Graetz
Strahlungsmeßtechnik

ICS SCHNEIDER MESSTECHNIK

PRODUCT DATA SHEET

01-2023
Subject to change

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.

ICS Schneider Messtechnik GmbH
Briesestraße 59
D-16562 Hohen Neuendorf / OT Bergfelde

Tel.: 03303 / 50 40 66
Fax.: 03303 / 50 40 68

info@ics-schneider.de
www.ics-schneider.de

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Detector-Options	
BGO	Gamma and thermal neutron detection Material: $Bi_4Ge_3O_{12}$ (Gd_2O_3) Size: 51 Ø x 25 mm³ (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 mm³ (2“ x 2“) PHR: 6.0 ±0.5 % @ 662 keV
CLLBC	Gamma and thermal neutron detection Material: $Cs_2LiLa(Br,Cl)_6$:Ce Size: 36 Ø x 38 mm³ (1.4“ x 1.5“) PHR: 3.8 ±0.3 % @ 662 keV
LABR	Gamma detection (neutron detection optional) Material: $LaBr_3$:(Ce,Sr) Size: 38 Ø x 38 mm³ (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 mm³ (2“ x 2“)

Physical	
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	
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	
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	
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

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