



Radiation Monitors



Experience & Expertise

Radiation monitoring systems for a range of applications

Radhound

The Radhound monitors (pages 3 - 7) are ideal for use within a large range of sectors, including academia, pharmaceutical research and nuclear medicine/PET. These meters are compatible with a broad range of Geiger, sodium iodide and plastic scintillator based probes to cover the whole spectrum of contamination and dose rate measurement requirements.

Tracerco

The Tracerco range (pages 8 - 9) is unique, robust and innovative – great for use in the laboratory or by radiation protection professionals out in the field.

Hidex

Hidex is one of the world's leading manufacturers of innovative instrumentation for radiation measurements. The company produces a range of liquid scintillation counters and gamma counters (page 11) used in a wide variety of applications within the field of radiation measurement, ranging from low-level measurements of naturally-occurring isotopes to providing radiation protection and security screening for industrial and environmental applications.



Radhound Multi-purpose Digital Radiation Meter

A multi-purpose digital radiation survey meter suitable for all your contamination monitoring and radiation protection requirements, the Radhound is a cost effective, feature packed digital radiation monitor that is simple and easy to use.

Count rate is displayed in large clear numbers and also on a bar scale. Our smart averaging software means a steady display that can be read with confidence, yet provides a fast response.

For source finding, one button push changes the display to a histogram plot. Alpha and Beta/Gamma counts can be displayed separately or on the same screen.

For surveying operations the Radhound also has an integrator mode.

- Clear digital LCD display with backlight.
- GM and scintillation detector options.
- Scaler timer function.
- Ergonomic tilt stand.
- Wall mountable.
- Fully adjustable alarm levels.



Radhound X/E and X/I

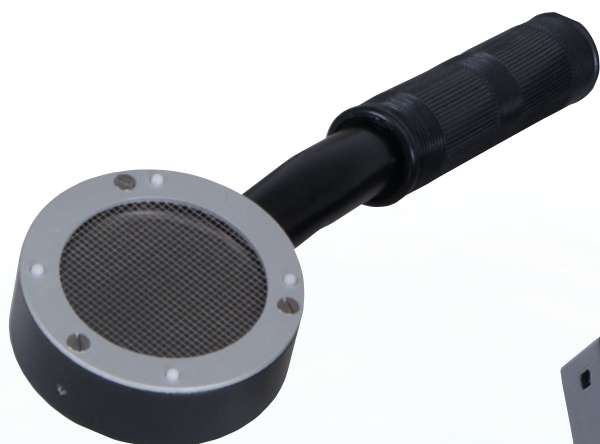
The Radhound X/E is an advanced hand-held general purpose radiation monitor, suitable for a wide range of probes. The X/I is a Radhound with an internal dose rate detector.

This feature-packed instrument boasts some unique features, such as the ability to switch between probes via the menu allowing, for example, a dose rate probe and a contamination probe to be configured for use with one instrument. This flexibility allows any standard probe to be used (300 - 1200 V).

- Clear digital LCD display with backlight.
- GM and scintillation detector options.
- Scaler timer function.
- Peak mode.
- Over range.
- Multiple probe library/configuration.
- Fully adjustable alarm levels.



Contamination Probes



SS300 Probe

The SS300 is an uncompensated pancake Geiger-based probe for alpha beta and gamma contamination measurement.

SS315 Probe

The SS315 is functionally identical to the SS300, but with a different probe geometry.



	SS300	SS315
Operating Voltage	550 V	
Window	15.5 cm ² 1.6 to 2.0 mg/cm ² mica	
Measurement Range	0 - 5 kcps	
Plateau Length	150 V	
Temperature Range	-10°C to + 50°C	
Energy Response	20 keV - 2 MeV Gamma, ≥ 40 keV Beta, > 3 MeV Alpha	
Housing Connector	MHV	
Dimensions	Ø 70 x 254 x 64 mm	Ø 70 x 180 mm
Active Area	15.5 cm ²	
Weight	280 g	450 g

Efficiencies

(Listed as percentage of 2 π emission rate)

Nuclide	Am-241	Pu-238	Nat U	Sr-90/Y-90	C-14	Pm-147	Pu-238	Co-60	Cs-137
Emission	α	α	α	β	β	β	β	β	β
Efficiency	29.1%	26.6%	63.5%	56.7%	19.4%	59.1%	25.8%	36.2%	50.6%

Dose Rate Probes

SS330 Probe

The SS330 probe is an excellent general purpose end window compensated pancake Geiger probe with H*(10) energy compensation, which permits reliable measurements from ambient background up to 1 $\mu\text{Sv/hr}$.



SS335 Probe

The SS335 probe is functionally identical to the SS330, but with a different probe geometry.



SS340 Probe

The SS340 is a side-window Geiger probe for ambient gamma radiation measurement to H*(10). Dose-rate range is 0 - 2 mSv/hr and energy range 45 keV - 2 MeV.



