

# BERTIN INSTRUMENTS



THE INV

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# Bertin Instruments



Bertin Instruments is a global provider of advanced radiation detection and environmental monitoring solutions, specializing in handheld monitors, personal electronic dosimeters, environmental monitoring systems, and waste & recycling management technologies. Their instruments are designed to meet the rigorous demands of nuclear facilities, emergency response teams, and environmental agencies.



Their handheld monitors and personal electronic dosimeters offer real-time radiation assessment, ensuring personnel safety in various operational environments. Bertin's environmental monitoring systems provide continuous surveillance of air, water, and soil, facilitating early detection of radiological threats and compliance with regulatory standards. In the realm of waste and recycling management, their solutions enable the detection and control of radioactive materials, promoting safe and sustainable practices.

By integrating cutting-edge technology with user-centric design, Bertin Instruments delivers reliable tools that support critical decision-making and enhance safety protocols.

Elevate your radiation safety and environmental monitoring capabilities with Bertin Instruments' comprehensive solutions.

# HANDHELD MONITORS





## MINITRACE CSDF - Bertin Instruments

MiniTRACE CSDF is a unique multipurpose meter for contamination control, survey, dose rate and X Rays radiation measurement.

The MiniTRACE CSDF is a multipurpose instrument fulfilling the functions of a contamination, survey and dose rate meter. It is designed to improve the detection and the quantification of radiation contamination, making this a frontline tool in the protection against uncontrolled distribution of radioactive material. MiniTRACE CSDF provides several functions and measurement modes such as the dose rate, the activity or the count rate.

With the activity and surface contamination modes, different nuclides can be selected from the inbuilt library. The surface contamination mode is calibrated according to ISO 7503-1. Combined with the right accessories, wipe tests (surface contamination) and food tests (food contamination) can be performed. A mean value mode and a count up mode are provided to increase instrument accuracy.



### Datasheet

#### Radiation type

- Alpha, beta and gamma

#### Detector type

- Geiger-Mueller pancake, active counter area 15.5 cm<sup>2</sup>, active diameter 44.5 mm, window 2.0 mg/cm<sup>2</sup>, energy compensated

#### Display unit

- $\mu\text{Sv/h}$ , cps, Bq, Bq/cm<sup>2</sup> and Bq/L

#### Measurement range

- Dose rate: up to 5,000  $\mu\text{Sv/h}$  (100 mR/h)
- Pulses: up to 10,000 cps (300,000 cpm)
- Activity (depends on the radionuclide): up to 100 000 Bq (999,000 dpm)
- Surface contamination (depends on the radionuclide): up to 5,000 Bq/cm<sup>2</sup> (30,000 dm/cm<sup>2</sup>)
- Food: up to 100,000 Bq/l (1,000,000 pCi/l)

#### Gamma sensitivity

- 4.3 cps/ $\mu\text{Sv/h}$

## Energy Range

- 26 keV to 1.25 MeV, lid has to be closed

## Sensitivity

- Co60: 0.41 cps/Bq/cm<sup>2</sup>; C14: 1.65 cps/Bq/cm<sup>2</sup>; Sr90+: 10.65 cps/Bq/cm<sup>2</sup>; Am-14: 4.19 cps/Bq/cm<sup>2</sup>; Cl36: 9.57 cps/Bq/cm<sup>2</sup>; Cs137: 11.15 cps/Bq/cm<sup>2</sup>; U238: 4.19 cps/Bq/cm<sup>2</sup>; I131: 9.71 cps/Bq/cm<sup>2</sup>

## Display

- 6-digit LCD display, plus 5-digit alpha numeric display for alarm- and status messages

## Grid

- 0.8 stainless steel, 80% transparency, easily removable

## Integration time

- Automatic, with count up mode adjustable

## Energy supply

- 2 Mignon batteries (type: LR6, AA, MN 1500) 1.5V

## Battery autonomy

- Up to 2,000 h

## Built-in sensors

- IR-interface for software communication



## Benefits

### Easy and fast monitoring

- MiniTRACE CSDF is easy to use (2 buttons interface) and provides a very fast response time (1sec.). It can also be set up with the optional DataVIEW software.

### All-in-one survey meter

- MiniTRACE CSDF allows multipurpose measurements for dose rate H\*(10) ( $\mu$ Sv/h), count rate (cps), activity (Bq), surface contamination (Bq/cm<sup>2</sup>) and food contamination (Bq/L). Radionuclide can also be selected.

