

Handheld Radiation Detectors

The Right Tool For The Job.



 **FLIR**[®]

The world's leader in portable gamma spectroscopy systems.

FLIR Family of Handheld Radiation Detectors

SHARED FEATURES

- *Rapid and accurate detection and identification of radioactive material*
- *Easy to operate user interface*
- *Transflective color LCD display visible in all lighting conditions*
- *No consumables, "self-health" check capability and extended service intervals*
- *Integrated GPS receiver*
- *Automatic stabilization and calibration*
- *webINTERFACE software requiring no dedicated PC for access to data*
- *One Touch Reachback™*
- *Integrated Bluetooth® technology for immediate data transmission from the field*
- *Storage for up to 600,000 spectra*
- *Standardized file format (n42) for spectrum files*

FLIR Radiation prides itself for innovation and achievement of many "firsts" in the field of gamma spectroscopy. Along with being the first to design and utilize digital signal processing and LED stabilization techniques, FLIR released its first handheld gamma isotope identification systems in 1998 when it launched the widely deployed identiFINDER® line. Over 14,000 identiFINDER®s have been fielded to date. These units use FLIR's template matching algorithms to rapidly and accurately identify radioactive material. This robust and trusted algorithm has been improved and implemented across the family of handheld products now offered.

Through years of experience working with our customers, researching new products, and improving our existing technology, we have come to realize that no one product can meet all the various applications handheld systems are used for. While the identiFINDER® 2 provides an ideal balance of size and performance, different applications require different detector sizes and sensitivities. Some applications require smaller, more rugged devices while at other times increased sensitivity outweighs the importance of a compact, lightweight instrument. FLIR Radiation is the first company to launch a full line of isotope identification instruments to meet the variety of radiation monitoring scenarios, ranging from small spectroscopic pagers to larger, extremely sensitive devices capable of rapidly scanning large areas. Based on our customer feedback, the new devices operate with the same easy to use and intuitive user interface that was deployed in the identiFINDER®. The common user interface lets a user trained on one instrument operate them all without additional training, allowing agencies to cooperate more seamlessly, thus providing better protection against Homeland Security threats.

We also realize the importance of supporting our responders in the field. FLIR's product line now offers enhanced communications allowing for the use of "One Touch Reachback". This feature gives a user the ability to transmit data from the field through off the shelf cell phones, thus providing experts anywhere in the world with instant access to the spectroscopic data.



Variety of Detector Technologies



CZT

The Raider product line utilizes CZT detectors. CZT detectors provide excellent resolution at <math><3.5\%</math> while having the advantage of being a smaller, more rugged detector.



LaBr

Although higher priced than NaI detectors, the large detector volume and high resolution of LaBr (<math><4\%</math>) provides a superb measurement quality for situations where high sensitivity and high quality measurements are needed.



NaI

The identiFINDER® 2 and radHUNTER® can be deployed with NaI detectors. NaI detectors provide a resolution of <math><8\%</math> and are a cost effective solution for many applications.



New Technologies

FLIR Radiation is constantly evaluating and researching new detector technologies. Please contact FLIR Radiation for the most up to date information available.

Field Applications – The Right Tool for the Job

Although all instruments in our range of products can be used for detecting, locating, and identifying radioactive material, the size and sensitivities of our product line vary to provide the right tool for the job!

Truck, cargo, or large area scanning

Freight and large area search missions create additional need for sensitivity. If a large area needs to be rapidly scanned or there is a need to locate low level or shielded sources, the radHUNTER® would be the ideal instrument for this task. Its highly sensitive, large volume detector can collect more data while minimizing the effects of background radiation. This increases the instruments ability to find and identify sources in these difficult situations. Although larger and heavier than other devices in the family, the radHUNTER® is provided with a balanced shoulder strap that allows it to be carried with comfort.



All purposes surveying and emergency response

When missions can vary and you need a versatile device capable of identifying radioactive material, the identiFINDER® is our best all-around product. Lighter and smaller than other radioisotope identifiers, it still provides the sensitivity and rapid identification needed in a wide array of tasks. With over 14,000 deployed, it is the world's most widely deployed device for detecting, locating, and identifying radioactive material. identiFINDER®s are commonly used in Homeland Security, Environmental monitoring, and emergency response applications.



