A LabLogic Company

CBRNe Detection

for Security and Policing Applications

www.southernscientific.co.uk

southern scientific

EXPERIENCE & EXPERTISE

Contents

Chemical

Griffin™ G460 3
Griffin™ X-Sorber 3
Agentase C1 4
Agentase C2 4

Biological

BioCapture 5
IBAC™ 2 5
BioThreat™ Alert Reader CX 6
BioThreat Alert™ Test Strips 6

Radiological / Nuclear

Personal Electronic Dosimeter (PED) 7
DoseRAE 2 7
identiFINDER R200 8
identiFINDER R300 8
identiFINDER R400 9
identiFINDER R500 9
GammaRAE II R 10
NeutronRAE II 10
Radhound X/E and X/I 11
Mobile Systems 11
Pedestrian Radiation Portal Monitors 12
Vehicle Radiation Portal Monitors 12
GammaTRACER 13
GammaTRACER Spider 13

Explosives

Fido® X2 14
Fido® X3 14

Narcotics / Forensics

Griffin™ G410 15
Fido® X80 15

Griffin™ G460

The Griffin™ G460 mobile GC/MS identifies chemicals in complex samples, providing protection of assets 24 hours a day, 7 days a week.

Multi-modal sample introduction allows the Griffin G460 to accept liquid, solid, and air samples. The self-contained system can accept direct liquid injections via syringe or solid phase micro extraction (SPME) fibres.

- Prepless sampling of air, water, solids and trace.
- 24/7 continuous air monitoring.
- Chemical identification with MS/MS confirmation.
- Remote handheld air sampler (X-Sorber).
- Tested to MIL-STD-810G for shock and vibration.
- Source holder for reproducible QC positioning.

Griffin™ X-Sorber

Designed for the collection and desorption of air samples, the Griffin™ X-Sorber is easy to operate weighing only 3 lbs. This handheld collection system is compatible with the Griffin G460 mobile GC/MS system.

The X-Sorber provides flexible options for a broad range of applications. Users can hand-carry the X-Sorber while sampling, utilise the clip accessory for hands-free operation in the field or employ the 'leave and retrieve' CONOP via programmable collection methods.

- Portable and simple to use.
- Provides legally defensible data with sample time/date stamp and integrated GPS receiver.
- Dual-tube sampling allows for both identification and chain of custody evidence.
- Intrinsically safe.

Fido® C1

Fido C1 is an award-winning chemical agent detection kit (CAD KIT) that uses enzyme-based technology to rapidly detect class-specific agent contamination on a variety of surfaces.

Used to conduct surface, solid and liquid interrogation for the presence of nerve (G & V series), blood (AC) and blister (HD) agents, acids, bases, aldehydes and oxidizers, the Fido C1 kit is provided in a small carry pouch weighing less than 0.5 kg and contains six sensors, which can be custom-configured for the emergency response mission requirement. The sensors do not destroy the sample and can be saved for eventual forensic analysis. The kit also includes a tool specifically designed to handle bulk samples.

- Sensitive to levels below what can affect the human body.
- Extremely low false positive and negative rates due to unrivaled specificity.
- Training completed in less than 5 minutes, works similar to a glow stick.
- Detection results appear within 5 minutes.
- Provides validation of results from orthogonal sensors.

Fido® C2

Fido™ C2 agent disclosure spray complements electronic sensors by providing the ability to map chemical agent contamination for emergency response missions, as well as aid in the decontamination of personnel or equipment after exposure to CWAs, specifically nerve agents (G- & V-series) and sulfur mustard (HD).

After being sprayed directly onto a surface, the Fido C2 enzymes react by changing colour to red within 5 minutes of detecting CWAs. This colour change reveals the specific location of contamination. The forensic spray is translucent yet allows the threat to be seen under UV-light, a critical feature for covert operations.

- Ability to detect submicrogram (trace) levels of agents.
- Three applicator sizes: handheld, man-portable backpack, and wide-area cart-based system.
- Reveals exact location of agent on surface to reduce decontamination costs.
- Optional fluorescent additive enhances the visual response when used with an ultraviolet (UV) light in poor lighting conditions.
- Rapid response (within 5 minutes).
- Training completed in less than 1 hour.

BioCapture

BioCapture is a handheld unit designed for first responders working in unfamiliar, challenging and dangerous environments. It collects potential aerosolised biological threats such as anthrax, plague, smallpox, and tularemia and offers cutting edge air sampling in a rugged, lightweight package.

