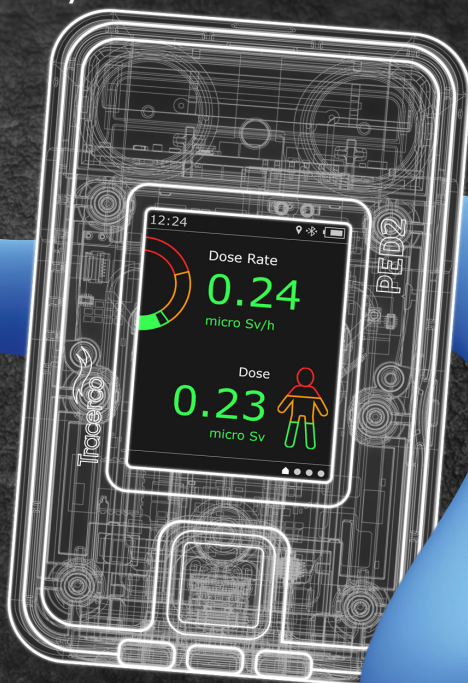


Radiation monitors and servicing

The clear choice for
radiation safety



Contents

The clear choice for radiation safety	4
Tracerco™ personal electronic dosimeters Gen 1	6
Tracerco™ personal electronic dosimeters Gen 2	8
Tracerco™ NORM monitor-IS	10
Tracerco™ NORM monitor-IS GM	12
Tracerco™ T401 contamination monitor	14
Tracerco™ T202 dose rate monitor	16
Tracerco™ T402 and T402 ^{HR} dose rate monitors	18
Tracerco™ T406 x-ray monitor	20
Tracerco™ mud monitor	22
Radiation protection advice and training	24
Analytical services	25

The clear choice for radiation safety



With over 60 years' experience, Tracerco offers a wide range of award-winning radiation monitors to measure radiation dose rate or monitor process and environmental contaminants in a number of applications. These include, but are not limited to, Oil and Gas, NDT, Nuclear, CBRNe, Industrial Research and Educational Sectors, Medical and Life Sciences, and Environmental and Waste Management Industries.

All of our products including; handheld dose rate, contamination, NORM and x-ray monitors, as well

as our range of personal electronic dosimeters (PEDs) have been designed to be lightweight and easy to use.

Our intrinsically safe radiation monitors function safely in the presence of explosive gas mixtures. We also provide non-intrinsically safe versions with the same functionality for use in less-challenging environments, providing a solution for every radiation monitoring and management need.

Radiation monitor calibration and repair

We provide a fast, efficient and professional calibration service for all types of radiation monitor. Calibration services are available at our offices located in:

- Billingham, UK
- Houston, USA
- Perth, Australia
- Abu Dhabi, UAE
- Kuala Lumpur, Malaysia

We also provide a free of charge reminder service to let you know when your next calibration is due.

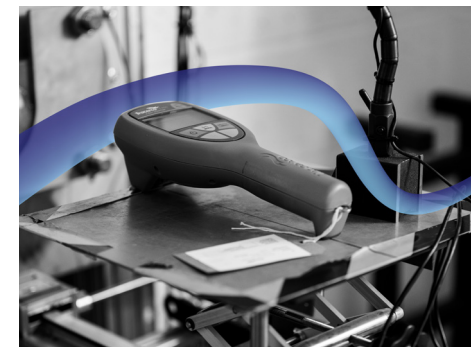
Our radiation monitor calibration service is:

- **Quick:** Typical turnaround within 3-5 days. We can also provide an express service on request.
- **Flexible:** We offer calibration of contamination monitors against a range of isotopes including Ra-226 and Pb-210.
- **Comprehensive:** We can test dose rate monitors to saturation dose rates in excess of 100mSv/hr.

Our qualified technicians are also available to carry out quick and effective repairs on a wide range of instruments including intrinsically safe equipment.

Purchase or hire

Our full range of radiation monitors and personal electronic dosimeters (PEDs) are available for both purchase and hire.



Monitors available for hire include:

From our intrinsically safe range:

- Tracerco™ NORM monitor-IS - Full Kit
- Tracerco™ NORM monitor-IS - Scint
- Tracerco™ NORM monitor-IS - GM
- Tracerco™ T202 dose rate monitor
- Tracerco™ personal electronic dosimeter

From our standard range:

- Tracerco™ T401 contamination monitor
- Tracerco™ T402 dose rate monitor
- Tracerco™ T403 contamination monitor
- Tracerco™ T406 x-ray monitor
- Tracerco™ personal electronic dosimeters (PEDs)

Hire monitors can often be provided with rapid delivery so if you have an urgent requirement for a radiation monitor, we can meet your needs.

