>Cadiz, Spain</td>
<td>1998</td>
<td>Cs-137</td>
<td>$26 M cost of melting</td>
</tr>
<tr>
<td>Samut Prakarn, Thailand</td>
<td>2000</td>
<td>Co-60</td>
<td>3 dead, 10 exposed</td>
</tr>
<tr>
<td>Canton, Ohio</td>
<td>2004</td>
<td>Cs-137</td>
<td>$30 M cost of melting</td>
</tr>
<tr>
<td>Jewitt, Texas</td>
<td>2005</td>
<td>Cs-137</td>
<td>approx. $7 M</td>
</tr>
<tr>
<td>Mayapuri, India</td>
<td>2010</td>
<td>Co-60</td>
<td>1 dead, 8 exposed</td>
</tr>
<tr>
<td>Hueypoxtla, Mexico</td>
<td>2013</td>
<td>Co-60</td>
<td>Assumed lethal dose</td>
</tr>
</tbody>
</table>
A stainless processing facility found 145 nuclear items in scrap in 2011 and 200 in 2010, and more than 120 shipments of contaminated goods were denied U.S. entry between 2003 and 2008. Items such as decorative tissue box holders, metal tea tins, cheese graters, elevator floor numbering buttons, rebar, patio furniture, shovel blades, fashion belts, etc. have been discovered manufactured from Co-60 contamination metal.  

1Source: http://www.bloomberg.com/news/2012-03-19

A Cs-137 source was melted at steel mill, vaporized and contaminated the bag house dust. The emission system was shut down, causing contaminated flue dust to back up into the secondary bag house. It took three weeks and an estimated $25 million to clean up. In two separate incidents, 500,000 lbs. and 1.4 million lbs. of low level radioactive dust were produced and required specialized disposal.  

2Source: http://www.epa.gov/rpdweb00/source-reduction-management/scrapmetal.html

The number of “orphan sources” (found or abandoned sealed radioactive items that lack identifying marks) being discovered in scrap metal yards is increasing.  

3Source: http://www.epa.gov/rtown/docs/orphan-sources.pdf

Our experience, equipment and expertise can mitigate the risk that contaminated materials will affect you, your facility or your business. From portal, grapple and conveyor belt monitors to personal radiation detectors, we have you covered.
ASM IV Series Automated Scrap Monitoring Systems
Radiation Portal Monitoring systems for truck and railcar monitoring. Page 9

SGSI-GSE Process Monitoring Systems
Configurable for monitoring conveyor, platform scales or dust collection systems. Page 12

RadEye GR
Ruggedized, wireless grapple-mounted radiation detection system. Page 13

RIIDEye X
Ruggedized handheld radioactive isotope identification (RIID) instrument, provides fast, real time identification and analysis. Page 14

RadEye SPRD
Radioactive isotope identification combined with the portability and gamma performance capability of the RadEye PRD. Page 15

RadEye PRD
The most portable Personal Radiation Detector for search and find applications, providing sensitive and fast detection of gamma radiation with accurate dose rate measurements. Page 17

RadEye GN+ Gamma Neutron Pager
Combines RadEye PRD gamma sensitivity and energy compensated dose rate measurement with separate, high sensitivity neutron response and alarm threshold. Page 18

RadEye NBR
The most sensitive hand-held instrument featuring fast discrimination between man-made artificial sources and natural radiation. Page 19

RadEye Safety Kit
RadEye accessory kit, including Gate Check software for documenting scans performed with RadEye instruments. Page 20

RadEye Steel Contamination Kit
Portable steel sample counting system to determine Co-60 contamination levels in the metallurgy lab or out in the field. Page 21

Lutetium Test Adapters
Patented alternative to traditional radioactive check sources designed for each instrument/system. Page 22

Viewpoint Enterprise
Remote radiation monitoring solution through intelligent integration of hardware and software. Page 23
Experience

We have been in the radiation detection and measurement business since 1949. We have been providing large scale radiation detection systems to the metal recycling and metal production industries for over 25 years, designing and installing our first scrap metal monitor in 1987. We pioneered and refined the science behind detecting and resolving the low level radioactive signal from orphaned sources of radiation buried in scrap metal. And since the terrorist events of 9-11, our portal monitoring and portables technologies have been at the forefront of radiation threat detection at ports, borders and regional locations around the world.