BioCapture collects micron and submicron airborne particles and soluble vapours onto a pre-assembled, disposable cartridge. After each sampling mission, simply snap-in a replacement cartridge and operators are ready for the next mission.

- Single button operation in hot-zone.
- 100% decontamination ability.
- Flexible sampling times.
- No internal lines to decontaminate, no sand or dirt to clean out of moveable parts and corners.
- Disposable collector cartridge prevents cross-contamination.
- Easy to operate by user in fully dressed Level A or MOPP-IV gear.

IBAC™ 2

The IBAC™ 2 is a continuously operating monitor that provides early warning of biological aerosol threats.

It can operate independently or as part of a network configuration to form the 'first tier' of a building air-security system. In addition to providing real time alerts to biological aerosol threats, it can trigger a secondary aerosol sampler for subsequent identification.

- Rugged design and high sensitivity allow the IBAC to be deployed in severe environments such as HVAC systems and outdoor environments.
- Provides near real time warning capability for biological aerosol threats.
- Government validated with over 125,000 hours of run time in relevant environments.
- Alert can automatically trigger a particular sampler for subsequent identification.
- Operates unattended 24/7 without consumables.
- Complete self-diagnostic system.
- Battery or line powered with up to 16 hour run time per battery charge.
- Easily integrated with most building monitoring and control systems.
- Alert algorithms validated for both indoor and outdoor environments.

BioThreat™ Alert Reader CX

The BioThreat Alert™ Reader offers a convenient, easy to use, consistant way of analysing unknown samples for the rapid detection of potential bio-warfare agents.

- Fully functional, ultra-portable Android-based cell phone reader capable of storing data on thousands of readings.
- Obtains results in less than 30 seconds.
- WIFI and Bluetooth connectivity
- Handheld (270 grams).
- Dimensions 16 x 7 x 5 cm.
- Includes rugged carrying case.

BioThreat Alert™ Test Strips

The best defence option for rapid, on-site screening of unknown biological threats.

Test strips currently available for: Anthrax, Plague, Tularemia, Ricin, Botulinum Toxin, Staph Enterotoxin B (SEB), Orthopox, Brucella, Abrin, BW Simulants, Proficiency Test, Sample Collection Kit.

Personal Electronic Dosimeter (PED)

Ideal for users who are not specially trained to measure radiation exposure, the PED family have been specially designed to be easy to use and understand. Encased in weather, shock and drop proof housings each PED features a smooth clean design and simple to use DoseVision™ software.

- 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.
- Multiple languages.
- Multiple users.
- Waterproof up to 1 m.

PED-IS

This intrinsically safe PED is perfect for both radiation specialists and those who do not work with radiation every day. Robust and reliable, it is safe to use in potentially explosive areas, making it ideal for challenging environments.

PED Blue

This is the non-intrinsically safe version of the PED-IS. Lighter, it retains the same high quality design and features a direct micro USB connection.

PED+

An advanced version of the PED Blue, it can be used as both a PED and a hand held dose rate survey meter. The PED+ has a number of added features, such as Bluetooth, GPS and pop-up message alarms.

DoseRAE 2

The DoseRAE 2 makes use of both a PIN diode and CsI crystal to provide a fast responding doserate display, ensuring users can react quickly in dangerous scenarios.

- Wide dose rate range: 10 µSv/hr - 10 Sv/hr.
- Broad energy range: 20 keV - 6 MeV.
- Accountability: Onboard memory for up to 3,000 measurements.
- Long life: 200 hours operation between battery charges.
- Discrete: Small unit, weighing less than 50 g.
- Standard package includes: Charging cradle, USB connector and ProRAE Configuration and Data Management software.

identiFINDER R200®

A rugged, pager-sized Spectroscopic Personal Radiation Detector (SPRD), it provides full ANSI N42.32 Personal Radiation Detector (PRD) compliance and features next-generation solid state detector read-out technology that delivers ANSI N42.48 SPRD compliance with nuclide identification.

