ADVANCED TECHNOLOGY FOR A SAFER WORLD

identiFINDER

The identiFINDER™ instrument series are a family of compact and lightweight instruments for finding and identifying radionuclides. The integrated display and straightforward three push-button operation ensures ease-of-use in the field. The accessories supplied with every identiFINDER ensure that the field user can easily reach-back to the experts with useful data, should the need arise.

The identiFINDER instrument series are user-friendly instruments that identify man-made and natural radionuclides and combines high sensitivity with a wide dose rate range. The instrument has a dual purpose design to facilitate locating missing or offending sources and then identifying the source via its gamma spectrometry and nuclide identification capability. The identiFINDER is a complete digital gamma spectroscopy and dose rate system. It integrates multi-channel analyzer, amplifier, high voltage power supply, and memory with an integral scintillation and GM detector. The identiFINDER is ideally suited for homeland security, industrial, medical, nuclear power generation and nuclear fuel cycle applications.

The identiFINDER also is available as an optional LaBR version, providing high-resolution spectroscopy at room temperature. This version delivers laboratory-type performance in a lightweight, hand-held device, enabling improved results for difficult identifications.

Features

• Top-of-the-line Ultra model available with patented pulsed LED stabilization and LTI deconvolution which no longer requires a built-in source for precise stabilization (±0.5% typical peak shift accuracy)
• Supplied with larger, more sensitive NaI(Tl) gamma detectors
• New, faster (5 to 10 x quicker identification) and lower power (longer battery life) electronics
• New, more rugged and ergonomic housing for easier use in the field
• Optional neutron detection now 50% more sensitive due to new 3He detector

Main components of the identiFINDER

LAURUS Systems, Inc. - Ph: 410-465-5558 - Fax: 410-465-5257 - www.LaurusSystems.com

identiFINDER™ ULTRA

New Generation, Multi-purpose Hand-Held Radionuclide Identification Device with LED stabilization

The identiFINDER[ULTRA] incorporates an unique method of stabilization that does not require a radioactive source of any type:

- Stabilization of the photo multiplier gain is accomplished by means of a pulsed LED
- Measurement of the effective NaI(Tl) crystal temperature is determined by pulse shape analysis
- Gain shifts due to the measured temperature changes of the crystal are corrected

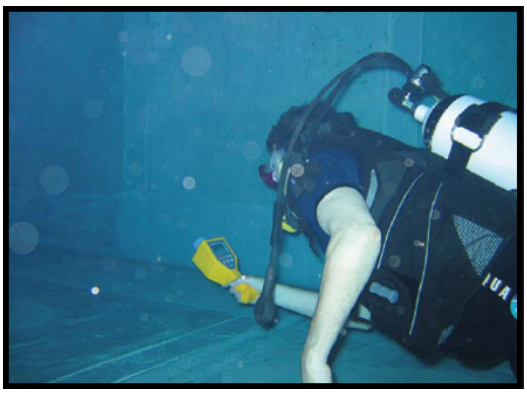
The identiFINDER[ULTRA] is available with or without an optional ^{3}He neutron detector.
A watertight identiFINDER[ULTRA] is also available.

identiFINDER™ -NG

Standard, Multi-purpose Hand-Held Radionuclide Identification Device

The identiFINDER-NG is a complete, portable, digital gamma spectrometer and dose rate measurement instrument. It integrates a digital multi-channel analyzer, amplifier, high voltage power supply and memory into a lightweight, easy to use device. In the standard identiFINDER Series an integrated ^{137}Cs source of about 500 Bq (15 nCi) is used for calibration and stabilization.

The identiFINDER is available with or without an optional ^{3}He neutron detector.



identiFINDER™ -U

Ruggedized, Underwater Hand-Held Radionuclide Identification Device

The identiFINDER-U provides all of the features of the standard RIID identiFINDER in an underwater version. The identiFINDER-U is suitable for harsh, high humidity environments often encountered by fire fighters, civil defense workers, nuclear power plants and more. The identiFINDER-U is watertight to depths down to 10 m (33 feet).