Our Development Milestones
Over the Last 30 Years

1984
Built first vehicle radiation portal monitoring system (LFM-1) for industrial application

1986
Steel Manufacturers Association, Koppel, PA
Best detectability relative to false alarm rate

1987
First large scale, PVT plastic-based industrial RPM system installed at Bethlehem Lukens Steel

1988
Czech Meteorological Institute, Czech Republic
Best detectability relative to false alarm rate

1989/90
First ASM designated RPM specifically for vehicle monitoring introduced for steel industry

1990

1995-1997
Advanced Digital Filtering (ADF) and 1st generation Dynamic Background Suppression recognition (DBS) / Vehicle Profiling algorithms introduced resulting in highest sensitivity with lowest false alarm rate

1996
Multi channel energy window discrimination with PVT plastic scintillators. Patented in Germany as Natural Background Reduction (NBR) technique

1996
Steel Manufacturers Association, Koppel, PA
Best detectability relative to false alarm rate

1998
University of Milan, Milan, Italy
Best performance in 6 out of 9 categories

1998
Austrian Research Center, ITRAP, Seibersdorf

2000
Integration of DBS/Profiling algorithms & isotope identification software

2001
Independent Test Results

2002
Los Alamos National Laboratory, Los Alamos, NM
One of only two vehicle monitors to pass the requirements for Department of Energy Second Line of Defense Programs

2005
Next Gen Personal Rad. Detector, RadEye PRD, launched

2006
Austrian Research Center, ITRAP+10 - RadEye range tested PRD, GN, GN+ & NBR and PackEye

2009
RadEye GR Grapple Mounted Detection system launched

2010
Next Gen RPM, ASM IV launched

2012
Next Gen Spectroscopic PRD, RadEye SPRD and RIDEye X introduced

2013/14
Oak Ridge National Laboratory
DHS evaluation for Illicit Trafficking Radiation Assessment Program. March 2014 received a perfect (60/60) gamma detection score for all radionuclides as required in ANSI N42.35-2006 standard

2014
Oak Ridge National Laboratory
Portal Life-Cycle Evaluation and Demonstration System in Oakwood Village, Ohio

2020
Independent Test Results

2020
ASM system testing at Oak Ridge National Laboratory
Equipment

History has shown time and time again that no single radiation detection instrument/installation can guarantee protection and traceability at any single point of the material handling process. Multiple points of inspection help overcome the problems of too little time, too great a distance and too much shielding that will be surely be encountered at any one inspection point. The breadth of our product offering is unparalleled in the industry; everything from simple electronic dosimeters to radiation detection portal systems, from hand held gamma spectroscopic instruments to advanced spectroscopic portal systems.

System/Instrument Application Chart

<table>
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<th>SYSTEM</th>
<th>PAGE</th>
<th>PORTAL MONITOR</th>
<th>MATERIAL MONITOR</th>
<th>PERSONAL MONITOR</th>
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</thead>
<tbody>
<tr>
<td>ASM IV Series Automatic Scrap Monitoring Systems</td>
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<td>X</td>
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<tr>
<td>SGSI-GSE Series Monitoring Systems</td>
<td>12</td>
<td></td>
<td>X</td>
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<tr>
<td>RadEye GR Wireless Detection System for Grapple Installation</td>
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<td>X</td>
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<tr>
<td>RIIDEye Series Handheld Radiation Isotope Identifier</td>
<td>14</td>
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<td>X</td>
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<tr>
<td>RadEye SPRD</td>
<td>15</td>
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<td>RadEye PRD</td>
<td>17</td>
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<td>X</td>
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<tr>
<td>RadEye GN+</td>
<td>18</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>RadEye NBR System</td>
<td>19</td>
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<td>X</td>
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<tr>
<td>RadEye Safety Kit</td>
<td>20</td>
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<td>X</td>
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<tr>
<td>RadEye Steel Contamination Kit</td>
<td>21</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Lutetium Test Adapters</td>
<td>22</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>ViewPoint Enterprise</td>
<td>23</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Portal Monitoring Systems

Detect and deter radioactive threat items at the door and in your process. Our ASM IV portal monitoring system designs are the result of superior science supported by a wealth of experience in industrial applications. Our practical approach provides unparalleled performance with simple, clear, concise and actionable information to the operator. Our portal monitoring systems are configurable, offering solutions to meet, budget, application and performance requirements.

