NRC FORM 7 (07-2019) **10 CFR 110**

U. S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR NRC EXPORT OR IMPORT LICENSE, AMENDMENT, RENEWAL, OR CONSENT REQUEST(S)

(See Instructions on Pages 4 and 5)

APPROVED BY OMB: NO. 3150-0027 **EXPIRES: 02/28/2022**

PART A. FOR NRC USE ONLY	[X] Public **OR** [ ] Non-Public	Date Received: 01/12/2022 JMS
License Number: XB1359	Docket Number: 11006435	Adams Accession Number:

PART B. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS, OR CONSENT REQUESTS

(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

1. Name and Address of Applicant/Licensee	1a. Name of Applicant's Contact	1b. Applicant's Reference Number
Leidos, Inc. 2985 Scott Street Vista, California 92081	Daniel Madson	
	1c. Office Telephone Number: (858) 826-9801	1d. Office Facsimile Telephone Number: (858) 826-9901
	1e. Applicant's E-mail Address: madsond@leidos.com	

2. Type of Action Requested (Check one)		
[✓] Export (Parts B, C, E)	[ ] Amendment/Renewal	Current License Number:
[ ] Import (Parts B, D, E)	[ ] Consent Request (Parts B, C)	Current License Number:

3. Contract Number(s)	4. First Shipment Date	5. Last Shipment Date	6. Proposed Expiration Date
N/A	N/A	N/A	12/31/2025

PART C. TO BE COMPLETED FOR EXPORT LICENSES, AMENDMENTS, OR RENEWALS

(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

7. Name(s)/Address(es) of U. S. Suppliers and/or other U. S. Parties to the Export	8. Name(s)/Address(es) of Intermediate Foreign Consignee(s)	9. Name(s)/Address(es) of Ultimate Foreign Consignee(s)
Leidos, Inc. 2985 Scott Street Vista, California 92081	N/A	Government of Iraq Baghdad, Iraq
7a. Function(s) Performed/Service(s) Provided: Initial sale and recalibrations	8a. Intermediate Use(s)	9a. Ultimate End Use(s): Isotope identification and radiation surveys

10. Description of Radioactive Materials, Sealed Sources, Nuclear Facilities, Equipment, or Components; for Nuclear Equipment include Total Dollar Value of Equipment for Export	10a. Maximum Total Volume/ Element WGT (KG), or Total Activity (TBq)	10b. Max Enrichment or WGT%	10c. Max Isotope WGT (KG)
Radiation measuring instruments containing, for the purpose of internal calibration or standardization, nominally 9.25E-9 TBq (0.25 uCi) of Cs-137	Total not to exceed 9.25E-7 TBq (25 uCi)	N/A	N/A

11. Foreign origin (or obligations by country and, if known, by percentage of maximum total volume)
N/A

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License Number	Docket Number	Adams Accession Number	
XB1359	11006435		☒ Public **OR** ☐ Non-Public

PART D. TO BE COMPLETED FOR IMPORT LICENSES, AMENDMENTS, OR RENEWALS

(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

12. Name(s)/Address(es) of Foreign Suppliers and/or other Foreign Parties to Import	13. Name(s)/Address(es) of Foreign or U. S. Intermediate Consignee(s)	14. Name(s)/Address(es) of Ultimate U. S. Consignee(s)

12a. NRC Export License Number(s) (if applicable)	13a. License Number(s) / Expiration Date(s)	14a. License Number(s) / Expiration Date(s)
	13b. Intermediate Use(s)	14b. Ultimate End Use(s)

15. Description of Radioactive Materials, Sealed Sources, Nuclear Facilities	15a. Maximum Total Volume/ Element WGT (KG), or Total Activity (TBq)	15b. Max Enrichment or WGT%	15c. Max Isotope WGT (KG)

16. Foreign obligations (By country and by Percentage of Maximum Total Volume)

PART E. TO BE COMPLETED FOR ALL LICENSES, AMENDMENTS, RENEWALS OR CONSENT REQUEST(S)

(If more space is needed to complete any of the items, use Pages 3-4 first, and then attach additional sheets, if necessary.)

