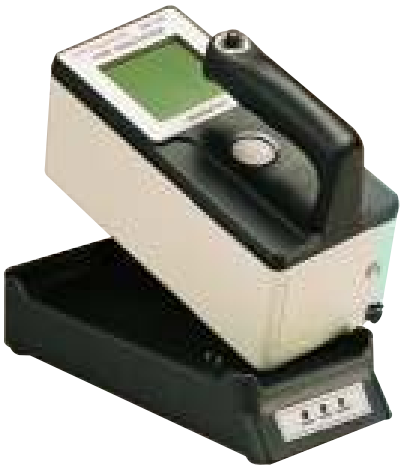
GR-135 - The Identifier

EXPLORANIUM™
RADIATION IDENTIFICATION DEVICE



Features

+ Easy-to-use, automatic, two-step operation
+ One hand, one-button, multi-function applications
+ Nuclide emission identification, including HEU (Highly Enriched Uranium) & Pu (Plutonium)
+ Four pre-defined nuclide libraries
+ Docking station for immediate system readiness
+ "Eyes-free" audio warning system, with earphone and volume control
+ Lightweight, rugged, and balanced "in-the-hand" natural feel
+ Multi-language capability

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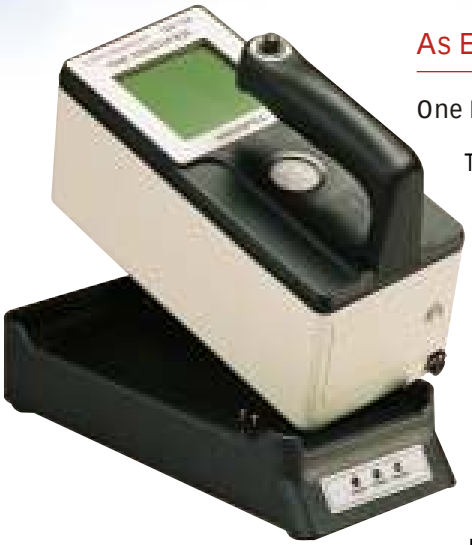
EXPLORANIUM™ GR-135 - THE IDENTIFIER

Radiation Identification Device



As Easy As "Grab, Point and Click"

One Hand / One Button Operation

The EXPLORANIUM™ GR-135 Identifier is as easy to use as grab, point and click. It is outfitted to detect the presence of radioactive emissions from nuclear sources in field operations where ease of use and simplicity are critically important. Whether climbing up a ladder, navigating through dense smoke, or inspecting incoming containers, the GR-135 Identifier's single-button operation provides maximum ease of use.

While resting in its docking station, continuous system stabilization and internal battery recharging help the GR-135 Identifier to be always ready to perform. It is well-balanced and easily carried and operated with one hand. Featuring a lightweight, rugged design, the GR-135 Identifier can be controlled with one thumb, using the multi-function joystick switch.

Search for radioactive sources

Measure the intensity

Identify nuclides for risk assessment

Advanced Features

Ease Of Usability In A Single System

Manual Mode Operation
Manual mode allows the qualified user the opportunity to change parameters, i.e., alarm levels, etc. Both manual and automatic modes allow the user to perform advanced spectrum analysis, together with other advanced functions, including adjusting scaling and zoom, expanding peaks of interest, defining multiple regions of interest (ROI) and re-play, allowing the re-analysis of selected stored spectra.

Neutron Detection
The GR-135 Identifier uses a high-efficiency moderated solid-state detection system that has maximum neutron sensitivity with minimum gamma interference.

Customized Nuclide Library
The GR-135 Identifier supports up to four different pre-defined nuclide libraries. Custom libraries are available upon request.

System Data Storage
The GR-135 Identifier provides on-board data storage for dose, survey and sample spectra. The non-volatile memory secures all saved data, even if the batteries wear down.

Replay/Scan Stored Spectra
In situations where it may be necessary to review a previously stored spectrum to confirm the presence of a suspected nuclide, the GR-135 Identifier allows the user to scan the internal memory and display, recall and re-analyze the sample spectrum.

Special Nuclear Materials (SNM) / Optimized for Shielded Sources
In counter-terrorism applications, the presence of U235, U233 and Pu239 is complicated by camouflage techniques and other "dirty" nuclides. The GR-135 Identifier utilizes a combination of high resolution at low energies of CZT* and sophisticated peak analysis and ratio techniques to qualify special nuclear materials.

Digital Multi Channel Analyzer
A powerful 1024 channel MCA provides maximum capability throughout the 0.02 to 3 MeV energy range. Automatic pulse pile-up rejection is an advanced feature of the GR-135 Identifier that removes erroneous peaks caused by high-count rate conditions.