Radiation Detector Modules

**SINGLE**
- ASM IV 3KE
  - 48’ (1219 mm) vertical coverage
  - 15’ (381 mm) detector dwell
- ASM IV 6KV
  - 96’ (2438 mm) vertical coverage
  - 15’ (381 mm) detector dwell

**ENHANCED**
- ASM IV 6KE
  - 51’ (1295 mm) vertical coverage
  - 33’ (838 mm) detector dwell
- ASM IV 12KV
  - 102’ (2591 mm) vertical coverage
  - 33’ (838 mm) detector dwell
- ASM IV 18KV
  - 153’ (3886 mm) vertical coverage
  - 33’ (838 mm) detector dwell

**DUAL**
- ASM IV 6KD
  - 33’ (838 mm) vertical coverage
  - 48’ (1219 mm) detector dwell
- ASM IV 12KD
  - 69’ (1753 mm) vertical coverage
  - 48’ (1219 mm) detector dwell
- ASM IV 18KD
  - 105’ (2667 mm) vertical coverage
  - 48’ (1219 mm) detector dwell
- ASM IV 24KD
  - 141’ (3581 mm) vertical coverage
  - 48’ (1219 mm) detector dwell
ASM IV Series
Automatic Scrap Monitoring Systems

Specifically designed and built for the steel and scrap metal recycling industries

Integrated System Design
Encompassing years of experience in harsh industrial environments, the latest industrial hardened ASM design, has proven to excel in rugged and difficult environments.

- Combines optimized detector design with industry-proven peak detection algorithms
- Superior monitoring sensitivity
- Virtually no false alarms
- Clear, concise display of system conditions
- Fully Networkable

Robust, Reliable, Real-Time Operation

- Rugged industrial PC based System Control Unit; no commercial PC’s, no mechanical hard drives or cooling fans to fail
- 100% solid state hard drives
- Imbedded LINUX operating system and our latest “12 Series” electronics platform; no need for Windows™ upgrades/maintenance

Flexible Configurations and Optimized Detector Designs for the Application

Optimized detector sizes, as a result of independent study of data and real-world testing, yield best sensitivity. While larger volume individual detectors, may provide a slight cost savings, they decrease performance by having proportionally larger background values which directly impact signal to noise ratios and figure of merit. This essentially makes finding the needle (source signal) in the haystack (background signal) more difficult due to the haystack being larger. The use of multiple, smaller volume detectors provide vertical “resolution” over the vertical coverage area, by providing more independent detector zones that allow for significant increases in performance when compared to single, large detectors.

- Best in class vertical coverage
- Best in class vertical resolution

Algorithm Design for the Application

- Proven, unsurpassed Dynamic Background Suppression and Vehicle Profiling algorithm
- Fastest dynamic scanning interval coupled with optimized detector width provides best in class horizontal resolution
Vehicle & Cargo Application Matrix

Many factors come into play in determining what system may be most appropriate; material to be scanned, vehicle types, vertical coverage requirements, sensitivity, cost, etc. Use the matrix as a starting point to guide you in determining a range of models that may best match your needs.

