

HOMELAND SECURITY

by ALMURBAT Commercial Group



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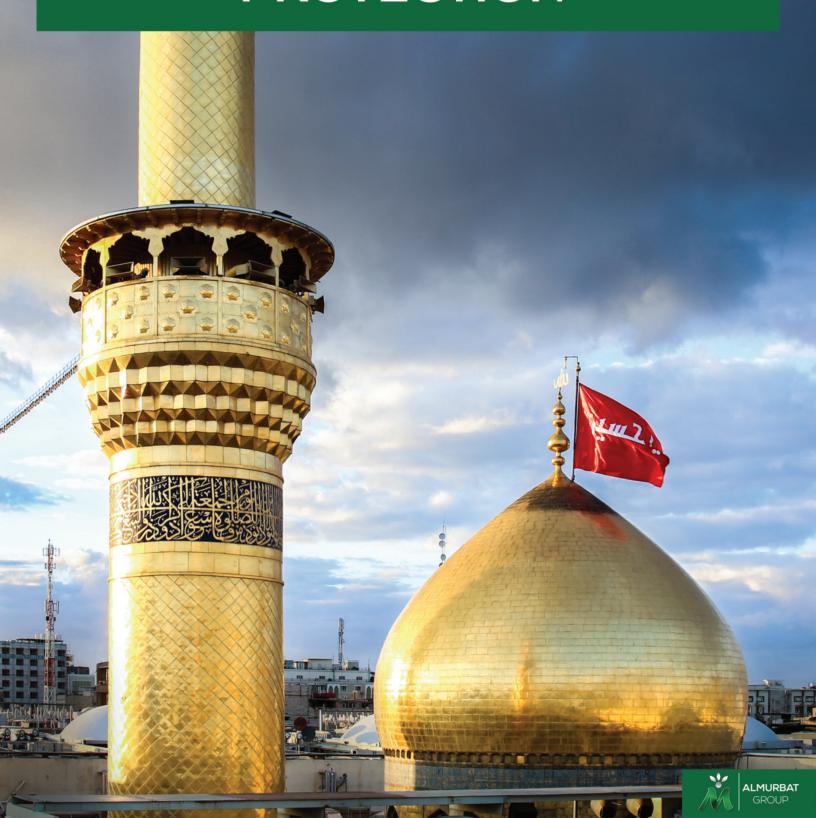
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CRITICAL INFRASTRUCTURE PROTECTION





FACILITIES

Monitoring facilities for unwanted sources of radiation can be problematic. For facilities, the risk can be found in sources entering or leaving a facility, the number of access points, the amount of personnel and the size of the building. All of these factors may present challenges to a radiological security program.

Mirion products that address these challenges seek to give facility operators the tools they need to secure access points to the building, prevent radioactive material from leaving or entering the facility and enable operators to localize and measure any radiological threat that presents itself on the facility premises.



CRITICAL INFRASTRUCTURE PROTECTION



FASTTRACK-FIBRE™

Walk-through Portal Monitor

Quickly screen pedestrians for sources of radiation with a high degree of accuracy.

SPIR-IDENT PEDESTRIAN

Spectroscopic Portal Monitor

Highly sensitive screening of pedestrians and vehicles with fast.





RTM911

Light Truck Monitor

Rapidly screen trucks and vehicles for sources of radiation.

RDS RESPONSE KIT

Survey Meter Kit

and 30-Kit containing RDS for easy radiation and 80-RDS contamination screening.





SPIR-DETECT

Unattended Area Radiation Monitor

Passive monitoring at entry and exit points with sensitive detection.

HDS CONVEYOR

Conveyor Mounted Sensitive Detection and ID

Sensitive screening of cargo and baggage on conveyor belts.







ENERGY AND INDUSTRIAL SITES

Securing the critical infrastructure inside energy and industrial sites presents unique radiation safety challenges. These facilities require a variety of radiological security measures to adequately monitor the entry and exit of personnel, vehicles and materials. In addition, perimeter monitoring requirements call for advanced, remote solutions that can operate independently for long periods of time, in varied weather conditions.

Mirion products provide positive boundary and barrier control and measurement capabilities, as well as the sensitive detectors needed to screen and secure incoming materials, personnel and vehicles against trafficking radioactive materials.



CRITICAL INFRASTRUCTURE PROTECTION



RDS-31 AREA MONITOR

Unattended Area Monitor

Featured on Page

RDS-31 based area monitor with a variety of power, environmental and communication options.



SPIR-ENV

Small Formfactor Detection & Identification

Featured on Page

Put-anywhere detection and identification package with advanced software.



PERIMETER MONITORING SYSTEMS (DRM)

Area Radiation MonitorsFeatured on Page

Wide range of radiation measurement at fixed locations with a variety of environmental, power and communications options.



FASTTRACK-VEHICLE™ XL

Truck & Vehicle MonitorFeatured on Page

Sensitive screening for vehicles and shipping containers with a high degree of accuracy.





Large scale entertainment venues with high volumes of pedestrian traffic presents a daunting .challenge for officers and security personnel needing to search for illicit sources of radiation The sheer number of visitors needing to be screened, as well as the absolute need for stealthy surveillance, require specialized solutions to confront the challenge.

Mirion products tailored for this role make it easy for security personnel to discreetly monitor guests, provide networked monitoring points for scanning entry ways with remote viewing, as well as small hand-held highly sensitive devices when active search is necessary.



CRITICAL INFRASTRUCTURE PROTECTION



ACCURAD™

Personal Radiation Detector Featured on Page By emergency responders For emergency responders.



Easily and discreetly scans pedestrians for radiation.



DMC 3000 PRD

DMC 3000 Add-on Module Featured on Page Sensitive detection in a belt worn form factor.









TRANSPORTATION HUBS (SEA, AIR, AND RAIL)

From a radiological security perspective, transportation hubs represent an extremely difficult scenario. When searching for an illicit source of radiation, large crowds, dense infrastructure and the need for low profile surveillance can lead to unreliable capabilities and high probabilities for error.

Mirion's radiation surveillance products provide agents and officers the instruments they need to covertly monitor pedestrians, baggage, and cargo for illicit sources of radiation, while keeping a low profile. These instruments are highly sensitive, with large detectors and the capability to discreetly notify the user of any elevated measurements, as well as networking capability for centralized monitoring. On-board software provides mapping and replay functions.



CRITICAL INFRASTRUCTURE PROTECTION



SPIR-ACE

Sensitive Handheld Identifier

Localize and identify sources of radiation, with on-board mapping and communications.



Sensitive Detection and ID

Backpack detector for ultra-sensitive detection and fast ID.





HDS CONVEYOR

Conveyor Mounted Sensitive Detection and ID

Sensitive screening of cargo and baggage on conveyor belts.

SPIR-IDENT PEDESTRIAN

Spectroscopic Portal Monitor

Highly sensitive screening of pedestrians and vehicles with fast.





RTM910

Truck Monitor

Platform mounted, large truck and shipping container screening system.