Tracerco™ personal electronic dosimeters Gen 1

X-ray and gamma ray measurement

The Tracerco™ Personal Electronic Dosimeters (PEDs) have been designed to be the easiest personal radiation monitors on the market to use and understand. Everything on the devices has been designed with the user in mind. The display screen features radiation graph measurements and a simple diagram of a person who fills with colour, depending on the dose of radiation received. All of our PEDs have weather, shock and drop proof housings, a smooth clean design and simple to use software.



Benefits

- Dose rate range of upto 1Sv/h, 100 R/h (PED-ER and PED-ER+)
- Energy range of up to 3 MeV
- Large, clear, easy to read display with one button operation
- Audio and visual alarms with vibration functionality
- IP67 rated
- Can be used as a handheld survey meter with GPS and Bluetooth features (PED+ and PED-ER+)
- Easy dose management with free DoseVision™ software



PED Blue & PED-ER



PED+ & PED-ER+

Markets

- Oil and gas
- Emergency services
- First responders
- Military
- NDT
- Mining
- Nuclear Power
- Medical
- Border controls

Accessories

- Lanyards
- Travel adapters
- Leather / fabric holders

Tracerco™ PEDs specification

Performance			
Radiation detected	X-rays and gamma rays in range (33 KeV to 3 MeV PED Blue, PED+), (48 KeV to 3 MeV PED-ER, PED-ER+)*	Accumulated dose range	Dose “Man” display 0-10Sv, 0-1000 rem Digital numeric display 0-10Sv, 0-1000 rem
Detector	Single energy compensated Geiger Muller tube	Peak radiation dose rate	Digital numeric display 0-100mSv/h, 0-10 R/h (PED Blue, PED+) Digital numeric display 0-1 Sv/h, 0-100 R/h (PED-ER, PED-ER+)
Units	Sieverts or Rem (may be selected in DoseVision™ software)		
Memory	125,000 data point capacity. Serial non-volatile memory 10 year data retention	Dose rate range	Bar graph display 0-100 mSv/h, 0-10 R/h (PED Blue, PED+), 0-1 Sv/h, 0-100 R/h (PED-ER, PED-ER+) Digital numeric display 0-100 mSv/h, 0-10 R/h (PED Blue, PED+), 0-1 Sv/h, 0-100 R/h (PED-ER, PED-ER+)
Electrical characteristics			
Battery	Rechargeable lithium-ion. Recharge via standard 5V micro USB connection. Can be charged from PC	Low battery indication	On 8 hours battery life remaining
Battery life	300 hours typically with background radiation**		
Mechanical characteristics			
Size	104mm x 64mm x 24mm	Case material	Shock, vibration and drop resistant polymers
Weight	190g including belt clip		
Environmental			
Ingress protection rating	IP67 (dust tight and can withstand immersion in water at depth of 1m)	Humidity range	Up to 95%
		Operating temperature range	-20°C to 50°C
Standard compliance BS EN 61526, EN55011, IEC61010-1			

* For detailed response curve please see report by Radiation Metrology, UKHSA.

** Battery life on the PED+ and PED-ER+ will be reduced when using Bluetooth and GPS. Typical battery life is based on the use of the screensaver.

Tracerco™ personal electronic dosimeters Gen 2

X-ray and gamma ray measurement

Built on over a decade of user experience, the Tracerco™ Personal Electronic Dosimeter 2 (PED2) is a rugged, compact, grab-and-go device that is easy to use, easy to manage and offers leading edge radiation protection.

The flexible device measures, records and displays dose rate and accumulated dose in real time with up to four configurable dose and dose rate alarm settings that trigger audible, visual, textual and haptic alerts.

A single button is used to navigate an intuitive carousel menu and a large, easy-to-read colour display ensures that vital information is clear and simple to understand providing unparalleled situational awareness.

Exposure data is automatically logged into a self-managing memory and can be seamlessly and securely transferred into the Tracerco™ DoseVision™ software platform for simple reporting and visualisation. DoseVision™ enables straightforward device configuration and offers optional cloud-based services ensuring secure, auditable, and efficient management of equipment and worker dose data.