	SS330	SS335	SS340
Operating Voltage	550 V	550 V	450 V
Measurement Range*	0.1 $\mu\text{Sv/hr}$ - 1 mSv/hr	0.1 $\mu\text{Sv/hr}$ - 1 mSv/hr	0.1 $\mu\text{Sv/hr}$ - 1 mSv/hr
Plateau Length	150 V minimum	150 V minimum	200 V minimum
Dead Time	100 μs	100 μs	110 μs
Temperature Range	-10°C to + 50°C	-10°C to + 50°C	-10°C to + 50°C
Gamma Sensitivity	Typically 5 cps/ $\mu\text{Sv/hr}$	Typically 5 cps/ $\mu\text{Sv/hr}$	Typically 2 cps/ $\mu\text{Sv/hr}$
Energy Sensitivity	H*(10) for 20 keV - 1.5 MeV	H*(10) for 20 keV - 1.5 MeV	H*(10) for 45 keV - 1.5 MeV
Housing Connector	MHV	MHV	MHV
Dimensions	Ø 70 x 254 x 64 mm	Ø 70 x 180 mm	Ø 25 x 135 mm
Active Area	15.5 cm ²	15.5 cm ²	40 mm tube length
Weight	300 g	470 g	100 g

* Dose rate probes are set up to read in $\mu\text{Sv/hr}$ by default. For measurements in rem/hr, please specify at point of order.

Scintillation Probes

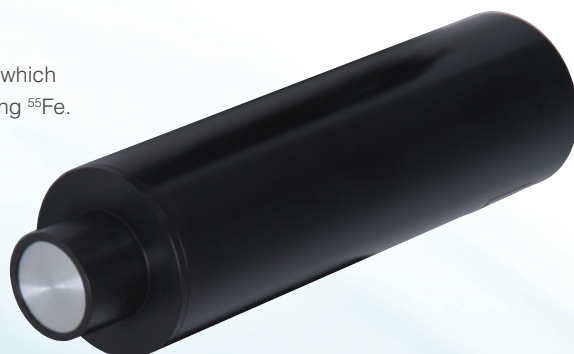
SS404 Al Probe

The SS404 Al is a thin-crystal NaI(Tl) end-window scintillation probe designed to be an equivalent to the Mini 44A. It incorporates a Ø 32 x 2.5 mm thick NaI(Tl) crystal mounted on an aluminium window and is fitted with an internal 3.15 mm lead collimator to reduce background counts.



SS404 Be Probe

The SS404 Be is similar to the SS404 Al but is fitted with a beryllium window, which extends the low energy response down to 5 keV, making it suitable for counting ⁵⁵Fe.



SS500 Probe

The SS500 is a very sensitive end-window gamma scintillation probe. Equipped with a 25.4 x 25.4 mm NaI(Tl) crystal, it is designed to provide a cost effective gamma monitor for energies of 50 keV upwards.

	SS404 Al	SS404 Be	SS500
Operating Voltage	Typically 650 V		
Detector Crystal	Ø 32 x 2.5 mm NaI		25.4 x 25.4 mm NaI
Window Weight			35 mg/cm ²
Gamma Sensitivity			300 cps/μSv/hr (¹³⁷ Cs)
Energy Response	15 keV - 250 keV	5 keV - 250 keV	50 keV - 2.0 MeV
Housing Detector	MHV		
Dimensions	Ø 54 x 185 mm		Ø 44.5 x 205 mm
Weight	820 g		300 g
Temperature	-10°C to + 50°C		
Humidity	Up to 95% RH non-condensing		

Efficiencies

(Listed as percentage of 2π emission rate)

Nuclide	Energy	SS404 Al Efficiency	SS404 Be Efficiency
Fe-55	5.9 keV	6.1%	31.4%
Pu-238	16.3 keV	98.7%	99.1%
I-129	31.5 keV	84.9%	91.5%
Am-241	58.8 keV	117.0%	117.3%
Co-57	120 keV	82.7%	83.0%
Cs-137	662 keV	17.0%	18.3%
Co-60	1200 keV	11.4%	12.4%

Alpha/Beta Contamination Probes

SS440 B Probe

A beta scintillation probe designed to be an equivalent to the NE BP4.

This probe uses a $\varnothing 57 \times 1.5$ mm scintillator, with an active area of 19.6 cm^2 , and provides comparable sensitivity for beta radiation to anthracene.

A choice of 3 mm, 6 mm and 9 mm grill spacing is available.