ACCURAD™

Personal Radiation Detector

By emergency responders For emergency responders.







BORDER CROSSINGS

High volumes of both pedestrian and vehicle traffic can make border crossings one of the most vulnerable points of entry for sources of radioactive and nuclear materials. Speed and accuracy are critical, requiring both primary detection as well as secondary levels of screening once an initial alarm is detected. Border crossings require vehicle, truck, and pedestrian monitoring solutions that do not interfere with the smooth flow of traffic. These requirements make fast, highly sensitive detection systems with remote monitoring capabilities essential.

Mirion products are designed to allow for discreet monitoring of humans, cargo and vehicles while not impeding the flow of traffic through the border crossing. Once an alarm is triggered, the person or vehicle of interest can be processed through a secondary screening location for source localization and characterization.



CRITICAL INFRASTRUCTURE PROTECTION



SPIR-ID LT

Advanced Detection & ID

Large detectors and extreme speed for quick search and ID.



Truck Monitor

Rapidly screen trucks containers and vehicles for sources of radiation.





DMC 3000 PRD

DMC 3000 Add-on Module

Sensitive detection module for that allows for 3000 the DMC low level radiation detection and

SPIR-IDENT PEDESTRIAN

Spectroscopic Portal Monitor

Highly sensitive screening of pedestrians and vehicles with fast.





SPIR-IDENT MOBILE

Mobile Detection and Identification Platform

Vehicle or aircraft mounted sensitive detection system with on-board mapping and isotope ID.

ACCURAD™

Personal Radiation Detector

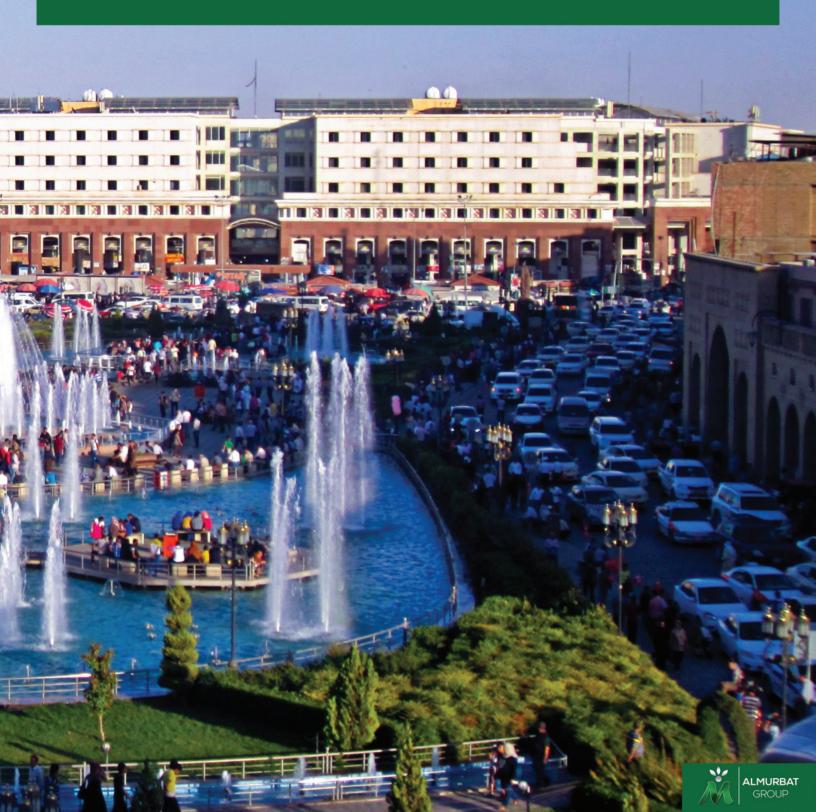
By emergency responders For emergency responders.







LARGE SCALE EVENT PROTECTION





Large scale events represent one of the most difficult challenges in radiological surveillance. When considering an event the scale of the Olympics, many of the difficulties present in other applications combine to form a complex, multilayered problem for security personnel. Events require the capability to handle high volumes of foot traffic, vehicles, cargo, access points, and large physical spaces.

Mirion products tackle this challenge with specialized detection systems that address radiological ,security at all layers of the security infrastructure. This includes primary screening of foot traffic vehicles and cargo, as well as passive monitoring with discreet perimeter and area monitors. Similar to other applications, when a primary screening alarm is tripped, security personnel can move the individual, vehicle or suspected cargo to a secondary screening area for source localization and characterization.



CRITICAL INFRASTRUCTURE PROTECTION



SPIR-IDENT PEDESTRIAN

Spectroscopic Portal Monitor

Highly sensitive screening of pedestrians and vehicles with fast.



Gamma Portal Monitor

Walk-through portal for primary screening of event attendees with extremely low false-alarm-rate.





ACCURAD™

Personal Radiation Detector

By emergency responders For emergency responders.

SPIR-PACK

Sensitive Detection and ID

Backpack detector for ultra-sensitive detection and fast ID.





SPIR-ACE

Sensitive Handheld Identifier

Localize and identify sources of radiation, with on-board mapping and communications.

EVENT-GUARD

Low Profile Detection and Identification

Inconspicuous temporary event security system with detection and identification capabilities.







AREA LARGE SCALE MAPPING

Sometimes it can be necessary to measure radiation over wide areas and record the data for analysis. This is typically either in response to an incident, or for characterization of a geographical boundary, as well as measurements for environmental protection.

Mirion products provide a wide array of options for mobile monitoring, including the capability for mapping, remote data capture, as well as both fixed and mobile platforms. Data can be transmitted back to a central monitoring facility for evaluation and analysis.



CRITICAL INFRASTRUCTURE PROTECTION



SPIR-ACE

Sensitive Handheld Identifier

Localize and identify sources of radiation, with on-board mapping and communications.



Carborne and Airborne Spectroscopy

Vehicle or aircraft mounted sensitive detection system with on-board mapping and isotope ID.





SPIR-PACK

Sensitive Detection and ID

Backpack detector for ultra-sensitive detection and fast ID.

FLOORSWEEP-FIBRE™ II

Large Surface Contamination Screening

Provides large detection area contamination scanning for flat surfaces.



