

# identiFINDER™

UNIQUE HAND-HELD RADIONUCLIDE IDENTIFICATION DEVICE



## APPLICATIONS

- Customs / Border Security
- First Responders
- Civil Defense
- Military / Police
- Nuclear / Environmental
- Steel / Scrap Metal Industry
- Nuclear Medicine

## BENEFITS

- Detects, locates, measures and identifies radionuclides
- Automatic calibration and continuous stabilization
- Digital signal processing
- Easy to operate
- Visible, audible and tactile alarms
- Nuclide ID based on template matching



NEW THREATS.  
NEW THINKING.™

The identiFINDER instrument series is a family of hand-held, digital gamma spectrometers. Every identiFINDER is able to rapidly locate, accurately measure and precisely identify sources or contaminations from gamma radiation. The ability to detect X-ray sources as well as the presence of neutrons in the radiation field via an optional neutron detector allows a wide application scope.

This standard identiFINDER includes a 1.4" diameter x 2" long NaI (Tl) detector plus a GM tube, for high gamma dose rate measurements. With the exception of the identiFINDER-X, every unit is supplied with a carrying holster, wrist strap, serial cable, battery pack for rechargeable and non-rechargeable batteries, charging unit, download and analysis software and a carrying case with shoulder strap.

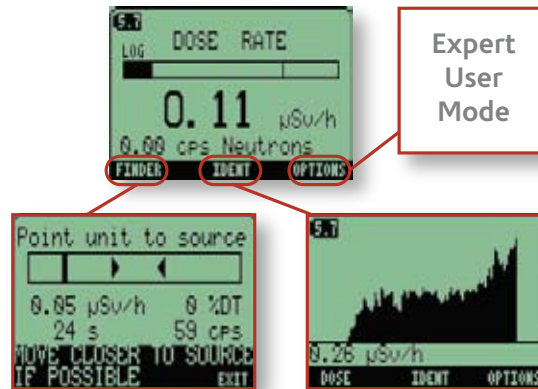
Individual identiFINDER models are available with different types and sizes of detectors and special software. An optional, sealed <sup>3</sup>He neutron detector with internal and external neutron moderator can be added for neutron detection.

Variations in normal operating conditions can affect the performance of radio-nuclide identification devices (RID) with scintillation detectors such as NaI(Tl) and LaBr<sub>3</sub>. Dramatic temperature variations can affect the scintillation detector and cause instabilities and non-linearities in the electronics. High count rate changes will also impact the peak position in a spectrum. The identiFINDER family of instruments has been developed to correct all these circumstances through different solutions for automatic calibration and continuous stabilization.

## Easy to Operate

### Two operation modes:

- **EASY** (automatic mode): dose rate, finder and nuclide identification parameters are password protected in EASY mode.
- **EXPERT MODE**: full functionality of all capabilities including access for changing parameters/settings.



## Three button operation plus ON/OFF

All components clearly marked:

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



## identiFINDER™ ULTRA

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

The identiFINDER<sup>ULTRA</sup> 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<sup>ULTRA</sup> is available with or without an optional <sup>3</sup>He neutron detector.  
A watertight identiFINDER<sup>ULTRA</sup> 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 <sup>137</sup>Cs source of about 500 Bq (15 nCi) is used for calibration and stabilization.

The identiFINDER is available with or without an optional <sup>3</sup>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 <sup>3</sup>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 <sup>3</sup>He neutron detector.



## SPECIFICATIONS

Detector types	Nal(Tl) or LaBr <sub>3</sub> (Ce <sup>3+</sup> ) Ø 1.4" x 2" Nal(Tl) Ø 1.2" x 1.2" LaBr <sub>3</sub> (Ce <sup>3+</sup> )
Stabilization	Integrated <sup>137</sup> Cs source and/or sourceless ULTRA detector stabilization (pat. pend.)
Stability	±1.0% to ±1.5% (typical) (-15°C to +55°C, 30 to 100,000 cps)
Calibration	Automatic energy calibration and stabilization
Shaping	Digital filter
Resolution	7.0% to 7.5% at 662 keV (Nal) 2.7% to 3.5% at 662 keV (LaBr <sub>3</sub> )
Throughput rate	> 100,000 cps
Energy range	15 keV to 3 MeV
INL, top 99%	< 0.05%
DNL, top 99%	< 0.1%
Spectrum characteristics	1024 channels; linearized, calibrated, and stabilized energy scale
Spectrum memory	100 spectra at 1024 channels
Real time presets	1 s – 1,000,000 s or none
Live time presets	1 s – 1,000,000 s or none
Dose rate range (total)	0.01 µSv/h to 1 Sv/h or 1 µrem/h to 100 rem/h
Dose rate range Nal	0.01 µSv/h to 500 µSv/h
Dose rate range GM Tube	500 µSv/h to 1,000 mSv/h
Dose range	0.1 µSv to 1 Sv or 10 µrem to 100 rem
Alarm levels	5 adjustable preset levels
Weight	2.75 lbs (1250 g) including batteries and scintillation detector
Temperature range	5 °F to 131 °F (-15 °C to +55 °C)
Dimensions	9.3" x 3.7" x 3" (235 x 93 x 75 mm) 10" x 3.7" x 3.2" (255 x 93 x 81 mm) U-version
Operating time	10 hours with 2500 mAh NiMH in dose rate mode
Accessories	AC adapter for stationary use and recharging powerPACK plus; RS232 and USB cables and connector box; holster, carrying case, optional: earphones
Keyboard	3 soft buttons + On/Off
Alarm indicators	Light (red and blue LEDs), sound, and vibration
External power indicator	LED (green) on the rear side
Charger indicator	LED (orange) on the rear side
Display type	Monochrome LCD with backlight, 2.4" x 1.7" (61 x 43 mm)
Interface	RS232 and USB
Battery pack	powerPACK plus (rechargeable)
Standard batteries	powerPACK for 4 pieces AA-size 1.2 V - 1.8 V batteries (rechargeable NiMH, NiCd or non- rechargeable Alkaline, MnO, Li)

## FEATURES

- Dose rate display, radiation guard and alarm annunciator, source finder, gamma ray spectrometer, spectrum analyzer, nuclide identifier, spectrum memory, dose rate logger, neutron indicator (optional)
- Integrated ancillary detectors: Geiger-Mueller tube (GM tube) for high dose rate measurements. Moderated <sup>3</sup>He tube for neutron detection
- Remote Control: RS232 interface, USB adapter; setup and control including online measurements
- Language: English, French, German, Russian, Spanish
- Integrated electronics: Digital Multi-Channel Analyzer for main detector: Flash ADC, Digital Signal Processor (DSP), Enhanced Filter Coprocessor (EFCOP); LED pulser; HV power supplies for main and ancillary detectors; Shaping Amplifiers and Discriminators for ancillary detectors (GM tube, <sup>3</sup>He tube); serial interface (RS232, USB)

### Sales Europe, Asia, Africa and Oceania

ICx Technologies GmbH  
Piepersberg 12  
42653 Solingen, Germany  
T + 49 212 222090  
F + 49 212 201045

### Sales North and South America

ICx Radiation  
100 Midland Road  
Oak Ridge, TN 37830, USA  
T + 1.865.220.8700  
F + 1.865.220.7181

radiation.icxt.com  
www.icxt.com