## Designed for harsh environments

- MiniTRACE CSDF is compact and robust with its strong housing protected with a rubber boot. It is suitable for long time operations (battery lifetime: 2,000 h).

## Technologies

MiniTRACE CSDF is a unique multipurpose meter for contamination, survey, dose rate, X Rays, food and wipe test measurements. It is equipped with a 15.55 cm<sup>2</sup> Geiger-Mueller pancake detector and a 0.8 mm stainless steel grid. In addition to the verification of contamination, it is ideally suited to measuring the environmental dose rate equivalent (H\*(10)).

MiniTRACE CSDF displays values in cps, µSv/h, Bq, Bq/cm<sup>2</sup> and Bq/L. For the Bq and Bq/cm<sup>2</sup> modes, the user can select different nuclides with built in nuclide specific calibration library (Cs137, Am241, I131, Sr90, U238, C14, Cl36, Co60).

The Bq/cm<sup>2</sup> mode (for surface contamination) is calibrated according to ISO 7503-1. MiniTRACE CSDF offers a special mode for food measurement: it measures the activity level found in the liquid or smashed food, with a state-of-the-art food measuring kit.

## Accessories

- Protective rubber cover (included)
- Communication kit (incl. DataVIEW software and IR transceiver)
- Transparent plastic protection
  
- Belt pouch
- Suitcase (Pelicase)
- Wipe test kit
  
- Food measuring kit
- Emergency case
- Pressure-tight container for air transport

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**Radiation Detection > Handheld Monitors**

## **MiniTRACE S5 - Saphymo**

The MiniTRACE S5 is a contamination meter designed to improve the safety of workers in all different kinds of fields. It's very sensitive and responds within a second.

Because the device is very user-friendly, it's very easy to detect possible spots of contamination in the controlling areas. The 6-digit display shows the activity value with a fixed decimal point.

The MiniTRACE has four pre-programmed alarm thresholds, but users can also adjust these to their personal needs.



This contamination meter is not only easy to use, but it's also very fast. If the device detects something, it will respond within a second. The device is applicable to many fields, like nuclear power plants, research centers, hospitals, police, fire brigades and the army.

### **BENEFITS OF THE MINITRACE S5**

- High sensitivity
- Fast response time
- Compact and robust
- Ergonomic design
- Easy two-button operation
- 4 alarm thresholds
- Visual and audible alarm output
- Infrared interface
- X-ray sensitivity of >5 keV

If you want to read more about dose rate meters from Bertin, visit [their website!](#)

**If you are in doubt about what MiniTRACE suits you best...**

**Read this!**



Radiation Detection > Handheld Monitors

## MiniTRACE $\gamma$

Light & sturdy, the MiniTRACE  $\gamma$  survey meter measures personal exposure, along with X & Gamma radiations, to improve workers' safety in hazardous environments.

The MiniTRACE  $\gamma$  is available in 2 versions - S10S & S100S - each with its own energy & measurement range.

In accordance with the ALARA principle (As Low As Reasonably Achievable), the MiniTRACE  $\gamma$  allows for the assessment of personal exposure hazard faced by workers in controlled zones of nuclear power plants, reprocessing facilities, treatment centers & hospitals, etc. to help them better adapt their daily work according to the risk.

Ergonomic & easy to use, it also meets the operational needs of public service's units, such as firefighters, first responders, HAZardous MATerial teams, early warning & rapid response cells, radiation protection specialists (PCR), etc.

Fitted with fast response time ( $\approx 1$  second), the MiniTRACE  $\gamma$  survey meter measures instantaneously the ambient dose equivalent rate  $H^*(10)$  or the gamma radiation exposure levels, with a high level of autonomy (approximately 2,000 hours).

The MiniTRACE  $\gamma$  is also equipped with a built-in memory able to save up to 650 measured values of instant & accumulated radiation dose.

Both MiniTRACE  $\gamma$  S10S & S100S are available in radio version (S10R & S100R), allowing for survey meters to be integrated into a ShortLINK/SkyLINK communication network, with a maximum reach of 20 kilometers.





## SaphyRAD S

The SaphyRAD S is a multiprobe survey meter developed to cover the needs of the nuclear and security market. This rugged, sensitive, and functional survey meter includes a wide and bright LCD display monitors and measures dose and Gamma dose rates in harsh environments even by non-specialists. Equipped with a full range of external probes, this versatile survey meter can discriminate Alpha/Beta radiation, monitor surface contamination, with reliability and accuracy, it can also measure dose rate in hard-to-reach areas and be used to research radioactive sources. In addition, the SaphyRAD S has an integrated simulator that is perfectly suited for training purposes. By utilizing a simulation probe, the user can recreate an Alpha/Beta contamination, enabling training in authentic conditions without the need for radioactive sources.