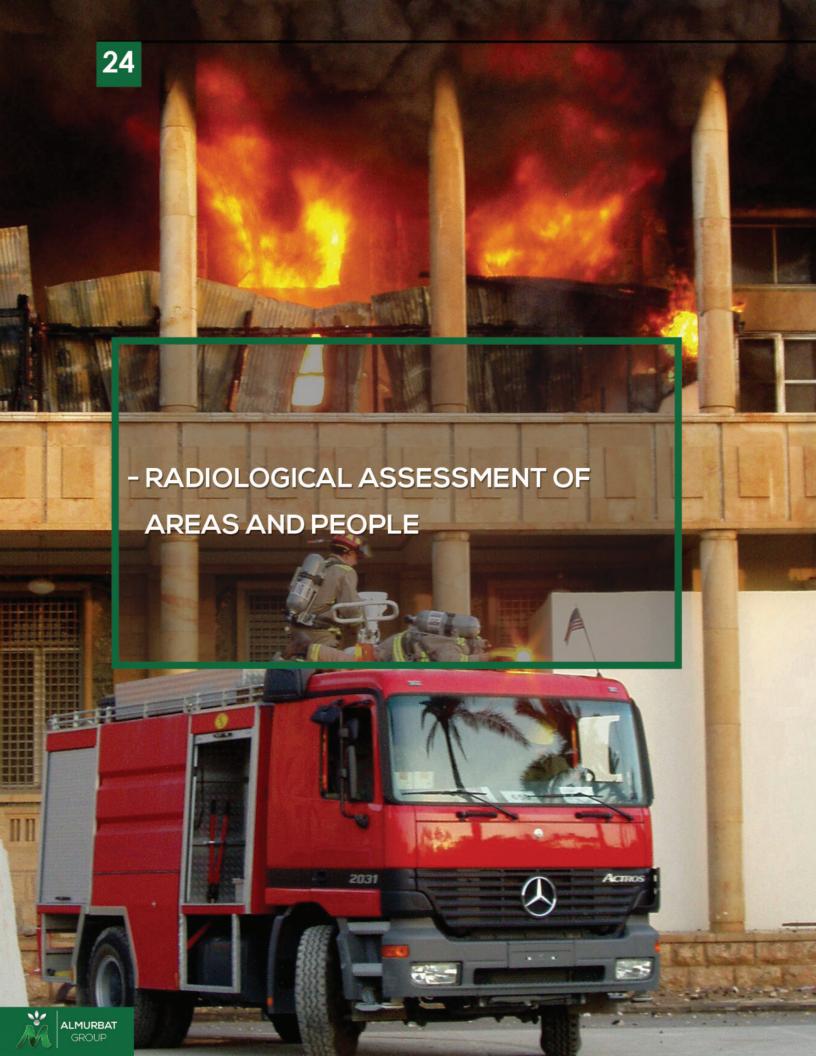


SPIR-ID

Advanced Detection & Identification

Large detectors and extreme speed for quick search and ID.





INCIDENT RESPONSE





RADIOLOGICAL ASSESSMENT OF AREAS AND PEOPLE

When responding to an incident, many radiological challenges can confront first responders and emergency personnel. Large areas and high volumes of potentially contaminated individuals and equipment can pose difficult problems. The ability to quickly perfom go/no-go screening on affected members of the public, field equipment, and even incident responders, is critical.

Mirion products address these challenges by providing a complete line of personnel protection contamination screening, and field survey meters. First responders are able to use these products to quickly address contamination threats and limit exposure to incident personnel.



CRITICAL INFRASTRUCTURE PROTECTION



DMC 3000

Personal Electronic Dosimeter

Provides real-time dose and dose rate monitoring for personnel.

RDS RESPONSE KIT

Handheld Survey Meters

Easy field radiological screening kit containing the RDS-30 and RDS-80





QUICKSWEEP™-GRAND

Large Surface Contamination Probe

Light weight and durable contamination detector with smartphone interface.

DMC 3000 MODULES

Flexible Add-ons for Personnel Monitoring

Beta, Neutron and Telemetry add-ons for the DMC 3000.





QUICKSWEEP™-SMART

Handheld Contamination Probe

Handheld contamination screening detection area. Also 100cm2 with available with intrinsic safety certification.



DOSIMETRY







DMC3000

Personal Electronic Dosimeter

OVERVIEW

The DMC 3000 Electronic Dosimet er represents

over 25 years of real-world electronic dosimetry

experience, continually refined

customer feedback. The DMC 3000

unique, high contrast and backlit LCD display,

audible, visual, and vibration alerting, high EMI

and RF Immunity and long battery life.

Beta Module Hp(0.07)

Add-on for the DMC 3000

OVERVIEW

The Beta Module attaches to the DMC 3000

dosimeter for measurement of Hp(0.07)

radiation at a wide range of energy

Neutron Module Hp(10)

Add-on for the DMC 3000

OVERVIEW

The Neutron Module attaches to the DMC 3000

dosimeter for measurement of Hp(10) radiation

at a wide range of energy levels.

- · X-ray and gamma energy range: 15 keV
- Energy response : ± 20% (typically 10% from 16 keV to 7 MeV)
- Measurement range: 0.1 µSv/h to ± 10 Sv/h (0.01 mrem/h to 1000 rem/h)
- · Large LCD display with high quality white
- backlighting 8 alpha-numeric digit display
 Standard AAA (LRO3) 1.5V Alkaline battery, 9 calendar month battery life, 2500 hr continuous run
- Dimensions: 86 x 56 x 21 mm (3.4 x 2.2 x 0.8 in) without clip
- · Weight with alkaline battery and clip: < 84 g (2.9 oz)
- MIL STD 461F RS101 & RS103 (pulsed electric field) immunity, exceeds 200V/m
- · Shock, vibration and drop resistant (1.5
- Enclosure Class: IP67

- Measurement range Hp(0.07) X and gamma energy range: 15 keV to 7 MeV; Beta energy range: 0.22 MeV to 2.3 MeV • Accuracy Hp(0,07): ≤ ± 5%* (Cs-137, ~ 24
- mSv/h, 2.4 rem/h); ≤ ± 10%*, (Am-241, ~ 23 (*without ± 5% extended uncertainty k=2); (** without ± 9% extended uncertainty k=2)
- Dose Rate Linearity Hp(0.07): < ± 20% up to 10 Sv/h, 1000 rem/h
- · Dose and dose rate Hp(0,07) displayed
- High efficiency beta measurement
- · Meets or exceeds applicable IEC and ANSI standards
- Excellent EMC Immunity
- Designed for ruggedness and durability
- Dimensions with DMC 3000: 122 x 60 x 122 x 60 x 28mm (4.8 x 2.4 x 1.1 in) with standard clip
- Weight with DMC 3000: < 112 g (3.9 oz) with clip

- Measurement range Hp(10)X and gamma energy range: 15 keV to 7 MeV; Neutron energy range: 0.025 eV to 15 MeV
 Accuracy Hp(10) Neutron: ≤ ± 10% (AmBe,
- Hp(10) Typical Energy response from
- Dose Rate Linearity Hp(10): < ± 20% up to 10 Sv/h, 1000 rem/h
- Dimensions with DMC 3000:131 x 60 x 21 mm (5.1 x 2.4 x 0.8 in) max. without standard clip
- Weight with DMC 3000: < 138 g (4.9 oz)
- · Shock, vibration and drop resistant
- Enclosure Class: IP67







Telemetry Module

Add-on for the DMC 3000

OVERVIEW

The Telemetry Module attaches to the DMC

3000 dosimeter and transmits the radiological

data (accumulated dose, dose rate and alarm

status) to other WRM2 Telemetry System

components (Base Station, Repeater, etc.)