The identiFINDER is available with or without an optional ^{3}He neutron detector.

identiFINDER™ -X

Telescopic Hand-Held Radionuclide Identification Device

The identiFINDER-X is a telescopic version of the identiFINDER. The telescopic handle extends the identiFINDER-X detector 2.2 m (7.2 feet) away from the operator.

The identiFINDER is available with or without an optional ^{3}He neutron detector.

Specifications

Features		
Functions	Nuclide identification, spectrum analysis, dose rate calculation, total dose display, source finding	
Integrated Electronics	Multi-Channel-Analyzer, PMT preamplifier, spectroscopy amplifier, power supply	
	Standard Instruments:	identiFINDER-NG+ with 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI & GM detectors identiFINDER-NGH+ with 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI, ^{3}He & GM detectors identiFINDER-NG Ultra with 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI & GM detectors identiFINDER-NGH Ultra with 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI, ^{3}He & GM detectors
	Specials (-L versions):	with 30.5 mm x 35.5 mm (1.2 in x 1.4 in) LaBr with a resolution of <3.3% at 662 keV
	Watertight (-U versions):	up to 1 atm (10 m or 33 ft) immersion
	Telescopic (-X versions):	with ~1.2 m to 2.4 m (~4 ft to 8 ft) extension
	Safeguards:	with 25.4 mm x 25.4 mm (1 in x 1 in) NaI (Tl) tungsten shielded detector and specialized SNM firmware
Stabilization	In the non-Ultra models, a built-in ^{137}Cs reference source (<15 nCi/500 Bq) is used for online stabilization and in-situ calibration without user interaction. With either stabilization method this special identiFINDER feature allows operation over temperatures between -20°C and +55°C (-4°F and +122°F). The Ultra provides the user with the benefits of LED stabilization technology with or without a small 3nCi Cs137 source, as preferred for implementation and transportation.	
Software	The identiFINDER provides for easy storage of up to 100 spectra and rapid transfer to a PC for reach-back and/or qualitative in-situ analysis with the software supplied.	
User Selectable Nuclide Library	There are 74 reference spectra of radionuclides stored in six libraries: Nuclear, Industrial, Medical, U.S. Customs Service, OSI (On Site Inspection by IAEA officials), and Security. All sub-libraries except OSI can be edited by adding or deleting specific nuclides from the list. Ten reference spectra can be measured by the user and added to the predefined library spectra. Identification is done by a template-matching correlation procedure.	

Physical Dimensions	
Weight	1250 g (2.75 lb) with 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI and batteries
Temperature Range	-20°C to +55°C (-4°F to +122°F)
Protection	Water proof, dust tight
Protection Class	IP 54
Battery Life	10-12 hours; common batteries can also be used (i.e., emergency situations)
Dimensions	248.92 mm x 94 mm x 76.2 mm (9.8 in x 3.7 in x 3 in)
Spectrometry System Specifications	
HV-Bias	200 V to 1275 V automatically set to suit individual detector
Shaping Type	Digital filter
INL, Top 99%	<0.05%
DNL, Top 99%	<0.1%
Spectrum Length	1024 channels
Pileup Rejection	<100 nS, pulse pair res.
Throughput Rate	>100,000 cps
Input Rate	>350,000 cps
Spectrum Memory	100 spectra at 1024 channels
Real Time Presets	1 s to 1,000,000 s
Live Time Presets	1 s to 1,000,000 s
Dose/ Dose Measurement Specifications	
Sensitivity	>10,000 cps/mrem for 35.5 mm x 50.8 mm (1.4 in x 2 in) NaI (Tl) detector
Dose-rate Range	1 µrem/h to 100 rem/h max dose-rate equivalent to max dose-rate of NAI
Dose Range	10 µrem to 100 rem
Energy Range	NaI: 15 keV to 3.0 MeV; GM: 60 keV to 1.6 MeV
Alarm Levels	Gamma: Four preset levels
Neutron	Separate neutron alarms for ^{3}He model, with blue indicator lamp

Front view of the identiFINDER with

1. Battery compartment lock
2. ON/OFF button
3. Blue LED (neutron alarm)
4. Selection buttons
5. Command line
6. Red LED (gamma alarm)
7. Internal GM tube
8. Internal ^{3}He tube (neutron detection)
9. Internal NaI(Tl) scintillation detector

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