17. Additional Information provided on pages 3, 4, and/or separate sheets?	17a. Copies of Recipient's Authorizations Provided?
☑ Yes ☐ No	☐ Yes ☑ No

18. Certification:

I, the applicant's authorized official, hereby certify that this application is prepared in conformity with Title10, Code of Federal Regulations, and that all information provided is correct to the best of my knowledge.

18a. Print Name and Title of Authorized Official	18b. Signature – Authorized Official	18c. Date
Daniel Madson, Radiation Safety Officer		12/21/21

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XB1359	11006435		[X] Public **OR** [ ] Non-Public

Additional Information (Reference applicable block numbers from page 1 and/or page 2 for each entry)

Block 10

The GR-135 is a hand held radioisotope detector. It utilizes a docking station for charging and communications with an attached PC (if needed). The docking station also contains a 9.25 kBq (0.25 uCi) Cs-137 button source that is used to stabilize the detector when docked in cradle. A product brochure is attached.

leidos

21 December 2021

Deputy Director
Office of International Programs
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, Maryland 20852

Leidos predecessor (Science Applications International Corporation) received license XB1310 for the export of 60 Curies (2.2 TBq) of Cobalt-60 to the Interior Ministry in 2006. In 2014, Amendment 4 was issued to Leidos that allowed the distribution of 25 µCi (925 kBq) of Cs-137 as an internal calibration source to the Leidos GR-135 Hand Held Radioisotope Identifier. Each docking station source is 0.25 µCi (9.25 kBq) allowing 100 units to be exported. This source is embedded in the docking station of the hand held unit and allows the unit to stabilize against the Cs-137.

The current amendment (XB1310/06) is due to expire on 31 December 2021. The opportunities in Iraq have been limited and it was our intention to let the license expire. However, recent marketing efforts indicate a need to continue to support the 54 deployed GR-135 units and potentially additional sales of the GR-135. Knowing that we have past the point of a timely renewal of the existing license, we are requested a new export license for just the GR-135 sources and not the 60 Ci (2.2 TBq) sources of the larger Mobile VACIS units.

Attached please find:

- NRC Form 7
- GR-135 Product Brochure
- Check for $10,100

Should you have any questions or comments, please do not hesitate to contact me.

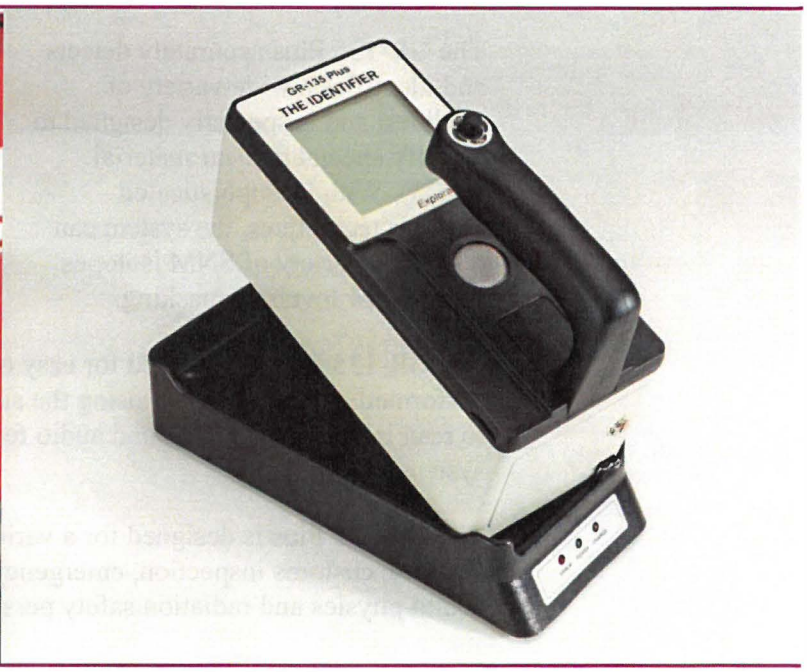
Respectfully,

Daniel Madson
Radiation Safety Officer

EXPLORANIUM® GR-135 Plus "Identifier"