RAD-60

Electronic Dosimeters

OVERVIEW

RAD-60 Personal Alarm Dosimeter is a precise

radiation measuring instrument for reliable

detection and measurement of radiation in

order to ensure the personal safety of the user.

It is suitable for a broad range of everyday

radiation monitoring purposes in stand alone conditions.

PRODUCT FEATURES

- Frequencies :900 (902-928) MHz or 2.4 GHz ISM frequency range
- Transmit Power Output: 100mW(900Mhz), 10mW - 63 mW(2.4Ghz) locally regulated
- Internal Power: AAA Alkaline Battery(LR03)
- External Power: 1.5v 3.6 vDC external power100 - 220 VAC with USA and Euro Adapter
- Dimensions: 4.8" (121mm) x 2.3" (58mm) x 0.98" (25mm)
- Weight: 54g without DMC 3000; 165g with DMC 3000 and AAA Battery

DDODLICT FEATURES

- Solid State Detector
- Measurement range: dose: $1\,\mu$ Sv 9.99 Sv or 0.1 mrem – 999 rem – dose rate: 5 μ Sv/h – 3 Sv/h or 0,5 mrem/h – 300 rem/h
- Calibration accuracy: better than ±5% (Cs-137, 662 keV at 2 mSv/h), Hp(10)
- Energy response: Hp(10), 60 keV 3 MeV, better than ±25%, up to 6 MeV,
- Dose rate linearity: better than ±15%, up to 3 Sv/h (300rem/h) - better than ±10% for 0.005 mSv/h - 1 Sv/h
- · Enhanced EMI immunity
- · Increased buzzer volume
- · Compact and lightweight
- Standard AAA alkaline battery for 1800 h of operation
- User selectable alarm levels for both dose and dose rate
- Dimensions: 78 x 67 x 22 mm (3.1 x 2.6 x 0.8 in)
- · Weight: 80 g (2.8 oz) including battery



PORTABLE INSTRUMENTS







RDS-30

Radiation Survey Meter

OVERVIEW

The RDS-30 is a digital handheld dose

meter designed for a wide range of gamma and

x-ray radiation surveillance applications. The

RDS-30 is simple-to-use, compact, lightweight

and waterproof with reliable and

performance and a friendly user interface.

RDS-80/80A

Surface Contamination Meter

OVERVIEW

The RDS-80 Surface Contamination Meter is a

versatile and intuitive one-handed instrument

designed for a wide range of radiological

contamination surveillance in nuclear

industry, laboratories and civilian defense operations.

RDS-31

Multi-Purpose Survey Meter

OVERVIEW

RDS-31 is a multipurpose survey meter with

internal detector and optional externally

connected probe and internal telemetry

module. The RDS-31 is a complete solution that

can be used for handheld surveillance, personal

monitoring and as an area radiation monitor.

- Dose rate measurement range: from 0.01 µSv/h to 100mSv/h (1 µrem/h to 10 rem/h)
- Dose measurement range: from 0.01 µSv to 1 Sv (1 µrem to 100 rem)
- Dose rate linearity: \pm 10 % \pm 1 digit within the range of 0.1 μ Sv/h to 100 mSv/h (10 μ rem/h to 10) rem/h
- Energy Range: gamma and X-ray from 48 keV to
- Energy response: ± 30 % over the range of 48 keV 3MeV
- · Angular response: ± 25 % within ± 45 % from the calibration direction at 48 keV
- Power supply: 2 alkaline batteries IEC LR6/AA size(recommended)
- background with alkaline cells
- Dimensions: 78 x 126 x 32 mm
- Weight: 170 g without batteries; 220g with
- Temperature range : -25 ... +55°C operational (-13... 131°F) -40... +70°C storage (-40... 158°F)
- Enclosure Class: IP67

- Radiation detected: alpha >2 MeV, betaEmax >100 keV, gamma and x-rays from 5 keV to 3 MeV
- Measurement range: surface contamination 1 to 100 000cps or 0.01 to 1000 000 Ba/cm2
- Cps linearity: ±15% ±1 digit over the range The Ba/cm2display is calculated from cps values using isotope dependent coefficients
- Display in either cps or Bq/cm2
- Surface activity (Ba/cm2) display configurable for different isotopes
- · Histogram capability of up to 480 points with user settable logging interval
- Gamma background reduction for Bq/cm2 measurements
- Power supply: 2 alkaline batteries IEC LR6/AA size(recommended)
- background with alkaline cells
- Dimensions: 78 x 126 x 57 mm
- Weight: 280 g without batteries; 330 g with batteries
- Temperature range:-25...+55°C operational (-13... 131°F)-40...+70°C storage (-40... 158°F)

- Energy Range: gamma and X-ray from 48 keV to3 MeV; alpha & beta radiation with external probes
- Dose rate measurement range: 0.01 µSv/h...0.1 Sv/h or lµrem/h...10 rem/h
- Dose measurement range: 0.01 µSv...10 Sv or 1 µrem...1000 rem
- Dose rate linearity: ± 15% ± least significant number 0.05µSv/h...01 Sv/h (5 µrem/h to 10rem/h)
- · Configurable units: Sv(/h), R(/h), with
- · Flexible histogram functions
- · Power supply: 2 AA size batteries (alkaline or NiMH); 4 months operation
- Dimensions: 100 x 67 x 33 mm (3.93 x 2.63 x 1.29 in)
- · Weight: 175 g without batteries (0.385 lb), 220 g with batteries (0.485 lb)
- Temperature range: -25°C...+60°C (-40°F to 140°F), (storage) 40°C...+70°C (-40°F to 158°F),
- Relative humidity: up to 85% at +35°C (95°F)
 Enclosure Class: IP67









RDS Probe: ABP-150

External Alpha and Beta Probe

OVERVIEW

ABP-150 is a handheld surface contamination

probe for sensitive alpha or beta measurement

when connected to the RDS-31 family

multipurpose meters.

RDS Probe: GMP-25i

External Beta Probe

OVERVIEW

The GMP-25 probe is used as an externally

connected detector to the RDS-31 family of

multipurpose meters and is intended

contamination monitoring and source localization of alpha, beta, gamma and X-ray radiation.

RDS Probe: GMP-12GSD

External Wide Range Gamma Probe

OVERVIEW

The GMP-12 GSD probe used as an externally

connected detector to the RDS-31 family of

multipurpose meters and intended for monitoring gamma and X-ray radiation. It has

been designed to fulfill both the civil defense

and industrial applications requirements.

