



Protecting Personnel; Safeguarding Society

Field instruments for safety and security

When your safety, your team's safety and that of the wider public relies on making the right call, you need equipment you can trust. Devices that quickly and reliably detect and identify a threat are essential.

We provide a wide range of handheld and portable detection devices for those tackling safety and security issues in the field, from high level CBRNE threats (Chemical, Biological, Radiological, Nuclear and high yield Explosion) to narcotics crime. With in-house expertise in every area of analytical science we know how to pack optimal performance into instruments that combine accuracy, applicability and ease-of-use. Thousands of customers around the world rely on our detectors every day, for applications in:



Military

We're proud of our record in protecting military personnel. Our handheld Raman technology is deployed in every branch of the US military, and we offer detectors for both radiation and chemical ID that carry NATO stock numbers, all ready for efficient procurement. Our unique combination of technology, reputation, and global footprint makes us an effective partner for modern battlefields.

Key capabilities:

- Integrated solutions for the detection of alpha, beta, gamma, and neutron radiation for protection against all types of radiological threat
- Ability to deploy Raman and FTIR in a single instrument for complementary testing on the battlefield for threats such as chemical warfare agents and explosives
- Remote/delayed scanning to minimise risk in EOD (Explosive Ordnance Disposal)
- Compact, rugged solutions designed for easy transport and longevity under harsh conditions



Law Enforcement

Whether the goal is narcotics interdiction, security at a major event, detection and identification of a radioactive threat, or investigation of a clandestine lab it is vital to have technology that keeps pace with the changing nature of dangers and risk. Our narcotics detectors, which benefit from a proprietary, regularly updated chemical ID library, are used for law enforcement in all 50 US states and in more than 90 countries around the world. Our radiation detectors employ patented natural background rejection algorithms to provide unmatched sensitivity. All our instruments are lightweight, simple-to-use, and deliver results that are easy to understand.

Key capabilities:

- Dedicated, proven solutions for contactless narcotics testing offering dependable, accurate detection and ID hundreds of relevant substances including emerging narcotics, cutting agents, precursors, and mixtures
- Ability to detect radioactive threats at below natural background levels with minimal risk of false/nuisance alarms
- Analysis in the field for presumptive testing of narcotics and effective sample triaging to reduce backlog at the lab



Customs and Border Patrol

Securing borders involves the interception of hazards ranging from a dirty bomb or precursors for chemical warfare to an ever-expanding range of illegal drugs with fentanyl derivatives, xylazines, and nitazines currently at the top of the list. Rapid detection and identification are crucial to keep things moving. Our technologies offer the specificity, speed and user-friendly interfaces required.

Key capabilities

- Ability to detect and identify chemicals of interest in multicomponent mixtures such as cut drugs and explosive mixtures
- A chemical ID library built from the ground up and regularly updated in line with emerging threats from across the globe for the secure and robust identification of drugs, explosives, and Chemical Warfare Agents
- Highly sensitive gamma radiation detection and isotope identification to differentiate legitimate sources from those of concern

First response

Firefighters, HAZMAT teams and other first responders share the challenge of activating an optimal response to an initially unknown threat. A fire at a medical facility may expose responders to radiation contamination from isotopes used routinely for treatment while flammable, toxic and/or explosive materials are a routine feature of industrial or transportation incidents. Our technologies provide clear, definitive results, quickly, whether the hazard is chemical or radiological, supporting safe and effective action.

Key capabilities

- Ability to set low and specific alarms for gamma radioactivity to robustly find and identify any radioactive sources present
- Rapid and complete radiological threat analysis in just 60 seconds including radioisotope identification and neutron radiation detection
- Point and shoot chemical ID solutions with high visibility displays for in-field use in PPE (Personal Protective Equipment)
- Rugged, robust portable detectors that work reliably in the field, year after year, with minimal maintenance



Get free grant consulting

Thermo Fisher Scientific sponsors free, customized grant help for safety and security agencies in the United States with a focus on radiation detection, hazardous materials and chemical identification, and narcotics identification.