Benefits

- Clear and readable transfective display enables use in dimly lit or sun-glare scenarios
- Responds promptly to small changes in radiation whilst also being capable of making accurate and reliable readings in hot zone fields up to 1Sv/h

- Powered by commercially available rechargeable or replaceable batteries
- Secure NFC data download via charging dock also with USB C connection
- PED2+ and PED2-IS+ are BLE and GPS enabled, have enhanced alarm messaging, and can operate in off-body mode for handheld surveys and perimeter monitoring tasks
- Intrinsically safe variants (PED2-IS and PED2-IS+) cater for use in hazardous areas
- DoseVision™ companion software with optional cloud ecosystem



Applications

- Emergency responders and security services
- Offshore and onshore oil and gas
- Industrial radiography
- Border control and military (CBRNe)
- Nuclear and decommissioning
- Medical and life sciences
- Mining

Tracerco™ PED2 specification

Performance			
Radiation detected	Gamma and X-rays detected Photon energy response: 33keV to 3MeV (non-I.S. variants) 48keV to 3MeV (I.S. variants)	Accumulated dose range**	0μSv - 42Sv (0mrem - 4200 rem) Dose increments of 0.01μSv (0.001mrem)
Detector	Geiger Muller tube (with RapidResponse technology for increased range and high sensitivity)	Dose rate range**	Standard calibration: 0μSv - 100mSv/h (0mrem/h-10rem/h) Extended range calibration: 0μSv - 1Sv/h (0mrem/h -100rem/h) NB. Detection limit 0.12μSv/h. Devices display up to 200% of the calibrated range
Units	Sieverts or Rem (selected in DoseVision™ software)		
Memory	250MB self-managing device storage capacity. (i.e. > 1 million records) - Personal dose operation >10 years of dose records (including GPS data) - Survey mode > 1 year continuous area monitoring logging every 2 seconds	Screen type	2" TFT Transflective, 65k full colour 240*320 pixels (screen rotate feature)
		Configurable alarms	Audible, visual, haptic. Up to 4 dose alarms and 4 dose rate alarms
		Non-volatile memory	NVM data retention > 10 years
Electrical characteristics			
Battery options***	- 2 x AAA 1.2V NiMH rechargeable cells or - 2 x AAA 1.5V Alkaline disposable cells	Charging/ data download	- PED2, PED2+ via supplied USB C cable (Charging dock is an option for above devices) - PED2-IS, PED2-IS+ via supplied charging dock in non-hazardous area only (NB. All devices can operate whilst on charge)
Real time clock	Secondary cell RTC battery back-up and primary cell removal detection		
Physical sensors	- Accelerometer - Temperature	Comms/ location	- PED2-IS : NFC - PED2+ : NFC, BLE 5, GPS - PED2-IS+ : NFC, BLE 5, GPS
Mechanical characteristics			
Size	102mm x 63mm x 31mm	Case material	- Shock, vibration and drop resistant polymers with antistatic properties - Front replaceable protective membrane (anti-tamper)
Weight	< 200g		
Environmental			
Ingress protection rating	IP67 (dust tight and immersion in water at depth of 1m)	Humidity range	Up to 95%
		Operating temperature range	-20°C to 50°C
Hazardous area classification code (PED2-IS, PED2-IS+ only) ATEX and IECEx: Zone 0, 1, 2 gas group IIA, IIB, IIC		Hazardous area certification code (PED2-IS, PED2-IS+ only) ATEX Marking -  II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) IECEx Marking - Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) UKEx Marking - Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C)	
Standard compliance BS EN 61526 – 2013; IEC 61526:2010; ANSI42.20:2003; EN55011; IEC60079-0; IEC60079-11; IEC61010-1			

* For detailed response curve please see report by Radiation Metrology, UKHSA.

** Accumulated dose indicated relates to personal dose equivalent Hp(10). Corresponding dose rate indicated relates to personal dose equivalent rate except where plus variants are used in Survey mode where the rate indication is related to the ambient dose equivalent H*(10).

*** Specified batteries must be used for IS variants. See user manual for permitted battery types.

Tracerco™ NORM monitor-IS

Alpha, beta and gamma ray measurement

The Tracerco™ NORM monitor-IS is an intrinsically safe, weatherproof monitor with dual probe capability. It is the ultimate instrument for obtaining accurate NORM measurements in hazardous areas or difficult conditions. With a robust and reliable design, it allows users to monitor wet and dry NORM in a variety of situations. Its unique, intrinsically safe certification incorporates two different probe options to make it the optimum radiation monitor for surface measurements and NORM surveys.