### Benefits

- Robust: designed for use in harsh environments
- Large, high-resolution colour display
- Integrated simulation mode for training
- Designed for use with CBRN personal protective clothing
- Integrated GPS
- Specific algorithm for fast and reactive detection
- Large dose rate range: from 0.05  $\mu\text{Sv/h}$  to 10 Sv/h
- Complete range of external probes for source tracking and measuring multiple contamination, specially designed for use by non-radiation specialists.

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**Radiation Detection** > **Handheld Monitors**

## SaphyRAD C

The SaphyRAD C is a versatile multiprobe contamination meter used for monitoring Alpha and Beta contamination in harsh environments. It has been developed to meet all needs of contamination control for multiple markets such as the nuclear and NORM industries, medical structures & first responders, thanks to its integrated nuclide library.

It is equipped with a powerful algorithm to allow very fast and reliable detection of ionising radiation in a variety of civil applications. The SaphyRAD C has been designed ergonomically to be held with gloves on. Its large colour display makes the results perfectly easy to read. The SaphyRAD C possesses a wide range of contamination probe and it is compatible with all analogue probes on the market.



Ruggedized for harsh environment

The SaphyRAD C has a robust housing with 6 large buttons designed for use with gloves. This device is adapted to meet the needs of the Nuclear industry, but also of the NORM industry, first responders & medical structures.

### **Versatility**

SaphyRAD C is designed for the detection & measurement of Alpha and/or Beta radiation sources with the use of external connected measuring probes. It has a wide dose rate range from 0.05  $\mu\text{Gy/h}$  to 10Gy/h.

It is also compatible with external analog probes of other systems.

### **Ease of use**

SaphyRAD C is an ergonomic handheld device with a high image quality color screen. Some probes also include an embedded alarm & a distance control indicator.

### **Efficiency**

SaphyRAD C works with a specific algorithm which was developed for a very fast and reactive detection of radiation sources.

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**Radiation Detection > Environmental Monitoring**

## **AlphaE - Bertin Instruments**

AlphaE is an electronic handheld device for fast and time-resolved radon monitoring in buildings, outdoors and mines. Typically, 80 % of the final result is achieved after 2 hours (faster response for higher values). Due to its ultra-lightweight design and sophisticated features, AlphaE is highly suitable also for surveying the personal radon exposure and dose at workplaces.



The AlphaE's favourable price-performance ratio makes it also interesting for service companies engaged in radon assessment and mitigation as well as for users in private homes. Up to 6 months battery life allows long-term measurement without mains power. Permanent operations via mains supply are possible via USB port.

### **Advantages AlphaE**

- ultra-lightweight design
- sophisticated features
- wide measuring range for professional use
- up to 6 months autonomy
- suitable software included

Download the datasheet or contact our product specialist.



## SaphyRAD E Multiprobe - Bertin Instruments

SaphyRAD multiprobe alpha & beta contamination meter has been developed to meet all needs of contamination control for multiple markets such as the nuclear and NORM industries, medical structures & first responders, thanks to its integrated nuclide library. Its ergonomic interface and design have been especially conceived for use even by non-specialists.



SaphyRAD's wide range of contamination probes combined with its specific algorithm allow for a very fast and reactive detection. Depending on the probe, the operator can either assess small or large areas to detect alpha, beta/gamma or alpha & beta/gamma radioactive contamination. All data can be stored on an SD card for measurement recordings.

### SaphyRAD E advantages

- user friendly embedded alarm & distance control indicator
- wide range of compatible probes
- adaptative nuclide library
- versatile for contamination & measurement operations
- ruggedized for harsh environment

[SaphyRAD E](#)

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**Radiation Detection > Handheld Monitors**

## **SaphyRAD MS Dom-420 - Bertin Instruments**

SaphyRAD MS is the latest multiprobe survey meter designed for operation in harsh environments such as military fields and first responders.



Together with the probes, SaphyRAD MS allows to cover most of the needs of first responders. SaphyRAD MS associates a wide range dose rate meter and external smart probes for source and hot spot search and contamination measurement. SaphyRAD MS includes a simulation mode which allows to train the users with high reality without the use of radioactive sources. Special care has been taken in the design of man machine interface for quick use by non radiation specialists.

