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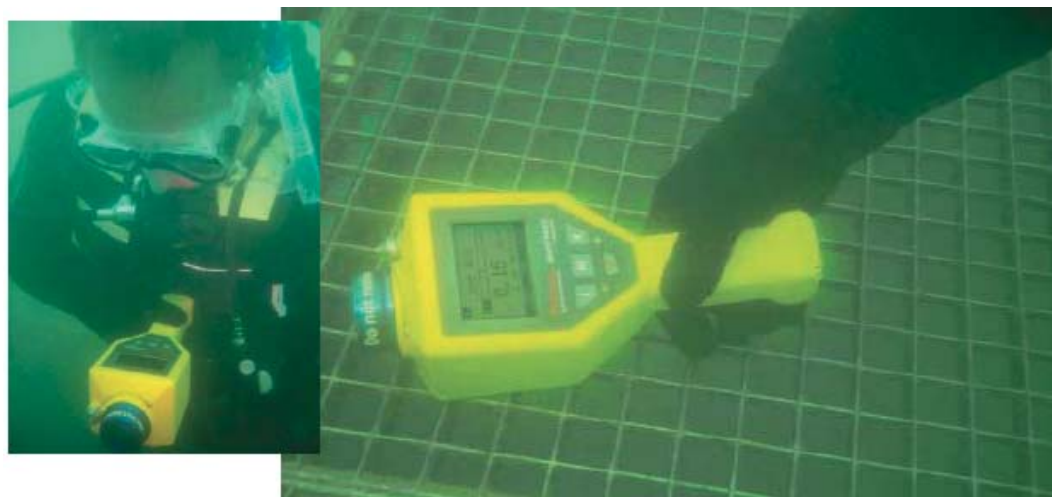
defence

IdentiFINDER U SeaSpec

A ruggedised underwater Hand-Held Radioisotope Identification Device.

The identiFINDER U Sea Spec is a hand-held instrument for underwater portable gamma spectrometry with a doserate display, an accumulated dose display, a source finder and an automatic nuclide identification capability. The unit's integrated display features a three push-button operation ensuring easy control.

The instrument is waterproof to 1 atm (10m/33').



Applications

- ▶ Coast Guard;
- ▶ Contamination monitoring;
- ▶ Emergency response;
- ▶ Environment control;
- ▶ Leak identification;
- ▶ Navy and marine;
- ▶ Scrap metal analysis;
- ▶ Transportation safety;
- ▶ Underwater covert operations;
- ▶ Waste monitoring.

The identiFINDER U SeaSpec is a user-friendly instrument that distinguishes between man-made and natural isotopes and combines high sensitivity with a wide dose rate range.

The instrument is of a dual purpose design to facilitate locating missing or offending sources and identifying the source via its gamma spectrometry and nuclide identification capability.

WI Code: 10532

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IdentiFINDER U SeaSpec

The identiFINDER U SeaSpec is a complete digital gamma spectroscopy and dose rate system; it integrates a multi-channel analyser, amplifier, high voltage power supply, and memory together with an integral scintillation detector.

The identiFINDER U SeaSpec is suited for remote applications, advanced warning systems, hazardous environments and nuclear inventory monitoring. It is used with a standard 1.2 x 1.5" (30 mm x 38 mm) NaI (TI) detector or CZT detector, or the optional available BGO or CdWo detector as well as CdZnTe.

It has a built-in 137Cs reference source (< 500 Bq/15 nCi) is used for online stabilization and in-situ calibration without user interaction.

This U SeaSpec feature allows operational temperatures between -15 and 55 °C (4 to 131 °F) and large temperature gradients.

It can be connected to a desktop or notebook PC through a water-tight connector; there is no need to open the instrument to change the battery or download to PC.

The unit provides qualitative and quantitative in-situ analysis with optional winTMCA-pro software.