- ABP -150 extends the measurement range of the RDS-31 especially in frisking and surface contamination applications
- · Dual phosphor scintillation detector ZnSAg for alphas and plastic scintillator for beta detection
- Dimensions: 100 x 100 x 250 mm (W x H xL)
- · Weight: 0.7 kg
- Temperature range, operational +5 to
- · Relative humidity max. 80 %, noncondensing

- For alpha /beta/gamma surface
- Excellent sensitivity for low levels of alpha, beta and gamma radiation
- Energy range: gamma > 6 keV, betaEmax > 100 keV, and alpha > 2 MeV
- Remote pulse rate measurements with pulse rate range: 0 - 50 000 cps
- Temperature range: operation: -25°C to +70°C (-40°F to +158°F)
- · Humidity: 0 95% relative humidity, noncondensing
- Weight: 490 g (1.08 lb)

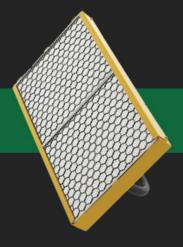
- Dose rate measurement range: 0.01 µSv/h
- 10 Sv/h (1 µrem...1000 rem)
- Dose measurement range: 0.01 µSv up to the limit of the meter display with RDS-31 scaler function
- Energy range: 50 keV 3 MeV for dose rate range 0.05 μ Sv/h - 10 mSv/h and 60 keV - 6 MeV for dose rate range 10 mSv/h
- 10 Sv/h.
- · Remote dose rate measurements
- · Non-volatile memory
- Dimensions: length 208 mm, cylinder
- Weight 220 g
 Temperature range: operation -40°C to
- +55°C. storage -40°C to +70°C.
- Enclosure Class: IP67



PORTABLE INSTRUMENTS







RDS Probe: GMP-12SD

External Gamma Probe

OVERVIEW

The GMP-12SD probe is used as an externally

connected detector to the RDS-31 family of

multipurpose meters and intended for

radiation dose rate applications.

QuickSweep™-Smart

Handheld Contamination Screening

OVERVIEW

The QuickSweep™-Smart is a wireless, handheld, contamination probe for alpha beta and gamma radiations. The QSS is

weight and robust for a wide range of

applications, e.g contamination screening of people or objects. Thanks to the state-ofthe-

art Mirion fibre detector technology, it features an outstanding sensitivity and

homogeneity, especially areas (gaps) less

60mm diameter or 35mm width. A wireless readout unit allow various expert functionalities.

QuickSweep™-Grand

Large Surface Contamination Monitor

OVERVIEW

The QuickSweep™-Grand is a portable contamination monitor for alpha, beta and

gamma measurement. It has been developed

for routine assessement and contamination

monitoring of large surface areas (floors, walls,

etc), The detectors and the micro-processor controlled electronics are state-of-the-art in mobile monitoring.

- range of RDS-31
- Dose measurement range: 1 µSv 500 Sv
- Dose linearity: + 15%)...500 Sv (+ 30%)
- Dose rate measurement range: 10 µSv/h
- Remote dose rate measurements
- · Dimensions: Length 185 mm, cylinder diameter 35 mm
- · Weight: 400 g
- Temperature range: Operation -40°C to +55°C. Storage -40°C to +70°C
- Enclosure Class: IP67

- · Detector: scintillating fiber detector for alpha, beta and gamma measurement
- Outstanding sensitivity and detector homogeneity
- Detection limit Co-60: 25 Bq
- Detection surface: approx. 100 cm2
- · Weight: 850 g
- Power supply: integrated Li-ion battery for 16 hours in full charge
- Protection rating: IP64 (splash waterproof)

- Dose rate measurement range: 0.01 µSv/h
- Dose measurement range: 0.01 µSv up to the limit of the meter display with RDS-31 scaler function
- Energy range: 50 keV 3 MeV for dose rate range 0.05 µSv/h - 10 mSv/h and 60 keV - 6 MeV for dose rate range 10 mSv/h
- 10 Sv/h.
- Non-volatile memory
- · Dimensions: length 208 mm, cylinder diameter 35 mm.
- Weight 220 g
- Temperature range: operation -40°C to +55°C. storage -40°C to +70°C.
 Enclosure Class: IP67







DRM-1 / DRM-2

Area Radiation Monitors

OVERVIEW

The DRM Digital Radiation Monitor is a compact

fixed or portable radiation monitoring system.

The DRM offers unparalleled features such as

integrated network and wireless connectivity

for easy integration into a network of remote sensors.

RDS-31 AM

Area Radiation Monitor

OVERVIEW

The RDS Area Monitor is a simple, easy to deploy area radiation monitor intended for any

remote monitong application. The RDS AM provides all the features of the RDS-31 with

integrated telemetry module and long power autonomy.

- · Detectors: 2 auto-switching GM Tubes; Optional Csl Scintillator
- Measurement Range: 0.05 mr/hr to 1000 R/hr (0.5 mSv/h to 10 Sv/h)
- Energy Response: + 20% at 70 keV
- · Sensitivity: 17 cps/mr/h (Low Range); 0.3cps/mr/h (High Range)
- · Battery Back-up: Three (3) 1.2v NiMH 2100mA rechargeable; 12 hours
- DRM1: 4.25" W x 7" L x 2.5" H
- DRM2: 4.8" W x 8.4" L x 4.2" H
- Weight:DRMI: 2lbs (907g)
- DRM2: 2.75lbs (1247g)
- Temperature Range
- Operation: 15oF to 122oF - Storage: -5oF to 140oF
- · Humidity: 10% to 95% RH (noncondensing)

- Custom cut enclosure with injection molded insert, both pieces UL94-HB Flame Rated.
- · Special high capacity air alkaline batteries
- Multiple mounting options
- Speaker holes and clear cover provide local alarm capabilities
- · Built in db9 connection for optional High Rad tolerant external probe
- · External Probe connects with standard AMP cable.

RDS-31iTxSD

- · With a combination of the new diode detector and removal of rad sensitive components the SD version provides a much greater instrument life in higher dose rates (~20 kR of exposure)
- · Special firmware for low current draw for extended run time (<4mA/hr)



DETECTION AND IDENTIFICATION







DMC 3000 PRD

DMC 3000 Add-on Module

OVERVIEW

The PRD Module is a Personal Radiation Detector add-on module to the DMC 3000 dosimeter for source detection and search. It is intended for First Responders, Law Enforcement, Customs Inspectors protecting critical infrastructures against unexpected radiation sources and who also need state-oftheart radioprotection.

HDS-101 GN

Handheld Identifier

OVERVIEW

HDS-101 is a gamma and gamma/neutron handheld device designed to search for and identify nuclear and radioactive materials. The HDS-101 is used to search, detect, localize and characterize radiological threats and secondary screening as perfect complement for installed radiation detection portals.

SPIR-Ace

Large Surface Contamination Monitor

OVERVIEW

SPIR-Ace is a versatile Radio-Isotope Identifier (RIID), taking advantage of SPIR family capabilities in a small and easy to use instrument. It addresses all applications requiring efficient detection and identification of radiological threats in security applications, including civil defense, border & customs. It also provides accurate assessment of nuclear materials for nuclear power plant, safeguard, abs, OSI/CTBTO agents, and more.