### **SaphyRAD MS features**

- designed for operation in harsh environments
- high resolution and large color LCD display
- built in simulation function for training
- designed for use with CBRN protective clothing
- built in GPS
- specific algorithm for very fast and reactive detection
- wide dose rate range 0.05  $\mu\text{Gy/h}$  to 10Gy/h
- comprehensive external smart probes for source search and multiple contamination measurement specially designed for use by non radiation specialists

[SaphyRAD MS](#)

[SaphyRAD MS probes](#)

Contact our PEO product specialist.

# PERSONAL ELECTRONIC DOSIMETERS



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Radiation Detection > Personal Electronic Dosimeters

## Saphydose gamma i

Saphydose Gamma i is an operational dosimeter measuring radiation in real time (Hp (10) X and  $\gamma$  dose).

This dosimeter is designed for people working in a controlled area (nuclear power plant, fuel reprocessing plant, research center, hospital, non-destructive testing service, etc.) or likely to be exposed (army, police, fire brigade, etc.).

It is compliant with the IEC 61526 standard for measurement of personal dose equivalents. Reliable and ergonomic, the Saphydose Gamma i is appreciated for its sturdy aluminum housing, its high resistance to electromagnetic fields and its long time battery life. It can be used individually or as part of our dosimetry management system.



# ENVIRONMENTAL MONITORING





Radiation Detection > Environmental Monitoring

## GammaTRACER Spider Autonomous Gamma Monitor for Emergencies - Saphymo

The GammaTRACER Spider Autonomous Gamma Monitor (Saphymo) has been designed to cover the needs of first responders in an emergency scenario. Based on the proven GammaTRACER design, the probe provides reliably the measurement of the gamma dose rate and wireless data transmission to the crisis center by means of [SkyLINK](#) radio or Iridium satellite modem.



### GammaTRACER Spider Autonomous Gamma Monitor for Emergencies features:

- built-in battery for up to 5 years operation
- innovative self-erecting design, very fast deployment
- ultra compact design
- emergency proof communication options
- SkyLINK radio modem (up to 100 km/60 mi)
- satellite modem (Iridium)
- 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

### GammaTRACER Spider demo



# AlphaGUARD-Radon Monitor - Bertin Instruments

## Overview:

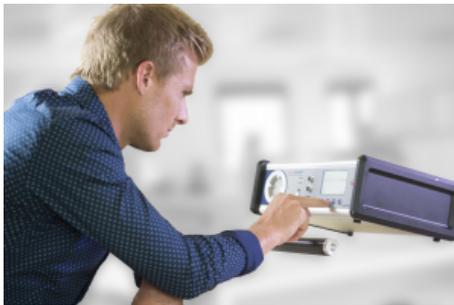
The complete product line provides all accessories for radon in air, water, soil, building materials, progeny, thoron and calibration equipment to perform air, water, soil, exhalation measurements. The collected data can be linked to the DataVIEW software, allowing data download and storage as well as professional data analysis and reporting. With AlphaGUARD, bring your Radon Lab everywhere.



AlphaGUARD incorporates a pulse-counting ionization chamber (alpha spectroscopy).

Based on optimal chamber geometry and intelligent signal evaluation, this radon monitor is suitable for continuous monitoring of radon concentrations between 2 – 2 000 000 Bq/m<sup>3</sup>.

The DSP (Digital Signal Processing) technology provides highly effective differentiation ability between “real” radon data and all kinds of artefacts.



## Features:

- 0.62 L pulsed ionization chamber
- Measuring range of 2 to 2,000,000 Bq/m<sup>3</sup>,
- Instrument calibrator error of 3%
- Storage capacity of up to 60,000 measurement points
- Storage of:
  - 400 days at 10 min measuring cycle
  - 2,500 days at 60 min measuring cycle
- Battery life of 10 days (40 days with external battery)
- 329 mm x 355 mm x 123 mm and weighs 6,2 kg (13,7 lbs)

## Your Radon Lab - Everywhere:

- AquaKIT
- Soil gas Probe
- AlphaPM
- AlphaPUMP / LabPUMP
- Emanation / Calibration Container
- Exhalation Box
- On line Radon in water monitoring
- Valve Selector