Benefits

- Intrinsically safe - no need for a hot work permit
- ATEX and CSA approved
- Easy to clean and decontaminate
- Digital display and live background subtraction
- Multiple measurement modes
- Bq/cm² output for NORM isotopes
- Adjustable and audible alarm thresholds for improved safety
- Two detachable probes (GM and Scint) with in built calibration data

Markets

- Oil and gas
- First responders
- Military
- Life sciences
- Mining
- Nuclear
- Medical
- Environmental agencies

Accessories

- Robust, weatherproof transit case
- Extension pole kit
- Protective leather holder

Tracerco™ NORM monitor-IS specification

Performance			
Radiation detected	Scint: Gamma, high energy beta GM: Alpha, beta, gamma Automatic direct translation to Bq/cm ² for Pb-210 (wet or dry), Ra-226 (wet or dry), Sr-90, Am-241, C-14, Cl-36	Over-range response	Scint: Bar graph display will read full scale. Digital numeric display will read "OUEr" GM: Bar graph display will read full scale. Digital numeric display will show OUEr (over) above 4000 CPS
Scintillator detector	Nal crystal in metal/polymer enclosure	Integrate period	Auto = 60 seconds or 1000 counts User defined = 5 - 600 seconds
GM Detector	Single halogen thin window Geiger Muller Tube	Measurement modes	Scint: CPS, µSv/h GM: CPS, bq/cm ² All modes have a background subtraction options CPM and µR/h available
Count range	Scint: 0 - 200,000 cps (1.2 million cpm) GM: Bar graph display (0-1000 CPS). Digital numeric display in CPS or Bq/cm ²	Dose rate range (Scint only)	0.000 to 50µSv/h (Cs137 only) (0.0 - 5000 µR/h). Dose rate function only to be used in accordance with North American guidance for NORM monitoring - not recommended for general dose rate measurement
Electrical characteristics			
Battery	Varta Energy 6LP3146	Low battery indication	On 10 hours battery life remaining
Battery life	Scint: Scintillator: 55 hours typically with background radiation GM: 190 hours typically with background radiation	Variation with battery voltage	Scint: +/- 2% GM: < 2%
Mechanical characteristics			
Case material	Static dissipative nylon body with ABS window	Weight	Scint: Handset: 500g Scintillator probe: 700g GM: Handset: 500g GM probe: 500g (approx.)
Environmental			
Variation with temperature	<10%	Humidity range	0 - 95%
Ingress protection rating	Scint: Handset: IP65, Scintillator probe: IP67 GM: Handset: IP65, GM probe: IP34	Hazardous area certification code ATEX: Certification No. Baseefa12ATEX0209X Marking - Ⓔ II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) IECEx: Certification No. IECEx BAS 12.0114X Marking - Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) CSA _C : Marking - Class I, Div 1, Gps A,B,C, D T4 (-20°C ≤ Ta ≤ +50°C) Marking - Ex ia, IIC T4 (-20°C ≤ Ta ≤ +50°C) CSA _{US} : Marking - Class I, Div 1, Gps A,B,C, D T4 (-20°C ≤ Ta ≤ +50°C) Marking - Class I, Zone 0, AEx ia, IIC T4 (-20°C ≤ Ta ≤ +50°C)	
Hazardous area classification code ATEX & IECEx: Zone 0, 1, 2 gas group IIA, IIB, IIC CSA _{C&US} : Division 1 & 2, Groups A, B, C and D Zone 0, 1, 2 gas group IIA, IIB, IIC			
Standard compliance EN55011, IEC60079-0, IEC60079-11, IEC61010-1, UL 913, UL 60079-0, UL 60079-11, CSA C22.2 No 0-10, CSA C22.2 No 157-92, CSA 60079-0:07, CSA 60079-11:02			

Tracerco™ NORM monitor-IS GM (Geiger Muller)

Alpha, beta and gamma ray measurement

The Tracerco™ NORM monitor-IS GM is an intrinsically safe, weatherproof monitor. Designed to be robust and reliable, with a detachable GM probe, and is the most practical instrument for obtaining accurate NORM measurements in hazardous areas or challenging environments.