- Pager-sized and wearable.
- SiPM technology with CsI provides ≤ 7.5% resolution.
- iOS/Android apps available.
- Crisp, clear display in full sunlight and low light conditions.
- Single-hand operation with three-button control.
- Common user interface with other FLIR radiation detectors.
- ≥ 36-hour battery life, plus additional 18-hour replaceable battery.
- No consumables or user maintenance.
- Internal web server for easy data retrieval.
- OneTouch Reachback.

identiFINDER R300

Providing the highest detector resolution available in a pager-sized device, the R300 virtually eliminates the false alarms and false positives that are so common to personal radiation detectors.

- Transflective colour display.
- 24 hour battery life.
- IP63 compliant enclosure protection.
- Data storage for up to 600,000 identifications and spectra and over 1 million alarms.
- Designed to meet ANSI N42.48.
- Standard ANSI N42.42 data output format as preferred by triage teams as well as the government and scientific communities.
- Designed and built to meet the most rugged field environments.
- Easy to read display, even in bright sunlight.
- Ease of use in high background environments.
- Highly reliable, accurate results.
- Small enough to be carried on a belt or in a pocket.
- Almost identical user interface with other FLIR radiation detectors.
- No consumables and maintenance intervals of 5 years.
- Configuration and data download through a standard web browser. No need for a dedicated PC software.

identiFINDER R400

The R400 is able to rapidly detect, quickly locate, accurately measure and precisely identify gamma emitting radionuclides.

- TFT LCD 64k colour display.
- LED stabilised.
- 12 channel, SIRF III GPS.
- Reachback via Bluetooth® connected to DUN capable cell phone.
- ANSI N42.42 output format.
- Web interface for monitoring and configuring instrument.
- Original three button operation.
- 1GB event data storage.
- Visible, audible and tactile alarm annunciators.
- Embedded windows CE operating system.
- Meets ANSI N42.34 shock conditions.

identiFINDER R500

The identiFINDER R500 is an extremely sensitive and accurate digital hand-held gamma radionuclide identification device (RIID).

Available in two configurations (NaI and LaBr), the R500 is able to quickly detect, rapidly locate, accurately measure and precisely identify sources of contamination from their gamma radiation signature.

- Rapidly determine the primary location of the radiation.
- Determine the nuclide identification in as little as a few seconds.
- Alarms on doserate changes above background.
- Continually stabilises for temperature and other conditional changes.
- Real time visual, audible and tactile alarm annunciators.
- Reach-back via Bluetooth with event data.
- Easy operation with hazmat gloves.
- Radionuclides are labelled as NORM, industrial, medical or SNM.
- Expert mode.
- Gamma spectrometer functions.
- Change settings and operational parameters.

GammaRAE II R

The GammaRAE II R is a gamma radiation detector and full-range dosimeter in a single instrument.

Designed specifically to meet the needs of first responders, it has the rapid response of a detector and the accurate dose measurement of a dosimeter.

- Sensitive CsI scintillator for excellent search capability and fast response.
- Energy-compensated PIN diode sensor for high dose rate range and accurate dosimeter capabilities.
- Prominent visible, audible and vibration alarms.
- Alerts first responders to radioactive threats.
- Accurately measures accumulated dose to the wearer.
- Immersible in water for easy decontamination.
- Top-mounted, invertible display.
- Continuous digital readout in Rem/hour (µR/h and mR/h) or in Sievert/hour (µSv/h and mSv/h) and counts per second (cps).
- Two operation keys, simple intuitive programming.
- Long calibration life.
- Two AA alkaline batteries last up to 600 hours.
- Large, 30,000-point datalog capacity, downloaded via wireless Bluetooth® connection.

NeutronRAE II

NeutronRAE II provides rapid detection of both gamma and neutron radiation sources even in potentially flammable environments.

- Detects neutrons from weapons grade Plutonium (239Pu) and gamma rays from potential dirty bomb materials.
- Sensitive CsI and LiI scintillators for excellent search capability and fast response.
- Certified intrinsically safe and water-immersible for chemical decontamination purposes.
- Prominent visible, audible and vibration alarms.
- Immersible in water for easy decontamination.
- Top-mounted, invertible display.
- Continuous digital readout in µR/h or µSv/h and counts per second (cps) for gamma radiation, and cps for neutron radiation.
- Two operation keys and simple intuitive programming.
- Long calibration life.
- Runs on two AA alkaline batteries which last up to 600 hours.
- Large, 30,000-point datalog capacity, downloaded via wireless Bluetooth® connection.

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.
- Fully adjustable alarm levels.
- Scaler timer function.
- Multiple probe library/configuration.
- Peak mode.
- Over range.