<table>
<thead>
<tr>
<th>Thermo Scientific ASM IV Part #/ Configs.;</th>
<th>ASM IV 3KE</th>
<th>ASM IV 4KEO</th>
<th>ASM IV 6KV</th>
<th>ASM IV 6KD</th>
<th>ASM IV 6KE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Vehicles; Cars, Pickup Trucks</td>
<td>★★★</td>
<td></td>
<td></td>
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<tr>
<td>Garbage Trucks</td>
<td>★★★</td>
<td>★★★</td>
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<tr>
<td>Roll-Off Containers (Solid Waste)</td>
<td>★ - -</td>
<td>★ - -</td>
<td>★ - -</td>
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<tr>
<td>Roll-Off Containers (Scrap Metal)</td>
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<td>★☆☆☆☆</td>
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<tr>
<td>Triaxle Dump Trucks (Solid Waste)</td>
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<tr>
<td>Triaxle Dump Trucks (Scrap Metal)</td>
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<td>★☆☆☆☆</td>
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<tr>
<td>Semi Dump Trailers (Solid Waste)</td>
<td>★☆☆☆☆</td>
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<tr>
<td>Semi Dump Trailers (Scrap Metal)</td>
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<td>★☆☆☆☆</td>
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<tr>
<td>Semi Box Trailers (Solid Waste)</td>
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<tr>
<td>Semi Box Trailers (Scrap Metal)</td>
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<td>★☆☆☆☆</td>
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<tr>
<td>Large Scrap Haulers (Euclids/Terex)</td>
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<td>- - -</td>
<td>- - -</td>
<td>★ - -</td>
<td>★☆☆☆☆</td>
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<tr>
<td>Rail Cars (Standard Gondolas)</td>
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<td>- - -</td>
<td>★☆☆☆☆</td>
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<tr>
<td>High Sided Rail Cars</td>
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</tr>
</tbody>
</table>

**ASM Dimensions**

| Radiation Detection Modules (RDM)         | 2          | 3          | 4          | 2          | 2          |
| Top quantity of scintillators             | 2          | 3          | 4          | 4          | 4          |
| Number of RDM per side                    | 1          | 1          | 2          | 1          | 1          |
| Number of RDM overhead                    | 0          | 1          | 0          | 0          | 0          |
| Horizontal Dwell PVT Width - inch (mm)    | 15 (381)   | 15 (381)   | 15 (381)   | 48 (1219)  | 33 (838)   |
| Vertical Resolution PVT Height - inch (mm)| 48 (1219)  | 48 (1219)  | 48 (1219)  | 15 (381)   | 24 (610)   |
| PVT Volume/System - inch³ (l)             | 2,880 (47) | 4,320 (71) | 5,760 (94) | 5,760 (94) | 6,336 (104)|
| PVT Vertical Coverage - inch (mm)         | 48 (1219)  | 48 (1219)  | 96 (2438)  | 30 (762)   | 48 (1219)  |

**ASM IV System Application Selector Guide - inch (mm)**

- 48” (1219) load height smaller trucks lower density scrap
- 48” (1219) load height enhanced with overhead detector
- 96” (2438) load height trucks lower density scrap
- 33” (838) load height enhanced vertical and horizontal resolution high density scrap
- 51” (1295) load height standard trucks higher density scrap

| ★★★★ Best                           |            |            |            |            |            |
| ★☆☆ - Better                        |            |            |            |            |            |
| ★ - - Good                           |            |            |            |            |            |
| • • • Not Recommended                |            |            |            |            |            |

Please note that consultation with our expert staff is recommended to ensure that where a mix of vehicle types or sizes is possible that the most appropriate system is selected.
Vehicle & Cargo Application Matrix

Many factors come into play in determining what system may be most appropriate; material to be scanned, vehicle types, vertical coverage requirements, sensitivity, cost, etc. Use the matrix as a starting point to guide you in determining a range of models that may best match your needs.

<table>
<thead>
<tr>
<th>ASM IV 9KEO</th>
<th>ASM IV 12KD</th>
<th>ASM IV 12KV</th>
<th>ASM IV 18KD</th>
<th>ASM IV 18KV</th>
<th>ASM IV 18KDO</th>
<th>ASM IV 21KDO</th>
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<tr>
<td>PVT Width</td>
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<td>PVT Height</td>
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<td>15,624 (397)</td>
<td>15,624 (397)</td>
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<td>15,624 (397)</td>
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<tr>
<td>SCRATCHES</td>
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</table>

<table>
<thead>
<tr>
<th>Load Height</th>
<th>Enhanced with overhead detector</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCRATCHES</td>
<td>51&quot; (1295) high density scrap</td>
</tr>
<tr>
<td>TROUBLE</td>
<td>69&quot; (1753) load height enhanced vertical resolution and horizontal dwell</td>
</tr>
<tr>
<td>STANDARDS</td>
<td>102&quot; (2591) load height standard trucks high density scrap</td>
</tr>
<tr>
<td></td>
<td>105&quot; (2667) load height enhanced vertical resolution and horizontal dwell</td>
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<tr>
<td></td>
<td>153&quot; (3886) load height standard trucks high density scrap</td>
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<tr>
<td></td>
<td>69&quot; (1753) load height enhanced with overhead detector</td>
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<tr>
<td></td>
<td>105&quot; (2667) load height enhanced with overhead detector</td>
</tr>
<tr>
<td></td>
<td>141&quot; (3581) load height enhanced with overhead detector</td>
</tr>
</tbody>
</table>