Benefits

- Intrinsically safe - no need for a hot work permit
- ATEX or CSA approved
- Easy to clean and decontaminate
- Detachable GM probe with a rotating head for surface measurements
- Digital display and live background subtraction
- Bq/cm² output for NORM isotopes
- Adjustable and audible alarm thresholds
- Built in calibration alerts

Markets

- Oil and gas
- First responders
- Military
- Life sciences
- Mining
- Nuclear
- Medical
- Environmental agencies

Accessories

- Extension pole kit
- Protective leather holder



Tracerco™ NORM monitor-IS GM specification

Performance			
Radiation detected	Alpha, beta, gamma. Automatic direct translation to Bq/cm² for Pb-210 (wet or dry), Ra-226 (wet or dry), Sr-90, Am-241, C-14, Cl-36	Over-range response	Bar graphic display will read full scale. Digital numeric display will show OUEr (over) above 4000 CPS
GM detector	Single halogen thin window Geiger Muller Tube	Integrate period	Auto = 60 seconds or 1000 counts User defined = 5 - 600 seconds
Count range	Bar graph display (0-1000 CPS). Digital numeric display in CPS or Bq/cm²	Measurement modes	CPS, bq/cm² All modes have a background subtraction options CPM and µR/h available
Electrical characteristics			
Battery	Varta Energy 6LP3146	Low battery indication	On 10 hours battery life remaining
Battery life	90 hours typically with background radiation	Variation with battery voltage	< 2%
Mechanical characteristics			
Case material	Static dissipative nylon body with ABS window	Weight	Handset: 500g GM probe: 500g (approx.)
Environmental			
Variation with temperature	<10%	Humidity range	0 - 95%
Ingress protection rating	Handset: IP65, GM probe: IP34	Hazardous area certification code ATEX: Certification No. Baseefa12ATEX0209X Marking - Ⓔ II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) IECEx: Certification No. IECEx BAS 12.0114X Marking - Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) CSA _C : Marking - Class I, Div 1, Gps A,B,C, D T4 (-20°C ≤ Ta ≤ +50°C) Marking - Ex ia, IIC T4 (-20°C ≤ Ta ≤ +50°C) CSA _{US} : Marking - Class I, Div 1, Gps A,B,C, D T4 (-20°C ≤ Ta ≤ +50°C) Marking - Class I, Zone 0, AEx ia, IIC T4 (-20°C ≤ Ta ≤ +50°C)	
Hazardous area classification code ATEX & IECEx: Zone 0, 1, 2 gas group IIA, IIB, IIC CSA _{C&US} : Division 1 & 2, Groups A, B, C and D Zone 0, 1, 2 gas group IIA, IIB, IIC			
Standard compliance EN55011, IEC60079-0, IEC60079-11, IEC61010-1, UL 913, UL 60079-0, UL 60079-11, CSA C22.2 No 0-10, CSA C22.2 No 157-92, CSA 60079-0:07, CSA 60079-11:02			

The monitor is available to purchase with either ATEX/IECEx or CSA certification. Certification type should be specified at the point of quotation/order, and it is the buyers responsibility to ensure equipment is suitable for use.

Tracerco™ T401 contamination monitor

Alpha, beta and gamma measurement

The Tracerco™ T401 radiation contamination monitor has been designed to be the ultimate lightweight handheld monitor for the detection and measurement of radioactive contamination. It is robust and reliable, easy to use and highly cost effective. The Tracerco™ T401 also offers a number of additional key features, such as operational reliability, a direct surface activity mode and peak reading to make radiation monitoring easier for the user.



Benefits

- Digital bar graph meter display in the range of 0-1,000 cps
- Digital numeric display provides automatic direct translation to Bq/cm² for 14+ pre-programmed nuclides, natural and man-made
- Detachable radiation probe with up to 1.5 m / 4.9 ft of extendable cable
- Rotatable probe for internal surface measurements
- Audible response with adjustable alarm thresholds
- Can be used in all weathers

Markets

- Nuclear
- Oil and gas
- First responders
- Military
- Life sciences

Accessories

- Robust weatherproof transit case
- Extension pole kit
- Protective leather holder