Mobile Systems

Mobiles systems come in a variety of sizes and forms for use in land vehicles, marine vessels and aerial applications.

Provided with extra packaging for operation in very harsh in-situ environments, these systems are resistant to both temperature and shock extremes. They utilise similar software and hardware to the portal systems, but also have features and options of portable systems such as wireless communications and GPS/GIS displays.

- Rapid deployment.
- Fast set up.
- Easily moved.
- Search and stationary monitoring.
- Optional designs for high shock (100G) and vibration environments.
- Waterproof designs for marine applications.
- Modular System Electronics.
- Single or multiple panels systems.
- Multiple panels allow directional detection.
- Battery operated or universal power supply.

Pedestrian Radiation Portal Monitors

Developed for border control, port security, airports and building/asset protection, the guardian range of pedestrian radiation portal monitors are configurable depending on source distance and shielding assumptions.

- High sensitivity.
- Gamma and neutron detection.
- Spectroscopic identification (gamma).
- Fast throughput.
- Very effective, detection algorithms and patented Threat Matrix.
- Low false alarm rate.
- Clear and user friendly interface.
- Indicates location of hotspots.
- Robust and rugged.
- Easy maintenance, modular construction.
- Complete data logging.
- Network monitoring.
- Customisable configuration.

Vehicle Radiation Portal Monitors

A range of customisable vehicle radiation portal monitors for detection and location of radioactive materials that may be present in loads entering or exiting a facility. Applications include steel or aluminium plants, scrap handlers, nuclear power plants, research facilities to monitor all vehicles entering or exiting.

- High sensitivity.
- Fast throughput.
- Very effective, detection algorithms and patented Threat Matrix.
- Low false alarm rate.
- Clear and user friendly interface.
- Indicates location of hotspots.
- Robust and rugged.
- Easy maintenance, modular construction.
- Complete data logging.
- Network monitoring.
- Customisable configuration.

Gamma Tracer

With the autonomous radiation monitoring probe GammaTRACER the gamma radiation dose is continually registered in the chosen time sequence.

Available types – BASIC, WIDE, HIGH and XL differ mainly for the counter tubes. They cover a broad range of applications, are lightweight and therefore ideally suited for both, mobile and stationary tasks.

GammaTRACER XL incorporates a high-volume GM-tube, which qualifies it for applications requiring high sensitivity.

Energy-saving chip technology allow maintenance-free non-stop operation of the GammaTRACER probe of typically five years, with extended battery pack up to ten years!

Hermetically closed, it is designed to endure the harshest environments.

Equipped with a radio module, the probes can be used with SkyLINK and ShortLINK systems to offer a new dimension in wireless data collection.

- Low power electronics allows operation from battery power for up to 10 years, removing the need for mains supply.
- Can transmit via wired connection, UHF radio, GSM, GPRS or ISDN.

GammaTRACER Spider

The autonomous gamma probe is specially designed to cover the needs of first responders in an emergency scenario.

Based on the proven GammaTRACER design, the probe provides reliable measurement of the gamma dose rate and wireless data transmission to the crisis centre via SkyLINK radio or Iridium satellite modem.

- Innovative self-erecting design for fast deployment.
- Ultra compact design.
- Emergency proof communication options.
- SkyLINK radio modem (up to 60 miles/100 km).
- Satellite modem (Iridium).
- Built-in battery for up to 4 years operation.
- Built-in GPS.
- Hermetically sealed weatherproof housing.
- Wide measurement range: 20 nSv/h up to 10 Sv/h.
- Can be used to quickly enhance density of existing monitoring networks.

Fido® X2

Fido X2 is an ultra-lightweight, handheld explosives trace detector (ETD). It features FLIR's proprietary TrueTrace™ technology to detect a broad range of chemicals used in the manufacture of homemade, commercial, and military explosives with best-in-class sensitivity.

- TrueTrace detection in ≤10 seconds.
- Detects broad range of threats.
- Quick three-minute start-up.
- Rapid clear-down in seconds.
- Intuitive, go/no-go alarms.
- On-screen guided operation.
- On-device video training.
- Ultra-lightweight <680 g.
- Reusable sampling swipes.
- No radioactive ionisation source.
- No hazardous chemicals.

Fido® X3

Designed with transportation security in mind, the Fido® X3 is the lightest and most sensitive Handheld Explosives Trace Detector on the market.