See our complete portfolio of products at thermoscientific.com/rmp.
SGSI-GSE Series
Process Monitoring Systems

*Designed for monitoring material on conveyor systems, platform scales or dust collection system*

- Combines optimized detector design with patented Natural Background Rejection (NBR) algorithm
- NBR allows distinction between man-made sources and Naturally Occurring Radioactive Material (NORM)
- Configurable up to 4 detector modules
- Simple FHT 6020 based system control unit
RadEye GR

*Designed to augment your vehicle monitoring program to minimize the threat of radioactive material in the scrap metal stream*

Rugged radiation detection and alarm system that displays current readings, annunciates alarms and logs data wirelessly in the cabin of the crane or near the grapple.

- Small detector size, minimizes effects on grapple load capacity
- Enhanced sensitivity for low gamma energies
- Multiple portable Thermo Scientific™ RadEye® R display units possible
- Extremely high battery lifetime (in excess of 1500 hours)
- Nearly maintenance free
- Simple, straightforward installation
- Simple and comprehensive data logging and reporting
- One person required for system source check

| Quick exchange sealed scintillation detector | NaI(Tl) with PMT and Shock Absorber |
| Wireless data communication                 | ZigBee transmitter, 1 mW, Range > 100 m, 328 ft |
| Alarm annunciation                          | 85 dB in 30 cm distance High power LED |
| Internal data logger                        | RadEye PC-software compliant |
| PC interface                                | IR (standard) or Bluetooth (option) |
RIIDEye Series Handheld Radiation Isotope Identifier

Advanced and intuitive, for fast real-time identification

Our highly sensitive radiation isotope identification (RIID) system. The Thermo Scientific™ RIIDEye® system is ideal when it’s critical to know the exact isotope and precise location of the radioactive material to quickly initiate a plan of action.

RIIDEye X Series: Handheld Radio-Isotope Identification Device

For faster, more precise and comprehensive identification of Radioactive materials. Leading to quicker, more accurate assessments.

The RIIDEye X enables the user to find and identify the exact isotope and precise dose-rate of any radioactive material and plan the next course of action. Its patented Quadratic Compression Conversion (QCC) technology along with the large scintillation detector provides the industry's fastest, most accurate, real-time gamma source isotopic identifications. All in an easy-to-read, full spectrum color coded format.

RIIDEye X-G
Gamma radiation identification with a 2x2” Nal detector.

RIIDEye X-H
High resolution Gamma radiation identification with a LaBr (Lanthanum Bromide) detector

RIIDEye X-GN
Gamma Radiation identification with a 2x2” Nal detector
And CLYC Neutron detector.

RIIDEye X-HN
High resolution Gamma radiation identification
with a LaBr (Lanthanum Bromide) detector
And CLYC Neutron detector.

RIIDEye M
Modular versions of the RIIDEye variants with external removeable Gamma detector.

- Superior performance for ID
- Patented QCC algorithm allows fast ID even at low activities
- Rugged, passes 5’ droptest criteria
- Environmentally sealed, exceeds IP65 rating
- Clear, bright oversized display
- Weight balance handle ensures continuous comfort
- Easy to use
- SNM Assist feature helps user perform the best analysis for SNM

- Intuitive interface with color coded spectrum peaks
- Raised buttons enable easy gloved use of keypad
- Removable memory card, for easy spectrum downloads
- Rad-reachback is easy for further remote analysis
- Continuous gain stabilization with no integral Cs137 source
- Gives less false ID’s and better detection sensitivities
RadEye SPRD

All the performance of the RadEye PRD, including isotope identification!