Belt-worn passive scanning

One of the most effective methods for finding dangerous radioactive material is having responders wear devices to alert them of the presence of radiation. The instruments currently deployed to address this need are non-spectroscopic and are unable to identify the radiation present. The nanoRaider® is less than a pound, can be worn on a belt and passively monitors for radiation. Unlike other non-spectroscopic devices, the nanoRaider® can obtain an identification quickly and provide the wearer with the information required to make an appropriate decision to resolve the alarm. False alarms, which plague other pager devices, are virtually eliminated in the nanoRaider®.



radHUNTER® Product Line

identiFINDER® Product Line

Raider Product Line

In-Depth Look at Handheld Product Line

The FLIR radHUNTER® is an extremely sensitive and accurate digital hand-held gamma radio-isotope identification device (RIID). Available with a 4" (102 mm) diameter x ¾" (19 mm) deep NaI detector, 3" (76 mm) diameter x ¾" (19 mm) deep NaI detector, or 1.5" (38 mm) x 1.5" (38 mm) LaBr detector, the radHUNTER® is the most sensitive handheld identification on the market today. The large crystal volume allows the unit to quickly detect, rapidly locate, and precisely identify radioactive material.

Using the same operating interface and advanced algorithms as the identiFINDER® provides our customers immediate comfort and confidence when using the device. The large size of the radHUNTER® prevents it from being ideal for general surveying, but its increased ability to detect and locate sources in difficult environments makes it appealing for a variety of challenging applications. The crystal design minimizes background interference and increases its ability to identify, even in complex monitoring scenarios. If large areas need to be scanned rapidly or there is potential for shielding of sources (as frequently encountered in truck and cargo scanning), the radHUNTER® provides vastly superior performance when compared to smaller devices.



radHUNTER® Product Line

The FLIR identiFINDER® 2 is a logical extension of the original identiFINDER® series of handheld radio-isotope identification (RIID) instruments. The thousands of identiFINDER®s currently deployed worldwide have provided FLIR a tremendous resource for suggestions and comments on how to improve this already exceptional product line. The identiFINDER® 2 is the result of these comments and suggestions.

The identiFINDER® 2 provides an ideal balance of size and weight. It is available in both standard and underwater models. The underwater unit is the only radio isotope identification capable of being submerged in salt water up to a depth of 33' (10 m) available in the market today. At less than 3 lbs (1,4 kg), the identiFINDER® 2 can easily be operated with one hand even in the most stressful environments. The identiFINDER® 2 is the most versatile unit FLIR offers with high sensitivity housed in a compact, lightweight design.

The identiFINDER® 2 is used in many applications today by police, fire, border patrol, and various other agencies. The advanced algorithms allow any user to take highly sophisticated scientific measurements even when operated by a non-technical user. The performance and size of the instrument make it appealing for general surveying. Whether the application is scanning people, bags, vehicles, etc... the identiFINDER® will rapidly detect and identify the source of gamma radiation. With a variety of models to choose from, the identiFINDER® is a perfect choice for a variety of scenarios.



identiFINDER® Product Line

FLIR was the first company to deploy a Spectroscopic Personal Radiation Detector (SPRD) capable of identification when it was released as the microRaider. Now with years of experience with this state of the art detector technology, FLIR has released the next generation of SPRD in the nanoRaider®. About the same size as a cellphone, the belt wearable nanoRaider® provides continuous detection capability with visible, audible and tactile alerts.

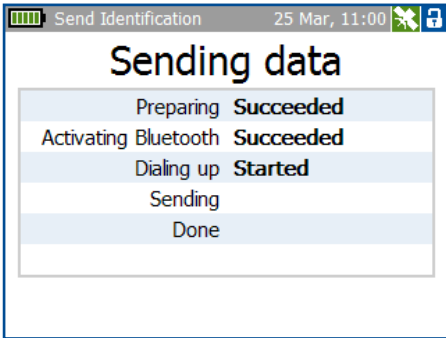
This rugged and small instrument provides identification capability usually associated with much larger devices. Its advanced detector technology provides a high quality measurement while users can easily operate the instrument through its two button interface based upon the common FLIR (identiFINDER® based) platform. Due to its small size and economical cost, a nanoRaider® can be deployed in place of existing PRD technologies with the added capability of identifying the isotope present. These features make it an ideal choice for those on the front lines of homeland security such as emergency responders and border patrol agents.



Raider Product Line

Features

FLIR's continues to improve its family of instruments and implements the latest advances in technology. Some of the recent features added include:



ONE TOUCH REACHBACK™

All FLIR radiation instruments utilize the most advanced communications features available in a radiation detector today. This enables FLIR to provide the "One Touch Reachback" feature where users can immediately provide full spectroscopic data as well as detailed device information, time, and GPS location to as many people as necessary with the push of a button.

No longer do users have to physically connect their device to a computer, install software, or use external email to provide alarm notifications. Through a simple Bluetooth® connection, such notifications are all but automatic. This unique capability provides added security by retaining all detection and identification data on the instrument itself and not on a local computer.



SHARED GRAPHICAL USER INTERFACE

All FLIR radiation instruments share a common operating interface. When operating in stressful and hazardous environments, the easy to use common operating interface allows users to complete the task at hand without worrying about how to operate the instrument. The common screens and data presentation means that users familiar with other instruments in the FLIR family of handhelds will be able to operate a new device immediately. The commonality between products reduces training time and costs, while increasing inter-operability between agencies using FLIR Radiation instruments.