- · Compliant with ANSI 42.32, IEC 62401
- Detects better than 0.5 µSv/h level increase in less than 2 seconds.
- · Connect and ready to use
- · Designed for ruggedness and durability
- Excellent EMC Immunity
- Runs continuously in excess of 1000 hours from the dosimeter AAA battery.
 • Energy Range: 60 keV to 3 MeV (gamma)
 • Dimensions with DMC 3000: 131 x 60 x
- 21 mm (5.1 x 2.4 x 0.8 in) max. without clip 131 x 60 x 28mm (5.1 x 2.4 x 1.1 in) with standard clip
- Weight with DMC 3000: < 150 g (5.3 oz)
- Extension temperature range: -20°C to
- Enclosure Class: IP67

- Gamma: silicone diode; Neutron: Lil (Eu)
- Energy Range: 30 keV to 3MEv (Gamma); 0.025 eV to 14Mev (Neutron).
- · Measurement and identification range (gamma): $0.01 \mu Sv/h$ to $100 \mu Sv/h$ (1 urem/h to 10 mrem/h) Extended gamma range: 0.1 mSv/h to 10 mSv/h (10 mrem/h
- · Continuous spectra acquisition
- Varying Background Suppression (VBS) algorithm
- NORM Medical Discrimination algorithm (NMD) categorizes and identifies up to 4 isotopes simultaneously
- Power supply: 6 x AA batteries (Ni-MH rechargeable)
- Dimensions: 280 mm x 78 mm (11 in x 3.1in)
- Weight: 1500g (52.9oz)
- Temperature range: -20°C to 50°C (-4°F
- Humidity: < 90% at 42°C (108°F)
- Enclosure Class: IP54

- Detectors: NaI(TI) or LaBr3(Ce), energy compensated GM tube for high dose rate fields , moderated Lil(EU) neutron detector (in gamma-neutron option)
- Energy Range: 25 keV to 3 MeV (gamma) and 0,025 eV to 15 MeV (neutron)
- \bullet Dose rate range : 0,01 to 15 μ Sv/h (1 to 1500 µR/hr) for low gamma dose rate range (by Nal or LaBr3); extended gamma dose rate range 5 to 999 999 µSv/h (0,5 to 99 999 mR/hr) by GM
- · Continuous acquisition; dose rate, count rate and detection
- · Multiple specific nuclide libraries depending on application
- Source searching guidance
- Dimensions: 206 mm X 153 mm X 57 mm
- Weight: 120 kg (2.64 lb)
- Temperature range : -20°C to 50°C (-4°F to
- Enclosure class : IP54
- Connection to external alpha / beta probe
- · Can be connected to other warning and surveillance devices (e.g. watch, tablet





AccuRad™

Personal Radiation Detector

OVERVIEW

A discreet yet robust PRD designed for law enforcement, fire rescue, and other emergency responders to detect and interdict nuclear and radioactive materials. It also provides dose measurement and alarming capabilities for event response.

- · Solid and durable, with an impact-resistant covering
 • Simple to use - no training required
- · Discreet, with a top-screen display for quick-glance reading
- · Long-lasting, easily replaceable batteries allowing more than 900 hours in the field
- · Low cost of ownership
- Weight: 7 oz (200 g), including clip
 Size: 4.25 x 2.4 x 1.4 in. (108 x 61 x 36 mm) without clip
- Protection rating: IP67 (dust and 1 m (3 ft 3 in.) water immersion)
- Temperature: -4 °F to 140 °F (-20 °C to 60 °C)
- · Innovative heavy-duty bi-material construction
- Range: up to 1000 rem/h (10 Sv/h) with



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DETECTION AND IDENTIFICATION







SPIR-Ident Pedestrian

Spectroscopic Pedestrian Monitor

OVERVIEW

The SPIR-Ident Pedestrian is a gamma only or gamma and neutron spectrometric portal that can be used for monitoring pedestrians, luggage, small articles, parcels and cargo. The SPIR-Ident automatically sorts innocent alarms from actual alarms in real-time, without compromising the detection performances of actual SNM, RDD or unexpected radioactive source detection.

DMC 3000 PRD

DMC 3000 Add-on Module

OVERVIEW

The SPIR-Ident Vehicle is a gamma only or gamma and neutron spectrometric portal that can be used for primary and secondary screening of vehicles and containers. The SPIRIdent automatically sorts innocent alarms from actual alarms in real-time, without compromising the detection performances of actual SNM, RDD or unexpected radioactive sources.

HDS-101 GN

Handheld Identifier

OVERVIEW

The SPIR-Detect is an intuitively designed portal that uses the HDS-101 for continuous detection and identification of radioactive and nuclear materials. The SPIR-Detect is standalone or easily integrated into a network of monitors

- 1 to 4 detection pillars using 2 or 4 liter Nal(TI) Gamma detectors with fast digital
- · 1 or 2 moderated He3. BZnS or LZnS Neutron detectors
- 0,5 second continuous elementary spectra acquisition and stabilization (source less)
- · Count rate and dose rate calculation, alert criteria monitoring

 Real-time identification per channel and
- group of channels
- Isotope list: according to ANSI N42-38, IEC, IAEA standard Industrial, SNM, Medical and NORM radionuclides
- · Communication: Ethernet
- -Body: 148 x 50,2 x 22,2 cm (57 x 19,73 x 8,74 in)
- Weight: 62 kg (137 lb)

- · 1 to 4 detection pillars using 2 or 4 liter NaI(TI) Gamma detectors with fast digital
- · 1 or 2 moderated He3, BZnS or LZnS Neutron detectors
- · Flexible configurations for single/double sided and single/double height.
- Masked and Shielded SNM and RDD identification
- 0,5 second continuous elementary spectra acquisition and stabilization (source less)
- · Count rate and dose rate calculation, alert
- criteria monitoring
 Real-time identification per channel and group of channels
- Isotope list: according to ANSI N42-38, IEC, IAEA standard Industrial, SNM, Medical and NORM radionuclides
- · Communication: Ethernet
- -Body: 148 x 50,2 x 22,2 cm (57 x 19,73 x 8.74 in)
- -Base: Ø 32 cm (12.6 in)
- Weight: 62 kg (137 lb)

- Detectors: Gamma: Scintillator Csl; High Gamma: silicone diode: Neutron: Lil (Eu)
- Energy Range: 30 keV to 3MEv (Gamma); 0.025 eV to 14Mev (Neutron).
- · Measurement and identification range (gamma): $0.01 \,\mu\text{Sv/h}$ to $100 \,\mu\text{Sv/h}$ (1 µrem/h to 10 mrem/h) Extended gamma range: Power supply: 85 to 264 VAC
- Dimensions
- -Height : 145 cm (57 in)
- -Body diameter : 11 cm (4.3 in)
- -Base diameter: 33 cm (13 in)
- · Weight (SA version): 10 kg (22 lbs); Ballast weight: 5 kg (11 lbs)
- Temperature range: -20°C to 50°C (-4°F to 122°F)
- Humidity: < 90% at 42°C (108°F)
- Enclosure Class: IP54









SpiR-ID (LT)

Air/Water Monitoring

OVERVIEW

The SpiR-ID is a rugged handheld advanced identification device (RIID) designed to efficiently search for nuclear and radioactive materials. The SpiR-ID quickly and reliably identifies and categorizes radionuclides fordemanding scenarios such as heavily shieldedor masked radioactive and nuclear threats

SPIR-Pack

Sensitive Detection and ID

OVERVIEW

The SPIR-Pack is a Backpack Radiation Detector (BRD) device intended for discreet detection and identification radioactive and nuclear materials. The SPIR-Pack is intuitively designed for simple, vet effective source search and area mapping.