- Worlds smallest, most portable radioactive isotope identifier (RIID)
- Rugged and Reliable
- Lightweight (6 oz / 170 grams)
- Compact (4 x 3 x 1 in / 96 x 61 x 31 mm)
- Worn on belt (instrument can be with scrap inspectors all day)
- 150 hrs from 2 AAA batteries (3 weeks at 50 hrs/week operation)
- Easy to use and features superior measurement performance using sophisticated low power technology
- All essential functions are easily accessed, even while wearing protective gloves
- Top-mounted alarm-LED can be seen while the instrument is worn in a belt holster
- Built-in vibrator and earphone output provide silent alarming for very noisy environments
- Fully automated self-diagnosis minimizes required maintenance
Personal Radiation Detectors

Confidently put your personnel’s safety in our hands. We offer a range of advanced personal radiation detection instruments providing gamma or gamma/neutron sensitivity and dose rate measurement including an isotope identification option. Thermo Scientific personal detection monitors, for definitive detection with the lowest degree of false positives/negatives—any environment or situation where personnel may be at risk for exposure to radiation.

- Small, easy to use and feature superior measurement performance using sophisticated low power technology
- Fully automated self-diagnosis minimizes required maintenance
- All essential functions are easily accessed, even while wearing protective gloves
- Top-mounted alarm-LED can be seen while the instrument is worn in a belt holster
- Built-in vibrator and earphone output provide silent alarming for very noisy environments

RadEye PRD
RadEye SPRD
RadEye NBR
RadEye GN+
RadEye PRD

For the best search and find capabilities

Sensitive and fast detection of gamma radiation with accurate dose rate measurement capabilities to hazmat levels. Detector is 5,000 to 100,000 times more sensitive than a typical electronic dosimeter.

- Alerts to orphan sources well before health concerns can become an issue
- Rugged and reliable
- Lightweight (6 oz / 170 grams)
- Compact (4 x 3 x 1 in / 96 x 61 x 31 mm)
- Worn on belt (instrument can be with scrap inspectors all day)
- 600 hrs from 2 AAA batteries (12 weeks at 50 hrs/week operation)
- Optional 5 ft. (1.4m) and 14 ft. (4m) extensions facilitate the measurement of vehicle loads or material piles
- Measuring range: 1μR/h - 25mR/h [0.01μSv/h – 250μSv/h]
- Overrange indication: Tested up to 1,000 R/h [10Sv/h]
- Energy range (+/- 30%): 60keV - 1.3MeV, excellent detection from 30keV
RadEye GN+

When neutron detection increases the likelihood of finding the source

Combines the superior performance of the Thermo Scientific RadEye PRD Gamma Pager with a very high neutron sensitivity that exceeds the time-to-time requirements of ANSI 42.32 and IEC 62401.

- Very high neutron and gamma sensitivity
- Rugged and reliable
- Lightweight (6 oz / 170 grams)
- Compact (4 x 3 x 1 in / 96 x 61 x 31 mm)
- Worn on belt (instrument can be with scrap inspectors all day)
- 600 hrs from 2 AAA batteries (12 weeks at 50 hrs/week operation)
- Immediate classification of gamma source (NORM/non-NORM)
- Energy compensated gamma dose rate
- Dual gamma/neutron display
- No false neutron alarms for even intense gamma sources
- Can be fitted with a Bluetooth® back set to talk to a PC or to other devices for networking
RadEye NBR System

The most sensitive handheld detector featuring fast discrimination between artificial and natural radiation

Portable high-sensitivity gamma radiation monitor. System consists of RadEye SX monitor and NBR components.

- Ideal for detection of shielded sources
- Alarm on small traces of artificial gamma radiation
- One-hand operation
- While portable instruments are not recommended for scanning vehicles, this would be the recommended instrument for that application