Housed in a magnesium case with a splash-proof seal, the Fido's rugged design meets the rigorous MIL-STD 810-G specifications. It has an 8 hour battery, starts from cold in under 5 minutes, and clears in seconds, reducing time waiting and providing more time for sampling.

Adding to the capabilities of the previously fielded Fido® NXT, the Fido® X3 adds broad threat detection including Ammonium Nitrate, TATP, and emerging liquid threats like Hydrogen Peroxide and Nitromethane. Using FLIR's exclusive Sensing Element technology, the detection channels can be controlled to alert on the threat materials you care most about. As new threats emerge, the Fido® X3 will be field upgradable to incorporate new detection chemistries that are specifically designed to detect the new threats.

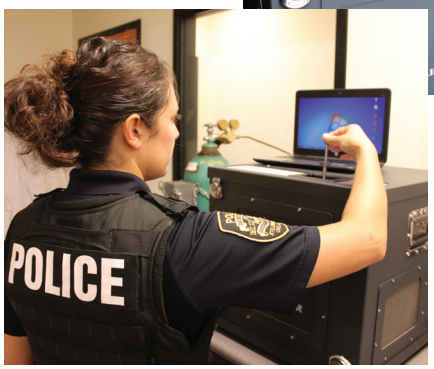
- Broad Threat Detection – responds to traditional, homemade and liquid explosive threats.
- Can readily identify threat materials by class.
- Weighs under 1.5 kg.
- MILSTD 810 g tested to survive the toughest environments.
- Long-lasting user replaceable 8 hour battery.
- Responds only to the threats you care about.
- Field upgradable potential for detection of new threats.
- Easy to use – simplified Go / No Go interface.
- Provides value-added capability to canine detection efforts.

Griffin™ G410

The Griffin™ G410 mobile GC/MS identifies chemicals in complex samples, providing protection of assets 24 hours a day, 7 days a week.

Multi-modal sample introduction allows the Griffin™ G410 to accept liquid, solid, and air samples. The self-contained system can accept direct liquid injections via syringe or solid phase micro extraction (SPME) fibres.

- Quick and simple to use, from field operator to scientist.
- Extremely low cost-per-sample.
- Continuous air monitoring with real-time response.
- Pre-loaded test methods with wizard for fast field operation.
- Accurate, comprehensive GriffinLib™ chemical library.
- Gold-standard identification with MS/MS confirmation.



Fido® X80

The FLIR Fido® X80 is a desktop trace detector that is used to screen personal belongings, parcels, cargo, skin, vehicles, and other surfaces for explosives and narcotics threats. It delivers a significantly lower false alarm rate than other offerings, offers expandability to address future threats without impacting sensitivity, and ensures fast and reliable clear-down to maximise availability.

- Simplified red-light/green-light threat screening.
- Significantly lower false alarm rate than other offerings.
- Detects and identifies explosives and narcotics within seconds.
- Expandable library to address new threats.
- Fast and reliable clear-down and no bake-outs.
- Non-radioactive ionisation source and limited maintenance.
- No data interpretation required; takes only minutes to train.
- Exclusive miniature ion trap mass spectrometry technology.

Service and Support

Southern Scientific has a team of fully qualified service engineers, who support customers spanning the length and breadth of the UK. We can provide factory or on-site service as required, based on single visits, planned maintenance or full support under contract. We maintain a high level of spare parts, ensuring lifetime support capability.

Our systems group can offer its service for the larger installed equipment, from initial planning to installation, completion and training. We can provide expert knowledge and experience, gained through involvement in a number of large-scale projects throughout the years.

ISO Certified

Southern Scientific Ltd is certified to ISO9001:2008, ISO 13485:2003 and EN ISO 13485:2012 representing the high level of quality assurance and management that we provide at every stage of the supply process, whether a product is distributed on behalf of our trusted manufacturers or constructed in our UK workshop. This accreditation means that our customers can place an order knowing that the delivered product will be suitable for its intended use, fully compliant with EU legislation and in full working order.

All our products are CE marked.

Southern Scientific Limited

Scientific House, The Henfield Business Park
Shoreham Road, Henfield, BN5 9SL, UK

E-mail: info@southernscientific.co.uk
Tel: +44 (0)1273 497600
Fax: +44 (0)1273 497626

Web: www.southernscientific.co.uk

Version 1.1 February 2017