*CZT is an optional feature.

GR-135

Easy To Use
Two Step Operation

System ready in the docking station

Searching and measuring dose rate

Automatic nuclide identification

Ready > Docking Station > System Is Ready

While resting in the docking station, continuous automatic system stabilization (internal 0.25µCi Cesium-137 source, 9 kBq) and internal battery recharging take place. Housed in this docking station is an internal RS-232 communication port for automatic download of stored dose, survey and sample spectrum to PC data viewing software.

Step 1 > Grab and Go > Search and Dose Rate

When taken out of the docking station, the GR-135 Identifier is in search/dose mode, which displays survey and dose rate simultaneously.

In search mode, the GR-135 Identifier displays a histogram graphical display with counts per second (CPS) and energy-corrected dose in real-time. Dose rate is displayed both in numerical units and as a PROGRESS BAR that can be set to match the response of radiation pagers and user-defined alarm levels.

Step 2 > "Click" > Nuclide Identification

The primary responsibility of the GR-135 Identifier is to provide prompt analysis for a field agent, without the requirement for advanced spectrum analysis or nuclide knowledge.

The GR-135 Identifier utilizes state-of-the-art nuclide identification techniques to report nuclides found, such as:

+ automatic nuclide identification
+ optimization of identification for shielded sources and special nuclear material
+ full text nuclide classification; type, nuclide name and size
+ pre-defined nuclide libraries, with no additional setup required

Dock to PC and download collected information

Reporting

Dock to PC > Data Viewing software

When stored data must be transmitted to an expert for review, the GR-135 Identifier can be returned to its docking station and viewing software will automatically download stored data and spectrum to a PC ready for transmission.

Alarms

Eyes Free > Audio Warning System

The GR-135 Identifier has built-in audio output tones that increase as it is moved closer to a source and the radiation becomes more intense. This aids in quickly directing the operator to the exact location of the source.

System in progress

Warning

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Key Features

Display

+ Large characters
+ Auto-scaling display
+ Large graphic display
+ Backlighting

Detector Systems

+ NaI
+ CZT (optional)
+ Neutron-solid state (optional)
+ Extended range GM

Spectrometer

+ 1024 channel MCA
+ Automatic gain stabilization
+ Thermally corrected gain
+ User-identified ROIs
+ 90cps/1MBq / Cs-137 @1 meter, max 65,000cps
+ Digital spectrum stabilization
+ Internal thermal protection and shock mounted gamma ray spectrometer

Energy Range

+ 0.02keV - 3.0MeV

Data Storage

+ Flash memory software updates
+ Data time and date stamped
+ ›187 3MeV spectra
+ ›40,000 dose measurements

Docking Station

+ Integrated battery charging
+ Thermally protected overcharging
+ Data transport to IdentiVIEW software
+ Automatic stabilization

Nuclide Library

+ Four predefined libraries / 200 nuclides
+ Custom libraries available upon request

Multi-Language Ready

+ English, German, French, Spanish, Japanese

Communications

+ RS-232

GR-135 - The Identifier
Standard deliverables

Technical specifications

Physical Dimensions

+ 172mm X 229mm X 102mm (6.75" X 9" X 4")

Weight

+ 2 kg (4.5 lbs), including batteries and all detectors

Detector / Spectrometer

+ **Sodium iodide** - Sodium iodide (NaI) 4 cu in (65 cu cm) (NaI) volume detector. 1.5"DIA x 2.2" (38mm x 55mm)
+ **Cadmium zinc telluride** (CZT) - 500mm^3
+ **Neutron** - Solid state lithium glass
+ **Geiger-Mueller** - 10R/h (100 mSv/h)

Large Display

+ 2.5" x 2.5" (65mm x 65mm)

Communications

+ 19,200 baud, RS-232 serial port

Battery

+ Battery power - 2 "D" cell rechargeable batteries
+ Battery Life - 8 hours continuous (Backlight use reduces battery life by 50%.)

Drop Tested

+ 0.75 m (2.5 ft) onto concrete (with detectors)

Environmental

+ Weather resistant and water resistant aluminum case
+ Operating temp - 15°F to 145°F (-10°C to +50°C)

RFI/EMF Shielding

+ Complies with FCC (47 CFR part15) for Class A

Earphone with volume control

1024 channel MCA

CE Certification, ISO 9002

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Note: Due to our efforts to continually improve this product, specifications, dimensions and operating procedures are subject to change without notice. All specifications and measurements are approximate, based on the standard configuration; results may vary with the application and environment.