**UNITs OF MEASURE**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count rate (cps, cpm)</td>
<td></td>
</tr>
<tr>
<td>Dose rate (Sw/h, rem/h)</td>
<td></td>
</tr>
<tr>
<td>NBR</td>
<td></td>
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<tr>
<td><strong>Alarm threshold</strong></td>
<td>Two alarm thresholds for count rate, dose and dose rate each, NBR</td>
</tr>
<tr>
<td><strong>Audible alarm intensity</strong></td>
<td>80 dB at a distance of 30cm (11.8 in.)</td>
</tr>
<tr>
<td><strong>Scaler/Timer</strong></td>
<td>Preset count, preset time</td>
</tr>
<tr>
<td><strong>EMC Disturbance emission:</strong></td>
<td>EN 61000-6-3, Immunity: EN 61000-6-2</td>
</tr>
<tr>
<td><strong>Internal memory</strong></td>
<td>The last 1600 measured values are saved and can be read out via PC program. Max and mean value of count rate and dose rate. The time interval is factory preset to 120 s by default.Scaler measurements and momentaneous readings can be stored manually. Logbook with 250 entries for changes of configuration, occurring alarms and errors.</td>
</tr>
<tr>
<td><strong>NBR Detection Sensitivity</strong></td>
<td>Approx. 4000 cps per μSv/h at 662 keV, highly sensitive from 15 keV (front), respectively 30 keV (side)</td>
</tr>
<tr>
<td><em><em>Energy response (H</em>(10))</em>*</td>
<td>Exceeds IEC 62533 requirements (+/- 30 % for Am-241, Cs-137, Co-60)</td>
</tr>
<tr>
<td><strong>Dose rate range</strong></td>
<td>(Cs-137) 0.01 μSv/h to 100 μSv/h</td>
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</table>
RadEye Safety Kit

Accessory for RadEye PRD/PRD-ER and RadEye R

Content of the RadEye PRD Safety Kit

2 Holster for the RadEye PRD
3 Universal RadEye PRD “snap in” adapter
4 RadEye PRD Test Adapter (natural lutetium oxide)
5 Short handle for “snap in” of the universal RadEye PRD adapter
6 USB to the RadEye PRD’s IR port adapter cable
7 RadEye PRD desktop stand with mounting support of the adapter cable
8 Special application-specific software and handbook

Appropriate RadEye ordered separately

1 High sensitivity gamma pager

Scanning for contamination is assurance of quality

If the RadEye PRD is used for the manual scanning of in or outbound vehicles, then the application-specific RadEye Software documents via printing of the scanning protocol that no radiation was found in the inspected load. Additional text information such as “Company,” “Material,” “Weight,” etc. may be entered and stored or printed with the measurement values.

Recording and documentation

• Vehicle surface scans
• Work days/weeks
• Simple area monitoring

The software “GateCheck.exe,” in combination with a RadEye R, provides precise periodic measurement sampling and documentation. Thus it is easy for the user to get a daily protocol of all loadings.
RadEye Steel Contamination Kit

Portable solution for steel, slag and dust sample monitoring

- Portable, robust system in a transport case
- Minimal investment required
- Required RadEye PRD-S also to be used as a sensitive handheld gamma detector
- Battery power supply supports field operation
- Data logger for 1000 sample measurements
- PC interface via Infrared or optional Bluetooth
- Firmware upgrade for regular RadEye PRD (> version 3.0) to PRD-S possible
Lutetium (Lu 176) Test Adapters

- A 3.7E10 year half-life means:
  - no need for error-prone half-life corrections
  - no need for reoccurring purchase of the (decayed) check sources
- The adapters provide a highly reproducible and uniform activity content of 50 Bq/g (1.3 nCi/g)
- All test adapters of the same type have virtually the same activity; +/- 3%
- The design of a special shape enclosures and high density Lu2O3 ceramics minimizes the required activity for small size detectors
- Perfect material to test the low energy efficiency of portal detectors; Three peak energies at 300KeV and below, closely resemble the compton scattered energies of lead shielded Cs-137 and Co-60 further attenuated by scrap metal loads
- Test adapters available for all instruments and systems
The ViewPoint Enterprise System

The intelligent integration of hardware and software, the Thermo Scientific™ ViewPoint™ Enterprise system is built around three major components, Sensors, Communications, and Decision Analysis.

- Sensors are ASMIV portal monitors, SGSI process monitoring systems and RadEye PRD, as well as other instrumentation.
- Communications encompasses wireless and networked means of transferring information rapidly from sensors to the ViewPoint system.
- Decision Analysis is the powerful array of software tools that allow ViewPoint to remotely monitor, graph, and display data, as well as triggering alarms. Centralized Decision Analysis allows management and response personnel to make effective and rapid decisions when alarms occur.