Radioisotope Identification Device

Technical Specification



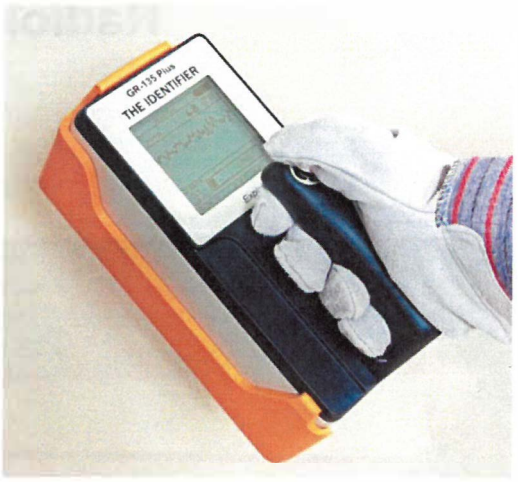
Leidos Security and Transportation Technology

leidos

TPN 09-0415

Overview

The Exploranium GR-135 Plus "Identifier" is a powerful, rugged survey meter designed to quickly and accurately detect and identify gamma and neutron sources in rugged terrain, harsh weather and other difficult conditions.



The GR-135 Plus accurately detects and identifies a wide variety of nuclides, and is specially designed to identify special nuclear material (SNM). With its sophisticated analysis techniques, the system can identify a variety of SNM isotopes despite low levels or masking.

The GR-135 Plus is designed for easy one-hand use in the field. Many functions are performed automatically or using the simple thumb joystick. The large display is easy to read in poor conditions, and audio feedback lets users search without looking at the system.

The GR-135 Plus is designed for a variety of applications, including homeland security, customs inspection, emergency response, hazardous material teams, and health physics and radiation safety personnel.

Specifications

The following table shows key specifications for the GR-135 Plus system.

Dimensions	229 L x 102 W x 172 mm H 9.0 L x 4.0 W x 6.75 inches H
Weight	2.2 kg (4.8 lbs) including batteries
Power	Rechargeable batteries: 2 NMH D cells, 1.25V, 8 hours continuous operation Alkaline batteries: 2 D cells, 1.5V, 12 hours continuous operation External AC adapter, 12 VDC, 1.0 A
Detectors	Sodium iodide (NaI) gamma detector Energy-compensated Geiger-Mueller (GM) detector Helium-3 neutron detector
Spectrometer	Energy range: 20 keV – 3.0 MeV Resolution: Better than 7.5% FWHM at 662 keV Automatic gain stabilization, digital spectrum stabilization
Dose meter range	NaI detector: 5 nSv/h – 50 µSv/h (0.5 µR/h – 5 mR/h) GM detector: 50 µSv/h – 10 mSv/h (5 mR/h – 1R/h), extended range: 10 mSv/h – 100 mSv/h (1 R/h – 10 R/h)
Display	Monochrome LCD, 67 x 67 mm (2.6 x 2.6 inches) User-controlled backlight
Data storage	Search mode: 40,000 samples (12 hours at maximum sampling rate) Identify mode: 185 spectra
Data upload	RS-232 connection (19,200 bps) through docking station
Environment	Operating temperature: –10° to 50° C (14° to 122° F) Storage temperature: –20° to 60° C (–4° to 140° F) Relative humidity: up to 93% at 40° C (104° F) Weatherproof, dust-sealed, water splash-proof
Electromagnetic (EM) compliance	CE and ANSI N42.34 requirements for safety, RFI and EMI

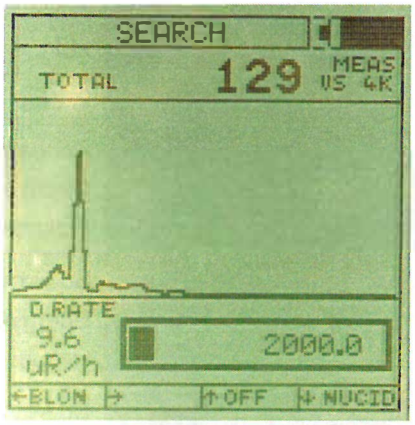
Operating Characteristics

Operating Modes

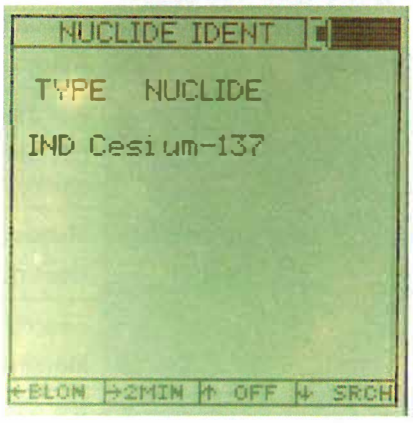
Search

Search mode is the default operating mode. The system automatically enters Search mode when removed from the docking station. In Search mode, the system continuously displays the following information:

- Counts per second in numeric and graphic format
- Dose rate
- Threshold for the maximum dose rate alarm



To provide this information, the system samples the current radiation at a regular interval of 1–60 seconds (set by the user). The system stores each sample for later review or upload.