Chemical and narcotics identification



Gemini

- Combines FTIR and Raman chemical ID for in field confirmatory testing
- Rugged, compact design with scan delay capability for remote testing
- Intuitive and easy-to-learn with built-in guidance



TruNarc Delta and TruNarc Tau

- Rapid, contactless, presumptive Raman testing with automatic record keeping to expedite prosecution
- Tailored library for narcotics ID with over 1200 entries including narcotics, precursors and cutting agents
- Advanced Type H2 Kit is capable of testing fluorescent substances and low-concentration mixtures



FirstDefender RMX

- Fast, accurate, reliable chemical ID using Raman for individual substances and mixtures
- Compact design for in-field use; easily transportable, large visual display
- Point and shoot operation through translucent/transparent containers with articulated probe for testing at distance



Defender Omega and 1064 Defender

- Flexible, highly configurable, handheld Raman analyzer for safe and rapid chemical ID
- Accurate Raman analysis for an extensive range of explosives, narcotics and Chemical Warfare Agents
- Connectivity features such as WiFi for data sharing and GPS and digital camera to enable time and location stamping



TruDefender FTX

- Fast, accurate, reliable chemical ID by FTIR for individual substances and mixtures
- Easy to use and clean sampling head for efficient deployment and decontamination
- Track record of highly reliable operation in field

A Chemical ID library and identification algorithm you can trust

Our analysts build our chemical ID library in-house, from scratch using a proprietary chemometrics algorithm. Our team covers both lab and field analysis, and we share these robust and well-curated libraries. We use our global network to identify emerging threats and update regularly and rigorously. This is how our systems deliver exceptional accuracy. High hit rates, with minimal ambiguity.



Radiation detection



RadEye PRD4

- Rapid, reliable, high sensitivity, first pass radiological threat detection (natural, medical, threat) with minimal nuisance alarms
- Neutron indication capability
- Small, lightweight design with simple four button operation



RadEye SPRD and SPRD-GN

- RIID capabilities for radioisotope identification in a lightweight, pager sized detector
- High sensitivity gamma and neutron radiation detection and measurement with minimal false alarms
- Small, lightweight design with simple four button operation and auto identification capability



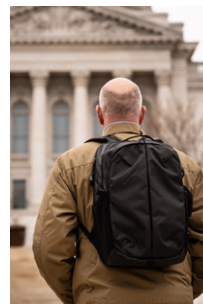
RadEye G

- Cost-effective solution for accurate, routine gamma and X-ray radiation threat detection
- Large, clear display for ease of use in the field
- Intrinsically safe version available



RadEye B20

- Robust, accurate alpha, beta, gamma and X-ray detection for complete radiological situational awareness, even with mixed contaminants
- Compact design and configurable operation for straightforward use in the field
- Low cost of ownership (>500 hrs operation with 2*AAA batteries)



PackEye XS

- Unobtrusive, lightweight backpack solution for large area surveying for radiological threats
- Rapid and sensitive gamma and neutron radiation detection
- Low power consumption and user-friendly interface streamline deployment in the field

Detecting neutron radiation alongside the gamma

Neutrons hitting the nucleus of an element trigger a change in excitation state and the release of prompt gamma rays which can be measured. We're experts in this field. We pioneered the development of Prompt Gamma Neutron Activation Analysis (PGNAA) and we lead the world in its industrial application. This is how we're able to add valuable neutron radiation detection capability to our radiation detection instruments, for detection of a wider range of radiological threats.

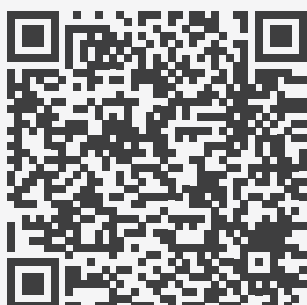
Reducing background noise

Naturally occurring radiation is just noise in the search for radiation threats. Wherever you use them, our instruments establish the background radiation in just tens of seconds and then automatically subtract it without sacrificing sensitivity to artificial sources. This is natural background rejection (NBR) and it is how we robustly differentiate artificial from natural radiation, allowing you to set alarms way below background level and avoid false alerts. High sensitivity detection that you can rely on.



Case studies

Read about customers utilizing our portfolio of instruments to keep the public and their teams safe.



Additional resources

Discover on-demand webinars, eBooks, and other resources to get the information you need to make critical decisions, now and in the field.



 Learn more at thermofisher.com/threatdetection

thermoscientific

For the presumptive identification or detection of narcotics, hazardous materials, chemical agents, explosives, and radiological threats only.
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