Tracerco™ T401 specification

Performance			
Radiation detected	Alpha, beta and gamma. Automatic direct translation to Bq/cm ² for Cs-137, Am-241, C-14, Cl-36, Pb-210 (wet and dry), Ra-226 (wet and dry), Sr-90, Co-60, P-32, Pu-239, U-238	Over range response Peak radiation dose rate	Bar graph display will read full scale. Digital numeric display shows OUEr (over) above 4,000 cps
Detector	Single halogen thin window Geiger Muller tube		
Electrical characteristics			
Battery	Standard 9V PP3 battery	Low battery indication	On 4 hours battery life remaining variation with battery voltage: Less than 15% over operating temperature range
Battery life	100 hours typically with background radiation	Variation with battery voltage	Less than 15% over operating temperature range
Mechanical characteristics			
Case material	Robust, chemical resistant polymers	Weight	1 kilogram (approx.)
Count range	Bar graph display (0-1,000 cps) Digital numeric display in cps or Bq/cm ²		
Environmental			
Variation with temperature	Less than 2%	Humidity range	0 - 95%
Ingress protection rating	Main case is sealed to IP65 sensor head sealed to IP34	Standard compliance	EU directives: 2004/108/ EC Electromagnetic Compatibility Directive

Tracerco™ T202 dose rate monitor

X-ray and gamma ray measurement

The Tracerco™ T202 radiation dose rate monitor has been specifically designed to combine intrinsic safety with robust and reliable characteristics. It provides key operational features, such as peak dose rate memory.

Benefits

- Intrinsically safe - no need for a hot work permit
- Reads and records peak measurement so you can measure radiation levels remotely
- It can be used in all weathers
- Adjustable alarm thresholds
- Lightweight, making it easy to carry and manoeuvre
- Digital bar graph display and dose rate integration
- Easy to decontaminate

Markets

- Oil and gas
- First responders
- Military
- Life sciences
- Mining
- Nuclear
- Medical
- Environmental agencies

Accessories

- Extension clamp kit
- Protective leather holder



Tracerco™ T202 specification

Performance			
Radiation detected	X-rays and gamma rays in range 59keV to 1332 keV	Accumulated dose range	Digital numeric display 0-10,000 µSv 0-1,000 mrem
Detector	Single halogen, energy compensated Geiger Muller tube	Peak radiation dose rate	Digital numeric display 0-10,000 µSv/h 0-1,000 mrem/h
Dose rate range	Bar graph display 0-1000 µSv/h Digital numeric display 0-10,000 µSv/h 0-1,000 mrem/h		
Electrical characteristics			
Battery	Varta Hi Energy 6LP3146	Low battery indication	On 4 hours battery life remaining
Battery life	100 hours typically with back-ground radiation	Variation with battery voltage	Less than 2%
Mechanical characteristics			
Case material	Static dissipative nylon body with ABS window	Weight	500 grammes
Environmental			
Variation with temperature	Less than 15% over operating temperature range	Humidity range	0 - 95%
Ingress protection rating	Rated IP65 (dust tight and will withstand water jets)	Hazardous area certification code ATEX: Certification No. Baseefa05ATEX0151 Marking - Ⓔ II 1G Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C) IECEX: Certification No. IECEx BAS.05.0064 Marking - Ex ia IIC T4 Ga (-20°C ≤ Ta ≤ +50°C)	
Hazardous area classification code ATEX & IECEx: Zone 0, 1, 2 gas group IIA, IIB, IIC			
Standard compliance BS EN 60846, EN55011, IEC60079-0, IEC60079-11, IEC61010-1.			

Tracerco™ T402 and T402^{HR} dose rate monitors

X-ray and gamma ray measurement

The Tracerco™ T402 and T402^{HR} radiation dose rate monitors have been manufactured to measure dose rate and peak dose exposure. With a lightweight design and robust and reliable housing, the T402 and T402^{HR} provide the perfect solution for handheld radiation monitoring.

Benefits

- Fast response and sensitive to low dose rates (T402)
- Extended range for measurements up to 100 mSv/h / 10,000 mrem/h (T402^{HR})
- Peak dose rate memory – allows maximum exposure levels to be recorded
- Backlight display capability for use in low light
- Audible response with adjustable alarm thresholds
- Ruggedised IP65 rated 6/6 construction and modular integrated electronics

Markets

- Oil and gas
- First responders
- Military
- Life sciences
- Mining
- Nuclear
- Medical
- Environmental agencies

Accessories

- Robust weatherproof transit case
- Protective leather holder
- Extension clamp kit