Identify

While in Search mode, a single push of the joystick causes the GR-135 Plus to to sample and analyze the current gamma spectrum and display the specific nuclides it identifies.

Nuclide Identification

Spectrum Analysis

The GR-135 Plus uses a digital spectrometer and internal nuclide libraries to analyze the current gamma spectrum and identify specific nuclides. The system displays the type (NORM, INDustrial, MEDical or SNM), name, and isotope mass of each nuclide.

The system typically samples the current gamma spectrum for 60 seconds in order to perform this analysis. To improve the analysis for low radiation levels, the user can repeat the operation to increase the sample time to two minutes. The system stores each spectrum sample for later review or upload.

Nuclide Libraries

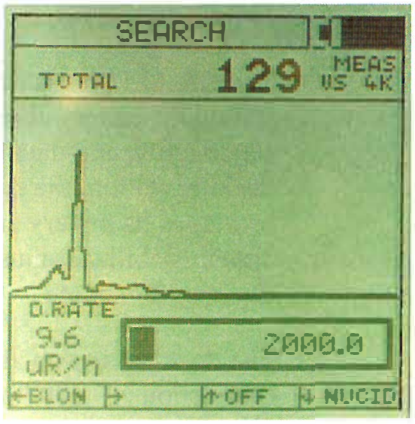
The GR-135 Plus uses internal nuclide libraries to identify nuclides by their gamma spectra. The system is supplied with four predefined libraries: Standard, Medical, Industrial and IAEA. The user can switch between libraries at any time.

User Interface

Display

The GR-135 Plus displays text and graphic data on a monochrome LCD display. To enhance visibility in difficult conditions, text and graphics are large and clear, and the user can activate a backlight for the display.

Text can be displayed in many languages, including English, German, Spanish, French, Japanese and others. The user can change the language at any time.



Joystick

The user controls the system using a thumb joystick at the tip of the handle. The joystick enables the operator to carry and operate the system with one hand, often without looking at the system.

Audio

The GR-135 Plus provides audible signals through its built-in loudspeaker or earphone. These signals enable the user to operate the system in many situations without looking at it.

- In Search mode, the system indicates the current radiation intensity through a continuous variable tone (higher pitch indicates greater intensity). This tone enables the user to search without looking at the system, and can help the user locate a source quickly.
- The system sounds alarms to indicate high radiation levels, neutron radiation, low battery, and other conditions that may warrant the user's attention.

Data Storage

The GR-135 Plus can store 40,000 Search-mode readings (CPS and dose rate). At the minimum sampling interval of one second, the system can store about 12 hours of search data. The system can also store 185 Identify-mode spectra.

The system stores these items automatically; no user action is required. Each stored item includes a date/time stamp. The system includes a lithium back-up battery to preserve stored data if main battery power is lost.

Docking Station

The GR-135 Plus is supplied with a docking station for battery charging, system stabilization and data upload. While in the docking station, the system continuously recharges its battery and performs automatic system stabilization using an internal cesium-137 source.

The docking station also provides an RS-232 connection (19,200 bps) to upload data from the system to a computer for analysis and archiving, and to download nuclide libraries to the system.