SPIR-Ident Mobile

Carborne and Airborne Spectrometry

OVERVIEW

SPIR-Ident Mobile system, is a movable radiation monitoring system, developed for vehicle, helicopter and aircraft use. It is a ruggedized and friendly deployable system with the higher existing capability for both detection and identification of radioactive and nuclear sources.

- Detectors: SpiR-ID Nal: 3" x 1.5" SpiR-ID LaBr: 1.5" x 1.5" LaBr- 2 moderated Lil(Eu) detectors- GM tube for high gamma dose rate • Energy range- 25 keV to 3 MeV
- (gamma) 0,025 eV to 15 MeV (neutron)
- Measurement range- <0.01 µSv/h to 10 mSv/h (lµR/hr tol Ř/hr)
- digital MCA 1024 channels
- Large TFT 3.5" VGA (640 x 480) sun readable display
- · Bluetooth, Wi-Fi, Cellular communications with embedded GPS
- Temperature range: -20°C to 50°C (-4°F to 140°F); -40°C (-40°F) on request
- Humidity: up to 100%
- · MILSTD 461F & 810G compliance
- Water and dust ingress IP65
- Power: i-ion rechargeable with Secondary "C" cells (6) - autonomy: typical 10 hours
- Dimensions: 320 X 145 X 175 mm (12.59 x 5.70 x 6.88 in)
- · Weight: Standard version 4.9 kg (10.8 lb): LT version 3.2 kg (7 lb)

- · Detectors: Nal: 3" x 3" GM tube for high
- Optional moderated BZnS or LZnS Neutron detector
- Energy range- 25 keV to 3 MeV (gamma) 0,025 eV to 15 MeV (neutron)
- Measurement range- <0.01 µSv/h to 10 mSv/h (lµR/hr tol Ř/hr)
- Identification-Fast digital MCA 1024
- · Bluetooth, Wi-Fi, Cellular communications with embedded GPS
- Temperature range: -20°C to 50°C (-4°F to 140°F);-40°C (-40°F) on request
- Weight: 15 lb

- · 1 to 4 detection units (2 or 4 liter), MCAs and optional He3 or BZnS neutron detectors
- · Ruggedized tablet/laptop PC with GPS
- · SIA Identpro identification algorithm 0.5 or 1 second continuous elementary spectra acquisition and stabilization (source less)
- Mapping: trajectory with level indication and alerts locations flags
- 1024 channels fast MČA, one per detector

(with 4 | Nal(TI))

- Energy range 30keV to 3 MeVIdentification up to 4 isotopes mixed with confidence & quantification level
- Isotopes list according ANSI N42-34, N42-38, IEC62327, IEC 62484 draft,
- Temperature range: -20°C to +50°C (-68°F to +122°F), temperature shock protected
- Power supply: vehicle 10-30 VDC or main 85-264 VAC
- Dimensions Single detector case: 84 cm x24 cm x24 cm (33 in x9in x9 in), 18 kg (39.7 lb) (with 2 | Nal(TI)), 24 kg (52.9lb) (with 4 | Nal(TI)) - Double detector case: 90 cm x42 cm x33 cm (35 inx16 in x13 in), 35kg (77 lb) (with 2 | Nal ALMURBAT

DETECTION AND IDENTIFICATION







SPIR-Env

Air/Water Monitoring

OVERVIEW

SPIR Env is a compact and robust system monitoring air and water radiological pollution using gamma spectrometry. The system can be used to measure the contamination of sea water or rivers or the sewage from nuclear power plants, hospitals, and industry. It can also be used to evaluate the contamination of the air by noble gas and particulates in the context of environmental monitoring, or for radioactive fallout measurements.

EVENT-Guard

Low Profile Detection and ID

OVERVIEW

Event-Guard is a highly sensitive and inconspicuous system designed for surveillance of critical infrastructures or temporary event security by detecting and identifying radiological threats. Event-Guard provides real-time identification with either remote and discreet alarms, or instant sound and visual alarm for checkpoint use. A dedicated data supervision software provides detailed spectrum analysis.

HDS-101 GN

Conveyor Mounted Sensitive Detection and ID

OVERVIEW

The HDS Conveyor incorpoprates the HDS 101GN for detection and identification of articles passing through an XRAY Scanner/Conveyor.

The HDS Conveyor form factor allows for easy

integration with any conveyor system

PRODUCT FEATURES

Tolerant to changing background

- Simultaneous long and short integration time
- · Ambient and underwater measurement
- · Waterproof up to 100 m
- Automated operation
- Compact and robust system
- · Embedded GPS
- Embedded 3G Transmission
- Remote supervision software
- Dimensions: 300 mm x 234 mm x 120 mm
- · Weight: 6.5 Kg
- Temperature: -20°C to +50°C

PRODUCT FEATURES

- Detectors: Csl(Tl) for spectroscopy and low gamma dose rates, Si diode for high gamma dose rates and Lil(Eu) for neutron
- Energy Range: 30 keV to 3 MeV (gamma) and 0,025 eV to 15 MeV (neutron).
- Dose rate range : 0,01 to 100 μ Sv/h (1 μ R/hr to 10 mR/hr) for low gamma dose rate range by CsI and 0,01 to 100 μ Sv/h (10 mR/hr to 1 R/hr) for extended gamma dose rate range by Si diode
- Dimensions: fits in a 330 mm X 100 mm X 100 mm (12.99 in x 3.93 in x 3.93 in)
- Weight: 5.3 kg (11.68 lb)
- Temperature range : -20°C to 50°C (-4°F to 122°F)
- Enclosure class : IP54 and optional IP65

DRODUCT FEATURES

- Gamma: silicon diode; Neutron: Lil (Eu)
- Energy Range: 30 keV to 3MEv (Gamma); 0.025 eV to 14Mev (Neutron).
- Measurement and identification range (gamma): 0.01 µSv/h to 100 µSv/h (1 µrem/h to 10 mrem/h) Extended gamma range: 0.1 mSv/h to 10 mSv/h (10 mrem/h to 1 rem/h)
- · Continuous spectra acquisition
- Varying Background Suppression (VBS) algorithm
- NORM Medical Discrimination algorithm (NMD) categorizes and identifies up to 4 isotopes simultaneously
- Power supply: 6 x AA batteries (Ni-MH rechargeable)
- Dimensions: 280 mm x 78 mm (11 in x 3.1 in)
- · Weight: 1500g (52.9oz)
- Temperature range: -20°C to 50°C (-4°F to 122°F)
- · Humidity: < 90% at 42°C (108°F)
- Enclosure Class: IP54







CeMoSys

Central Monitoring System

OVERVIEW

CeMoSys[™] is a central monitoring software platform for the display and administration of connected Mirion contamination and clearances monitoring systems and a facility network.