Up to 60 spectra of 1024 channels can be stored in the unit and directly transferred to any PC for further advanced analysis



User Selectable Nuclide Library

More than 72 reference spectra of gamma nuclides are categorised based on their main practical occurrence, including:

- ▶ **Medical:** 131I; 99mTc; 67Ga; 123I; 125I; 111In; 103Pd; 201Tl;
- ▶ **OSI:** 140Ba; 116Cd; 141Ce; 144Ce; 132I; 140La; 99Mo; 96Nb; 147Nd; 144Pr; 106Rh; 103Ru; 125Sb; 132Te; 131mXe; 133Xe; 133mXe; 135Xe; 95Zr;
- ▶ **Nuclear:** 239Pu ; 233U; 235U; 237Np;
- ▶ **Industrial:** 110mAg; 241Am; 133Ba; 207Bi; 109Cd; 57Co; 58Co; 60Co; 134Cs; 137Cs; 51Cr; 152Eu; 155Eu; 59Fe; 192Ir; 40K; 54Mn; 22Na; 226Ra; 75Se; 232Th-232; 238U; 65Zn; 228Ac; 109mAg; 7Be; 212Bi; 214Bi; 139Ce; 181Hf; 133I; 134I; 135I; 56Mn; 214Pb; 106Ru; 124Sb; 127Sb; 208Tl; 88Y; Annihilation Radiation.

The operator can choose from 6 sub-libraries (Nuclear, Industrial, Medical, Customs, OSI and USER). All sub-libraries, except the OSI library can be edited by adding or deleting specific nuclides from the list.

Ten (10) reference spectra can be measured by the user and added to the predefined library spectra. Identification is done by a template-matching correlation procedure.



Functions

- ▶ Nuclide identification;
- ▶ Spectrum analysis;
- ▶ Dose rate calculation;
- ▶ Total dose display;
- ▶ Source finding;

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IdentiFINDER U SeaSpec

- ▶ Option -Uranium enrichment calculation, Pu-U-Th-Verification, Determination of active length of the fuel elements (Tungsten-shielded NaI).

Features

- ▶ Integrated electronics: Multi-Channel-Analyzer, PMT preamplifier, spectroscopy amplifier, power supply;
- ▶ Integrated detectors: 31 x 38 mm (1.2 x 1.5") NaI (TI) (standard);
- ▶ Option: Larger 38 x 51 mm (1.4 x 2") NaI (TI) detector, 25 x 25 mm (1 x 1") NaI (TI) tungsten shielded; 35 x 90 mm (1.4 x 3.5") NaI (TI); 10 x 10 x 5 mm³ (0.06 x 0.06 x 0.03 in³) CdZnTe; GM tube for high dose rates; ³He detector for neutron indication.

Physical Specifications

- ▶ Weight: 1,200 gms with 25 x 50mm (1 x 2") NaI and batteries;
- ▶ Temperature range: -15 to 55 °C (4 to 131 °F);
- ▶ Protection: Waterproof to 10m (33') or 1 atm;
- ▶ Protection class: IP 65;
- ▶ Drop test: 1 metre (3.3') on concrete (w/o detector);
- ▶ Dimensions: 23cm x 9cm x 7cm (9" x 3.5" x 2.75").

Spectrometry System Specifications

- ▶ Detector Type: NaI, BGO, CdZnTe, Plastic, Tungsten shielded NaI, larger NaI detectors available;
- ▶ HV-Bias: 50 - 1275 V selectable;
- ▶ Shaping type: Digital filter;
- ▶ INL, top 99%: >0.05%;
- ▶ DNL, top 99%: >0.01%;
- ▶ Spectrum length: 1024 channels;
- ▶ Pileup rejection: 400 ns, pulse pair res;
- ▶ Throughput rate: >50,000 cps;
- ▶ Input rate: >500,000 cps;
- ▶ Spectrum memory: 70 spectra at 1024 channels;
- ▶ Real time presets: 1 s - 1,000,000 s;
- ▶ Live time presets: 1 s - 1,000,000 s.

Dose / Dose Measurement Specifications

- ▶ Sensitivity: >500 cps/ μSv/h (>5000 cps/mrem/h) for 2.5 x 5 cm (1 x 2") NaI (TI) detector;
- ▶ Dose-rate range: 10 nSv/h - 1 Sv/h (1 μrem/h - 100 rem/h);
- ▶ Dose range: 100 nSv - 1 Sv (10 μrem - 100 rem);
- ▶ Energy range: NaI: 20keV - 2.5 MeV; GM: 60 keV - 1.6 MeV;
- ▶ Alarm levels: Four preset levels.

Special Features

- ▶ Waterproof to 1 ATM (10m/33');
- ▶ Stabilisation: Temperature stabilisation; HV current stabilization; Internal ¹³⁷Cs reference source for stabilisation;
- ▶ Calibration: Automatic energy calibration; Detector efficiency calibration; Automatic dose calibration;
- ▶ Remote control: Real time measurements, setup and control;
- ▶ Language: German, English, French, Japanese (katakana), Russian.



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