

HIGH EFFICIENT RADIONUCLIDE IDENTIFYING DEVICE (RID) GRAETZ RADXPLORE-IDENT

Product features

The GRAETZ RadXplore-ident is an ultra-compact, robust and sensitive radionuclide identifier (RID), which features a wide energy range, high throughput and excellent stability with outstanding application possibilities.



System Overview

Technology

Radionuclide Identification Device (RID)

Scope

Detection of gamma, beta, neutron, and cosmic radiation emitted from natural and man-made sources. Identification of special nuclear material, industrial, medical, and natural radioactive sources. Measurement of x-ray and gamma exposure.

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Detector-Options

| | |
|-------|--|
| BGO | Gamma and thermal neutron detection Material: $\text{Bi}_4\text{Ge}_3\text{O}_{12}$ (Gd_2O_3) Size: 51 Ø x 25 mm ³ (2" x 1") PHR: 9.0 ±1.5 % @ 662 keV |
| NAI | Gamma, fast and thermal neutron detection Material: NaI:Tl Size: 51 Ø x 51 mm ³ (2" x 2") PHR: 6.0 ±0.5 % @ 662 keV |
| CLLBC | Gamma and thermal neutron detection Material: $\text{Cs}_2\text{LiLa}(\text{Br},\text{Cl})_6:\text{Ce}$ Size: 36 Ø x 38 mm ³ (1.4" x 1.5") PHR: 3.8 ±0.3 % @ 662 keV |
| LABR | Gamma detection (neutron detection optional) Material: $\text{LaBr}_3:(\text{Ce},\text{Sr})$ Size: 38 Ø x 38 mm ³ (1.5" x 1.5") PHR: 2.4 ±0.3 % @ 662 keV |
| M600 | Gamma and fast neutron detection Material: Tissue equivalent plastic scintillator M600 Size: 51 Ø x 51 mm ³ (2" x 2") |

Physical

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|------------------------|---|
| Weight | 950 - 1,250 g (2 - 2.7 lbs) depending on detector type |
| Dimensions (L x H x W) | 235 x 88 x 92 mm (9.3" x 3.5" x 3.6") with rubber enclosure |
| Housing material | Machined aluminum |

Operating Conditions

| | |
|-----------------------|---|
| Operating temperature | -20 °C to 50 °C (-4 °F to 122 °F) |
| Operating humidity | Up to 93 % at 40 °C (104 °F) non-condensing |
| Protection rating | IP68 according to IEC 60529 submersible, up to 10 m (33 ft) 30 min |

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Operating Modes

| | |
|--------------------|--|
| Dose Rate | Gamma dose rate and neutron count rate display |
| Finder | Rate history display |
| Directional Finder | Source strength and direction |
| Identification | Gamma spectrum measurement and identification |

Performance

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|-------------------------------------|---|
| Energy range | 10 keV _{ee} – 1000 MeV _{ee} (Total) 10 keV – 10 MeV (Gamma and X-rays) 10 MeV _{ee} – 1000 MeV _{ee} (cosmic radiation, muons, charged particles) |
| Dose rate range (Cs-137) | 10 nSv/h – 10 mSv/h (1 µrem/h – 1 rem/h) ±30 % |
| Dose rate range ID Mode (Cs-137) | 10 nSv/h – 200 µSv/h (1 µrem/h – 20 mrem/h) |
| Dose rate overload range (Cs-137) | 0.2 mSv/h – 500 mSv/h (0.02 rem/h – 50 rem/h) |
| Maximum input count rate in ID mode | 1 million cps (Cs-137) |
| Gamma sensitivity | 1,850 cps/µSv/h (Cs-137) |
| Neutrons | According to ANSI N42.34 |
| Neutron sensitivity | ~5 cps/nv (BGO) |
| Power-up time | Operative in less than one minute |
| Identification time | Identification of 1 µCi Cs-137 in 3 s (5 cm to crystal front) |
| Linearisation | Real-time linearization of gamma energy |
| User-interface update frequency | 0.5 s |
| Nuclide library | > 70 Nuclides (exceeding IEC 62755, ANSI N42.34) |

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Power Module PM1 Li-Ion 240

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|----------------------------|--|
| Run time at 20 °C (68 °F) | > 6 h continuous use (non-alarm state) |
| Run time at -20 °C (12 °F) | > 1 h continuous use (non-alarm state) |
| Operating temperature | -20 °C to 50 °C (-4 °F to 122 °F) |
| Charging temperature | 0 °C to 40 °C (+32 °F to 104 °F) |
| Storage temperature | -20 °C to 50 °C (-4 °F to 122 °F) |

Hardware

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|--------------|---|
| Data Storage | 30 GB internal memory |
| Wi-Fi | Wi-Fi access point 2,4 GHz 802.11 g, encryption WPA-PSK AES |
| BlueTooth | BlueTooth LE for connection to the Mobile App |
| GPS | Navstar, Galileo, Glonass, Beidou |
| USB-C | Power and data port |

Software

| | |
|----------------|---|
| Web server | Web Interface for setup, data download and remote control |
| Data streaming | Support of the Sigma streaming API via BT tethering |
| Data reporting | Support of the Sigma reporting API via BT tethering |
| Easy finder | Convenient directional finder mode for locating gamma sources |
| Session data | Continuously tracking of GPS position, dose rate, alarms and identification results |

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Mobile App

| | |
|-----------------------------|---|
| Supported operating systems | Apple iOS, Android |
| Remote setup | Adjustment of all instrument settings |
| Remote operation | Remote operation and observation of the instrument |
| Reachback | Reachback functionality (e-mail with attached ANSI N42.42 data) |

Standards Compliance

| | |
|---------------------|------------------------|
| RID | IEC 62327, ANSI N42.34 |
| Environmental tests | IEC 62706 |
| Data format | ANSI N42.42, IEC 62755 |

For more information on this product, please visit our website:
<https://graetz-strahlungsmesstechnik.com/radxplore-en>
or scan the following QR code.