SpirVIEW

Central Alarm Station

OVERVIEW

SpirVIEW is a global supervision software for

centralized monitoring of connected Mirion radiation detection and protection devices. SpirVIEW displays real time radiological data with integrated image, video, mapping, reporting and reachback. SpirVIEW is an all-in common operational solution for critical

infrastructure security and surveillance.

DDODLICT FEATLIDES

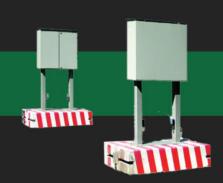
- Monitor status overview for all Mirion Contamination and Clearance monitor families
- Measurement results and details on remote desktops
- Management of System Check protocols
- Overview of current measurement parameters on monitors
- Data backup for measurement results, parameter and system check protocols for all Rados monitor families on site

DRODUCT FEATURES

- Global supervision software for pocket and handhelds devices, vehicle and pedestrian monitors, fixed and mobile systems
- Real-time display of data for each
- Various information simultaneously displayed: status, video, alarms and measurement details
- · Equipment localization on a site map
- Visual and audible alarm indication
- Operator guidance for easy event management
- · Easy event report filling
- Local computers for secondary screening data



CONTAMINATION AND CLEARANCE







RTM911

Light Truck Monitor

OVERVIEW

The RTM911 features flexible and versatile

measurement for around-the-clock monitoring

of vehicles, packages and people for radioactive materials, contamination and Special

Nuclear Material (SNM).

RTM910

Truck Monitor

OVERVIEW

The RTM910 features flexible and versatile

measurement for around-the-clock monitoring

of vehicles, packages and people for radioactive materials, contamination

Nuclear Material (SNM).

FastTrack-Vehicle™ XL

Truck Monitor

OVERVIEW

The FastTrack-Vehicle™ XL delivers a robust performance under circumstances a conventional gamma monitor would produce a false alarm, or even worse go into genuine alarm without actually being able to locate the

vehicle or object carrying a source. The monitor combines the FastTrack technology with highly sensitive GammaFibre™ detectors, low energy response, and NORM (naturally occurring radioactive material) recognition, making the FastTrack-Vehicle™ XL a reliable partner for monitoring truckloads of vehicles in very short time.

- · Various configurations to match the requirements of different customers
- Detector: 2 ea RPD40/200
- Dimensions: 1000 x 300 x 1000mm
- Temperature: 20°C +50°C
- Humidity: <75 % to 95 %
- · Designed for performance in various demanding environments

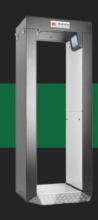
- · Monitoring of trucks, pedestrians or trains
- Exceeds ANSI N42.35 and ITRAP requirements
- NORM Rejection
- · 4 RPD40/200DD detectors
- Dimensions: 700 x 300 x 2400mm
- Temperature: 20°C to +50°C
- Humidty: <75% to 95%

- · Detectors 6 x 8 litres active volume per monitor cabinet
- Detectors active monitor vol. in total: 2 x 6 GammaFibre™ detectors 96 litres
 • Lead shielding: 15 mm
- MDA: 40 kBq, Co-60(distance of cabinets
- 4 m, speed up to 20 km/h)
- Energy range 30 keV 3 MeV
- · False alarm prevention
- · Excellent detector homogeneity due to fibre technology
- High sensitivity: 40 kBg (Co-60)
- Automatic background subtraction for heavy loaded trucks also in high background
- · Operating software: robust, real-time, multitasking QNX
- · Compliance: ANSI 42.35, IEC62244, IAEA NSSI, etc.
- Dimensions: 2453 x 2535 x 262 mm
- Weight: 2 x 520 kg









HandFoot-Fibre™ XL

Hand Foot Clothing Monitor

OVERVIEW

The HandFoot-Fibre™ XL is used in circumstances which do not require a full body monitor. It is well-suited for mobile contamination screening inside controlled areas or in temporary controlled areas. The monitor is based on state-of-the-art Mirion BetaFibre™ detectors which feature an outstanding measurement sensitivity and uniformity - for a fast and reliable measurement process even in conditions with high, fluctuating background

FloorSweep-Fibre™ II

Floor Contamination Screening

OVERVIEW

The FloorSweep-Fibre™ II is designed for large area floor monitoring of beta contamination (alpha discrimination optional) inside and outside buildings. The monitor is equipped with 4 BetaFibre™ detectors with a total detection area of 1940 cm². The detectors are located in the flat front part, thus being easily able to access all areas to be measured.

The easy-to-maneuver bogie is equipped with 4 rugged and smooth-running wheels - well suitable for outdoor usage.

- Outstanding detector sensitivity and homogeneity
- Economic and robust operation & maintenance
- 100 % gas-free
- · Very short measurement time
- · Easy and intuitive usage
- Detachable probe, e.g. for monitoring of cloths
- Wheels for easy transport
- Dimensions: Height: 1660 mm, width: 478 mm, depth: 750 mm
- Weight: 57 kg
- Detectors: 8 scintillating BetaFibre™ detectors
- Detection limit: 30 Bq (hand), 45 Bq (foot) for Co-60

PRODUCT FEATURES

- · High sensitivity (40 Bq/Co-60)
- Beta detection
- · Alpha discrimination as an option
- · Plug-and-play operation
- Low costs in maintenance and operation due to fibre technology
- Dynamic background measurement and subtraction
- Dimensions: 1430 x 1060 x 500 mm
- · Weight: 50 kg
- Detectors: 4 BetaFibre™ detectors
- Sensitive detection area: 1940 cm²
- Protection rating: IP63 (monitor)
- Compliance: IEC 60325 etc

FastTrack-Fibre™

Walk-through Portal Monitor

OVERVIEW

The FastTrack-Fibre™ sets a new standard for gamma portal monitors by combining state-ofthe- art Mirion GammaFibre™ detectors with the novel FastTrack technology. The ingenious FastTrack algorithms ensure a robust performance, especially in challenging background conditions, where conventional gamma monitors would frequently produce false alarms. In combination with the Mirion GammaFibre ™ detectors, this allows for an exceptionally fast detection process withremarkably low detection limits - for an outstanding performance even in the most challenging conditions.

PRODUCT FEATURES

- Up to 14 large volume GammaFibre $^{\text{\tiny{TM}}}$ detectors in a compact steel housing
- Detection limit 550 Bq Co-60, very low compared to conventional monitors
- Drastically reduced false alarm rates, especially in challenging background conditions
- Very short measurement time at all walking speeds
- Touch screen for configuration and data display
- Audio and visual alarm signals
- · Uninterruptible power supply
- Dimensions
- -Height: 2258 mm
- -Length: 600 mm
- -Passage way width: 620 900 mm





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