Efficiencies

(SS440 9 mm grill, β background 2.9 cps. Listed as percentage of 2π emission rate)

Nuclide	Sr-90/Y-90	C-14	Pm-147	Pu-238	Co-60	Cs-137
Emission	β	β	β	β	β	β
Efficiency	34.8%	14.1%	36.1%	15.0%	23.6%	32.3%



SS600 Probes

Equivalent to the NE BP6 / AP2, there are three versions of these 100 cm^2 window probes available:

Alpha only (Zinc sulphide layer), **Beta only** (Plastic scintillator)

Alpha/ Beta (Zinc sulphide bonded to a plastic scintillator)

The use of a plastic scintillator avoids the traditional use of anthracene in this application, with a comparable response.

Efficiencies

(SS600 Alpha/Beta, α background 1.9 cps, β background 7.5 cps. Listed as percentage of 2π emission rate)

Nuclide	Am-241	Pu-238	Nat U	Sr-90/Y-90	C-14	Pm-147	Pu-238	Co-60	Cs-137
Emission	α	α	α	β	β	β	β	β	β
Efficiency	39.3%	42.0%	43.1%	38.4%	1.5%	36.9%	4.7%	14.0%	28.8%

SS700 Probes

A series of three ergonomically balanced probes with a square window of 50 cm^2 and a 64° angled handle.

Equivalent to the NE BP7, there are three versions available:

Alpha only (Zinc sulphide layer)

Beta only (Plastic scintillator)

Alpha/Beta (Zinc sulphide bonded to a plastic scintillator).

The use of a plastic scintillator avoids the traditional use of anthracene in this application, with a comparable response.



Efficiencies

(SS700 Alpha/Beta, α background 0.7 cps, β background 3.4 cps. Listed as percentage of 2π emission rate)

Nuclide	Am-241	Pu-238	Nat U	Sr-90/Y-90	Cl-36	Co-60	Cs-137
Emission	α	α	α	β	β	β	β
Efficiency	33.0%	32.1%	34.8%	33.9%	30.6%	13.2%	23.1%

T401 and T403 Contamination Monitors

Designed to meet the challenge of combining operational reliability with excellent sensitivity the T401 offers a range of features including direct surface ability mode and peak reading. The detachable radiation probe is supplied with up to 1.5 metres of extendable cable.

The T403 is identical to the T401 except that its detector probe is attached to 10 metres of cable, allowing the monitor to be used to survey surface contamination levels up to 10 metres away from the body of the monitor.

Both monitors can be supplied with an extension pole kit to securely deploy the detector probe during monitoring operations.

- Excellent sensitivity for the detection of alpha/beta radiation.
- Dual bar graph meter display 0 - 1000 cps.
- Digital numeric display with automatic direct translation to Bq/cm² for 14+ pre-programmed nuclides (natural and man-made) including C-14, P-32, Cs-137.
- Optional extension arm.
- Probe stepwise rotatable through 90°.
- Back light facility.
- Audible response with adjustable alarm thresholds.



T402 and T406 Dose Rate and X-ray Monitors

The T402 and T406 are lightweight, yet robust and comfortable to use over extended periods.

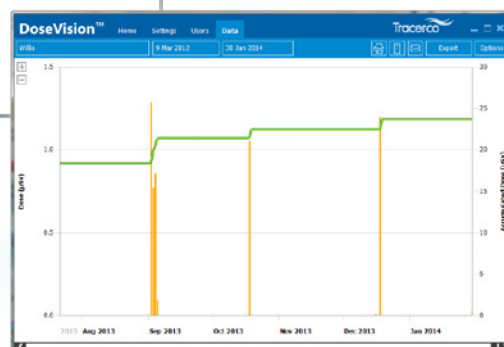
- T402 detects X-rays and gamma rays from 60 keV - 1.33 MeV. T406 operates between 17 keV - 1.33 MeV.
- Digital bar graph display: 0.1 - 1000 μ Sv/h.
- Digital dose rate indication: 0 - 10,000 μ Sv/h.
- Peak dose rate memory – allows maximum exposure levels to be recorded.
- Back light facility.
- Audible response with adjustable alarm thresholds.
- Easy to clean and decontaminate as it has a smooth design and is waterproof.

T404 Personal Electronic Dosimeter (PED)

Ideal for users who are not specially trained to measure radiation exposure, the T404 is easy to operate and intrinsically safe, allowing it to be used in a wide range of environments.

DoseVision™, the software interface for the T404 has specifically been developed to be intuitive to use.

- Detects X-rays and gamma rays from 33 keV - 1.33 MeV.
- One touch operation.
- Easy to read large Amoled display screen displaying dose rate, accumulated dose and animated silhouette indicating dose received.
- Three measurement modes with user defined alarms.
- Extra large memory reducing the risk of data being overwritten.
- Wear it several ways as the screen can be flipped.



NORM Monitor-IS

The ultimate tool for obtaining accurate NORM measurements in hazardous areas, the NORM Monitor-IS is ATEX approved with dual probe capabilities; Geiger Müller and scintillator.