Tracerco™ T402 and T402^{HR} specification

Performance			
Radiation detected	T402: X-rays and gamma rays in range 59 keV to 1332 keV T402 ^{HR} : X-rays and gamma rays in range 33 keV to 1332 keV	Accumulated dose range	T402: Digital numeric display 0-10,000 µSv 0-1,000 mrem T402 ^{HR} : Digital numeric display 0-100 mSv 0-10,000 mrem
Detector	Single halogen, energy compensated Geiger Muller tube	Peak radiation dose rate	T402: Digital numeric display 0-10,000 µSv 0-1,000 mrem T402 ^{HR} : Digital numeric display 0-100 mSv 0-10,000 mrem
Dose rate range	Bar graph display 0-1,000 µSv/h T402: Digital numeric display 0-10,000 µSv/h 0-1,000 mrem/h T402 ^{HR} : Digital numeric display 0-100 mSv/h 0-10,000 mrem/h	Sensitivity data	T402: 1.7 cps per µSv/hr T402 ^{HR} : 0.7 cps per µSv/hr
Electrical characteristics			
Battery	Standard 9V PP3 battery	Low battery indication	On 4 hours battery life remaining
Battery life	100 hours typically with background radiation	Variation with battery voltage	Less than 1%
Mechanical characteristics			
Case material	Robust, chemical resistant polymers	Weight	500 grammes
Environmental			
Variation with temperature	Less than 15% over operating temperature range	Humidity range	0 - 95%
Ingress protection rating	Rated IP65 (dust tight and will withstand water jets)	Standard compliance	BS EN 60846 EU directives: 2004/108/EC Compatibility Directive

Tracerco™ T406 x-ray monitor

X-ray and gamma ray measurement

The Tracerco™ T406 x-ray monitor is a lightweight and easy to use handheld radiation monitor, used to minimise any exposure to possible radiation leaks. With an audible response and adjustable alarm thresholds, it can be used to detect leaks and radiation scatters around x-ray machines and diagnostic imaging equipment.

Benefits

- Robust water-resistant design
- Easy to clean and therefore more hygienic than traditional x-ray monitors
- Lightweight and easy to use
- Large clear display, making it easy to take readings as they happen
- Peak measurement facility for checking where a leak is at its worst

Markets

- Security
- Medical
- Food processing

Accessories

- Robust weatherproof transit case
- Extension pole kit



Tracerco™ T406 specification

Performance			
Radiation detected	X-rays and gamma rays in range of 17 keV to 1332 keV	Over range response	Bar graph display will read full scale. Digital numeric display will show OUEr (over)
		Accumulated dose range	Digital numeric display 0–1,000 µSv 0–100 mrem
Detector	Single, thin window energy compensated Geiger Muller tube	Peak radiation dose rate	Digital numeric display 0–1,000 µSv/h 0–100 mrem/h
Dose rate range	Bar graph display 0–1,000 µSv/h Digital numeric display 0–1,000 µSv/h 0–100 mrem/h	Measurement modes	Can be supplied with either mrem/h or µSv/h display
Electrical characteristics			
Battery	Standard 9V PP3 battery	Low battery indication	On 4 hours battery life remaining
Battery life	100 hours typically with background radiation	Variation with battery voltage	Less than 2%
Mechanical characteristics			
Case material	Robust, chemical resistant polymers	Weight	600 grammes (approx)
Environmental			
Variation with temperature	Less than ± 5% over temperature range -10°C to 40°C (14°F to 104°F)	Humidity range	0 - 95%
Ingress protection rating	Rated IP65 (dust tight and will withstand water jets)	Standard compliance	EU Directives: 2004/108/ EC Electromagnetic Compatibility Directive

Tracerco™ mud monitor

Gamma ray measurement

During drilling operations, a radioactive source is often used to log reservoir properties. Incidents have occurred where the radioactive isotope has been damaged by the drill bit, resulting in contamination of the drilling mud and the mud tank. This can lead to potential radiation exposure for workers.

The Tracerco™ mud monitor is used to confirm radioactive source integrity during logging whilst drilling (LWD) operations and to protect personnel from any unnecessary radiation exposure.