WEB INTERFACE

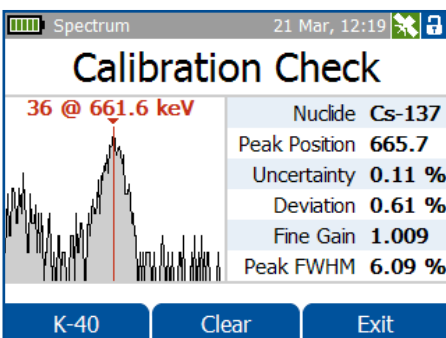
With today's familiarity with internet browsing, FLIR has implemented a webINTERFACE in every handheld product. No longer will users have to learn dedicated PC software. The device serves a web page allowing users to configure the instrument to their preferences, download data, or even field update their software. Users are immediately comfortable browsing the instruments files and settings as they use their standard web browsing software such as Internet Explorer®, Mozilla Firefox®, and the like.



Not only do operators feel more comfortable accessing the data and settings, but the internal software can be accessed from any PC. The device contains a driver that allows the unit to communicate directly over a standard USB cable eliminating the need for a dedicated PC or outside internet connection. This improvement offers many advantages including the ability to save and load user configured settings, operate the instrument via the PC, or download and view saved spectra and screenshots.

LOWER COST OF OWNERSHIP

FLIR Radiation works with our customers to help maintain and update the instruments currently in the field. Supplementing our extended warranty service package, we now offer extended service intervals with our latest generation products. Users can now upgrade their firmware through the webINTERFACE to install the latest algorithms and features without the need to return instruments to the factory.



The additional processing power and software architecture in these instruments provide additional capabilities of the system's "self-health check". The instruments now monitor their electronics, hardware and detectors to ensure peak performance in the field. If parameters move out of defined ranges, the instrument will prompt the user to run a field optimization. The automated optimization procedure requires no operator interaction, and within a few minutes, increases the reliability and performance of the instrument. The instruments can be fielded for 3-5 years without the need to return to the factory for service!

Radiological Assessment Kits

In the same way that FLIR offers a superior technology to the global security sector in the shape of a complete CBRNE (Chemical, Biological, Radiological, Nuclear and Explosives) capability, this Extraordinary Protection is now available to any individual, company, or organization concerned about radiation contamination in a wide variety of markets.

The need to monitor for the radioactive contamination and environmental effects of major nuclear events has never been greater. FLIR Radiation is addressing these urgent needs by providing all-inclusive kits that are specially designed to help monitor for potentially harmful radioactive material. When there is a need to monitor for surface contamination of food, goods, buildings, vehicles, ships, or any environmental surrounding quickly and easily, FLIR Radiation has a kit utilizing a specialized version of the world's leading isotope identifier, the identiFINDER®. These kits implement highly scientific measurements and libraries tuned for contamination by using sophisticated algorithms. While the science and calculations is complex, the units are operated through an easy to understand three button interface with on screen instructions.

FLIR currently offers two different kits for contamination monitoring scenarios:

MARITIME ASSESSMENT KIT

FLIR Radiation is the only manufacturer of an isotope identifier capable of withstanding the harsh conditions of the maritime environment. The Maritime Radiological Assessment Kit includes the only salt water proof, underwater capable radiation detection and identification tool, the identiFINDER®. With a targeted nuclide library and specialized algorithms, the device is essential for Maritime personnel who may encounter radioactive contamination. The Kit provides the capability to identify any potential contamination monitoring of water and other provisions and enables rapid situation resolution.

Applications

- Ocean Freight Ships
Freight/Provision assessment, bilge water monitoring
- Cruise Lines
Passenger protection, provision assessment
Bilge water monitoring
- Dockside / Port Authorities
Freight assessment
- Private Ship/Yacht
Passenger protection, provision assessment

ENVIRONMENTAL ASSESSMENT KIT

The Environmental Kit contains an identiFINDER® 2 with a targeted nuclide library, specialized algorithms, and a swipe test kit. The instrument not only identifies the isotope present, but provides an activity per area measurement capability as well. This information can be used to ensure personnel safety, to protect product quality, to determine the effectiveness of decontamination efforts of an area, or to evaluate and study the effects of major disasters. The Environmental Radiological Assessment kit is an essential and complete kit to carry in preparation for routine checks and to handle any unfortunate radioactive contamination. It will identify the contamination present and provide activity measurements allowing for rapid situation resolution.

Applications

- Importers
Supply/Goods contamination monitoring
- Environmental and Research Groups
To studying the effects of major nuclear events
- Food and hospitality suppliers
Ensure product safety for the consumers
- Decontaminations surveys
Monitor buildings, vehicles, and other vessel for contamination





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