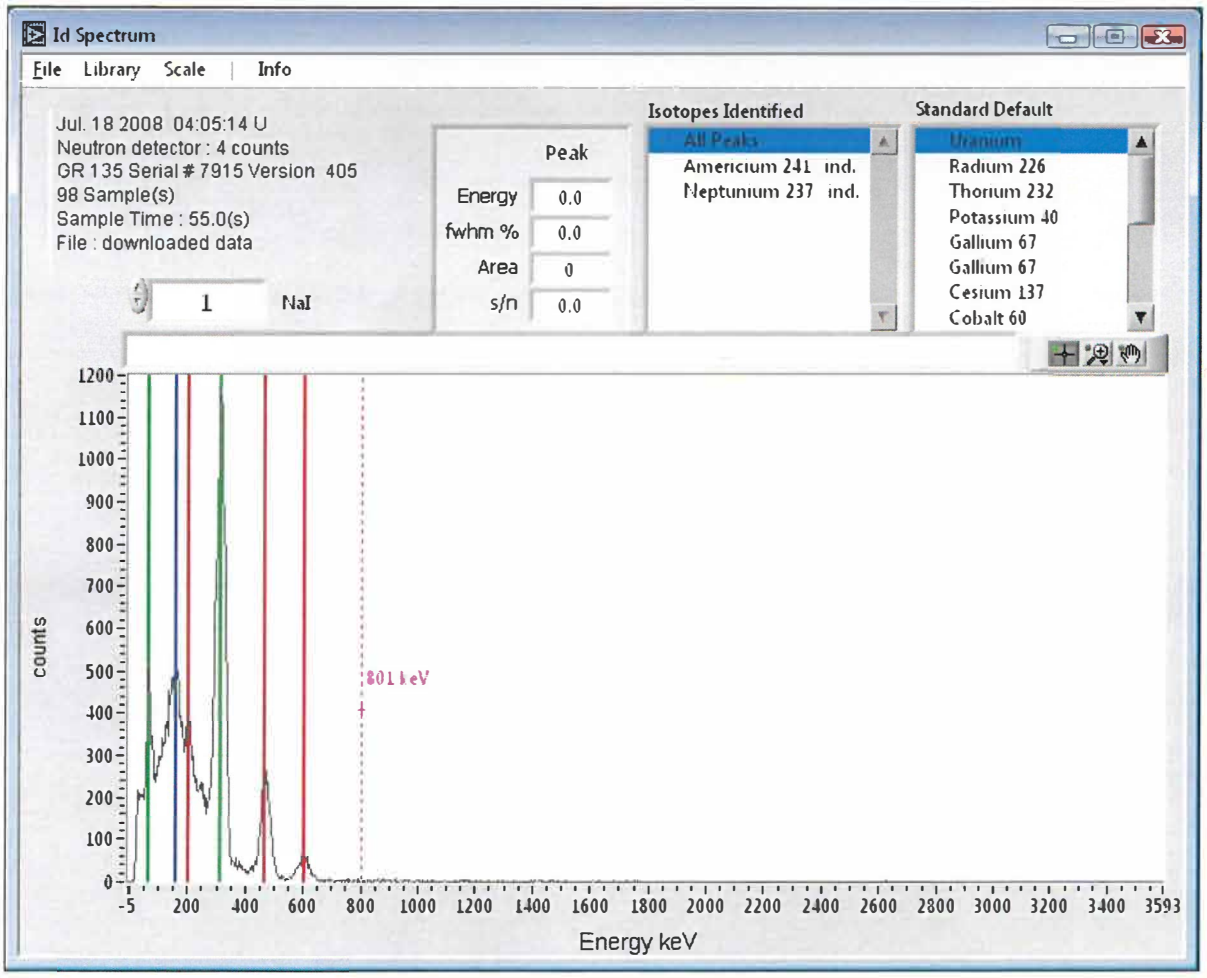
Manual Mode

The GR-135 Plus Manual mode lets the user perform the following functions:

- Stabilization: Tune the system (automatically or manually) to adjust for changes in temperature, using a small source in the docking station.
- Data memory: Check or erase memory, and re-analyze stored scan data.
- Setup: Set various operating parameters, including sample time for Search and Identify modes, radiation alarm levels, text language, and many others.
- Maintenance: View the current nuclide library, restore default system parameters, and others.

IdentiView Software for Data Upload and Analysis

The GR-135 Plus is supplied with Leidos IdentiView software for standard Windows computers. IdentiView enables the user to upload data (search readings and analysis spectra) from the GR-135 Plus to the computer, and to review analysis spectra (see sample screen below). IdentiView uploads data from the GR-135 Plus automatically; the user does not have to initiate the upload process.



IdentiView software lets users upload GR-135 data to Windows computers and review analysis spectra.