Benefits

- Intrinsically safe – no need for a hot work permit
- Provides an analogue output proportional to radiation intensity
- Continuously monitors detector condition and provides an alarm in the event of failure
- Unaffected by hostile processes
- Easy to install
- Highly reliable with a fast response
- Radiation monitoring via a standalone alarm unit, or integrated into a DCS or SCADA system

Markets

- Oil and gas
- Mining



Tracerco™ mud monitor specification

PRI 150-A-3 Detector	
Power supply	Powered by the T209 Stand Alone Alarm Unit
Operating temperature	-40°C to +70°C (-40°F to +158°F)
Environmental sealing	Designed to conform to IP 67 IEC 144
Cable entry	Integrated connector or cable gland option
Casing dimensions	Length - 510mm. Diameter - body 63.5mm (top flange ~85mm dia.)
Material	316L stainless steel
Hazardous area certification	Complies with the ATEX code II 1 G and equipment code Ex ia IIC T4 Ga. Certificate No. Baseefa12ATEX0194. (-55°C to +85°C) Suitable for hazardous area zones 0, 1 and 2. IECEx BAS 12.0103
T209 Stand Alone Alarm Unit	
Power supply	110v – 250v 50/60 Hz
Power consumption	Typically 25 VA
Indicator/output	Audible and visual alarms. 4-20mA HART Signal - Serial output for logging/interrogation
Range	Typically 0-10 µSv/h 0-1 mRem/h or 0-9999 CPM
Alarms	Dual programmable high trip alarms
Operating temperature	0°C to +60°C (32°F to +140°F)
Mounting	IP55 desktop
S A 12/2 Integrated Calibration Unit	
Power supply	110v – 250v 50/60 Hz
Power consumption	Typically 20 VA
Indicator/output	4-20mA HART Signal
Range	Typically 0-10 µSv/h 0-1 mRem/h
Alarms	4-20mA HART custom outputs available
Operating temperature	0°C to +50°C (32°F to +122°F)
Mounting	IP55 wall mounting
Standard compliance	The monitor meets the following EU directives: 2004/108/EC Electromagnetic Compatibility

Radiation protection advice and training



In addition to our award-winning range of monitors, Tracerco is vastly experienced in the provision of radiation protection training and advice to a worldwide audience.

Our Radiation Protection Advisers (Qualified Experts) and Radioactive Waste Advisers (RWAs) are certified to offer both advice and training to ensure client operational safety and compliance with national and international legislation.

We offer a range of training including Radiation Protection Officer / Radiation Protection Supervisor certified courses, management awareness of NORM, NORM awareness training and the practical use of NORM monitors. Our success in delivering and sustaining our radiation protection services is evidenced by our high degree of customer retention.

Analytical services

Tracerco has a vast amount of experience in the detection and measurement of radioisotopes, across several industry sectors, and offers a full range of standard and customer-specific techniques, to meet all of your analytical needs. With modern, fully equipped laboratories, we have the knowledge and expertise you would expect from the industry leader.

We provide:

- High resolution gamma spectrometry using a high purity Germanium detector. Key NORM isotopes such as Ra-226, Pb-210, Ra-228 (Ac-228) and Th-228 (Pb-212) can be measured to low Bq/g levels.
- Alpha spectrometry capabilities; commonly used to analyse Po-210, another key NORM isotope, to low levels.
- A measure of NORM radioisotope levels in a wide variety of sample matrices. routinely; sands, scales, sludges, waxes, soils and liquids.
- Full compositional analysis is also available, including but not limited to: heavy metals, flash point and hydrocarbon analysis (TPH, VOCs, PAHs etc.).

- Clear and informative reports allow for a direct comparison of results against local regulatory thresholds.
- Optional fast track service to report results in as little as 24 or 48 hours.
- A focus on quality; we have methods which are accredited to the ISO17025 international standard and regularly participate in proficiency testing studies.
- Measurement of non-natural gamma emitting radioisotopes. We routinely analyse leak test swabs/wipes for commonly used radioactive sources such as Cs-137, Am-241, Co-60.

As well as our UK headquarter operations outlined above, Tracerco can provide gamma spectrometry analysis out of our satellite laboratory in Abu Dhabi, UAE. The perfect solution to get your NORM waste characterised, or regular leak test certificate for nucleonics, rapidly and in-country. We can also send a Tracerco engineer to your site to perform the leak test or NORM surveys for you.

If you have challenging analytical requirement outside of the scope of our standard techniques, please get in touch with our specialists for advice on how we can help.



**Contact Tracerco to learn how our radiation monitors
provide the clear choice for radiation safety.**

Email: tracerco@tracerco.com

Web: tracerco.com/products/radiation-monitors

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