- Large, easy to read LCD screen with bar graph and back light.
- One-touch integrate function that allows detection of very low activities for increased measurement accuracy.
- Live background subtraction and several measurement modes.
- Adjustable alarm thresholds for improved safety.
- Easy to clean and decontaminate.

Voice Activated Hand Monitor

Designed for use in 'wet-chemistry' radio-isotope handling situations where hands could be contaminated, the mains-operated Handhound voice activated monitor is an ideal solution.

The background is updated whilst the unit is not in use. A proximity sensor ensures the user's hands are underneath the detector, the user then speaks his/her name and says 'continue' to begin the process. The system will then begin counting for a predetermined period which can be set by the supervisor.

A touchscreen interface is also incorporated to allow configuration and manual triggering if needed.

- Entirely voice operated to avoid instrument contamination.
- Sensitive scintillation counter for gamma emitters.
- Automatic background updates.
- Fixed or dynamic alarm thresholds.
- Alternative detector options covering wide range of nuclides.
- Stainless steel housing for ease of cleaning and decontamination.
- Automatic record keeping against user names, to aid with HSE compliance.
- Touch-screen compatibility included as an alternative to voice operation.
- Data can be downloaded onto USB.



Rad-Monitor GM2 and GM2-P

Ideal for bench top monitoring, the GM2 features a large diameter thin end window GM tube with a total effective area of 45 mm and a window thickness of 1.5 - 2.0 mg/cm². This detector provides the highest sensitivity for detecting soft beta emitters such as C-14 and S-35.

The GM2-P features a 'pancake' style detector with a rubberised grip handle. A large diameter tube is mounted at a slight angle for convenient monitoring of bench top, hands and clothing.



Rad-Monitor SD10

The SD10 features a high sensitivity scintillation probe for detecting low energy gamma emitters such as I-125. The detector utilises a fast response photomultiplier tube and a 25.4 x 2 mm thick sodium iodide crystal with a thin 1 mm (7 mg/cm²) aluminium window.

Suitable for thyroid monitoring of I-125 uptake, shielding leakages, X-ray and gamma radiation work.



Hidex 300 SL Liquid Scintillation Counter

The Hidex 300 SL is the most advanced and user-friendly liquid scintillation counter available.

Employing Triple to Double Coincidence Ratio (TDCR) counting, the 300 SL provides instant DPM results without the need for any internal or external standards.

It is completely controlled from an external PC with an easy-to-use, yet sophisticated software program which offers an unlimited number of pre-stored isotopes and protocols and automatic data export to Excel or other programs. The software also provides options for 21 CFR Part 11 compliance and extensive data reduction features such as quench curve analysis, IC/EC 50 value calculations etc.

- Alpha/Beta separation capability.
- Accepts a range of vial types/sizes.



Hidex Triathler Liquid Scintillation Counter

Triathler is a compact and portable single-well instrument that provides instant results for liquid scintillation counting and luminescence measurements.

In liquid scintillation counting mode, Triathler has preset modes for ^3H , ^{14}C , ^{32}P , ^{33}P , ^{35}S , and reliable detection for most other radionuclides. The on-board software has data export capabilities to a printer or PC (Excel) and allows advanced spectrum analysis and optional instrument control.

- Easy-to-use single key operation.
- Instant DPM quench correction without external standards.
- Alpha/Beta separation capability.
- Optional internal lead shield for low backgrounds.
- Automatic injector option.



Hidex Sense Beta Plus Microplate Reader

The Hidex Sense Beta Plus is an application ready high performance multi-mode microplate reader which uniquely combines liquid scintillation and gamma counting, high sensitivity luminescence and all common non-radioactive detection technologies including special photometric detection into one very compact instrument.

- User-friendly touch screen control.
- Liquid scintillation counting and high sensitivity luminescence ready.
- Extensive measurement capability.
- Versatile optical filter storage system.



More from LabLogic...

LabLogic also supply a range of consumable items for use in radiation labs including:

- Acrylic, Lead Acrylic Shielding.
- Vinyl Lead Sheets, Flexible Lead Foil.
- Scintillation Vials, Scintillation Cocktails.
- Decontamination Spray, Lab Wipes.
- Waste Bags, Hazard Signs, Tape, Trays.

To see the full range please visit our website at www.lablogic.com



Europe & Worldwide

LabLogic Systems Limited
Paradigm House, 3 Melbourne Avenue
Broomhill, Sheffield, S10 2QJ, UK

E-mail: solutions@lablogic.com

Tel: +44 (0)114 266 7267

Fax: +44 (0)114 266 3944



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USA & Canada

LabLogic Systems, Inc.
East Pointe Park, 1040 East Brandon Blvd.
Brandon, FL 33511-5509, USA

E-mail: solutions@lablogic.com

Toll Free: +1-800-875-4687

Fax: +1-813-620-3708



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www.lablogic.com