## Benefits:

- Quality at the highest level
- Long-term stable calibration factor (guaranteed 5 years)
- Calibration traceable to different national standards (PTB, NIST, NPL)
- Inbuilt quality assurance system for permanent validation of system operation and data
- Fast transient response

- DataVIEW PRO software

- Automatic background correction
- No sensitivity to high air humidity

### Reasons to choose ALPHAGUARD - RADON MONITOR:

✓ Reference instrument with high sensitivity

✓ Calibration stability guaranteed for 5 years

✓ High performance for versatile applications

✓ Maintenance-free operation

### Gallery:



### AlphaGUARD - Your Radon lab everywhere

<https://youtu.be/oJaaYf9-Pbl>



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Radiation Detection > Environmental Monitoring

## ShortLINK Short-Range Environmental Radiation Monitoring Network - Bertin/Saphymo

The ShortLINK Wireless Communication System is a short-range, fully autonomous and private wireless network. You can use this system to transmit online data from connected low-power sensors or instruments to a central station. Unlike public cellular communication system standards (like GSM), this system is not dependant on the existence of an area covering cellular infrastructure. ShortLINK is generally installed in combination with a radiological network, like [GammaTRACER](#) and [DataExpert supervision software](#).



If you want to know more about Bertin data transmission systems, take a look at [our partner's website](#)!

### SHORTLINK WIRELESS COMMUNICATION SYSTEM FEATURES AND BENEFITS

- Very low power consumption
- Operating distance up to 5 km (3 mi)
- Turnkey installation
- Long-term maintenance-free operation
- Can withstand temperatures from -40°C to 60°C (-40°F to 140°F)

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Radiation Detection > Environmental Monitoring

## GammaTRACER Autonomous Radiation Monitoring Probe - Saphymo

The GammaTracer Autonomous Radiation Monitoring Probe from Bertin is designed to continuously measure, record, and transmit the environmental gamma dose rate. The probes continuously measure the gamma radiation dose.

Worldwide, there are more than 4.000 GammaTRACERs in operation.

The probes also offer a new dimension in wireless data collection. This is possible because the probes are equipped with a radio module, so you can use them with [SkyLINK](#) and [ShortLINK](#) for wireless data collection. GammaTRACER can store up to 12.800 data sets, depending on the probe type and measurement cycle.

The probe is available in four types: Basic, Wide, High and XL2.

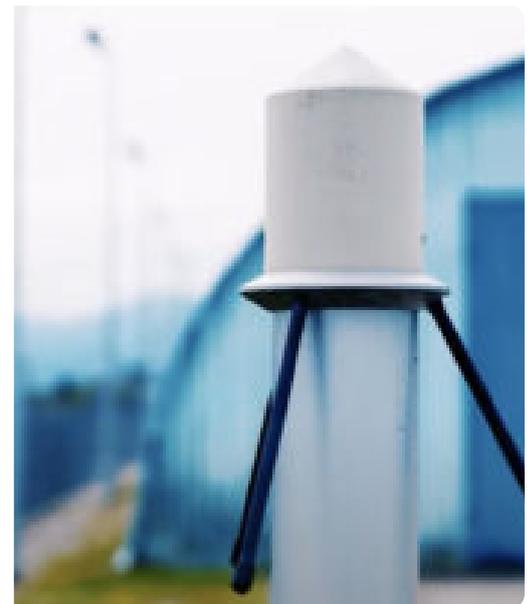


### UNLIMITED AUTONOMY

The GammaTRACER is an autonomous radiation monitoring probe. The monitor's batteries allow maintenance-free, non-stop operation for up to five years, and with an extended battery pack, it will even last up to ten years! This is possible because of the energy-saving chip technology.

But, if you choose the internal solar panel, the autonomy can be unlimited!

They can also resist extreme climatic and environmental conditions because the probes are independent of any physical connections.



### GAMMATRACER TYPES

GammaTRACER covers a broad range of radiation monitoring applications because there are multiple types available. The probes are deployable for multiple applications, for example nationwide monitoring, perimeter monitoring, and monitoring for nuclear facilities. The probes are not only suitable for routine, but also for emergency applications.

## BASIC

The GammaTRACER Basic has a dose rate measurement range of 20 nSv/h to 10 mSv/h and an energy range of 45keV to 3MeV.

## WIDE

The GammaTRACER Wide has a dose rate measurement range of 20 nSv/h to 10 Sv/h and just like the BASIC, also an energy range of 45 keV to 3 MeV.

## HIGH

The GammaTRACER High has a dose rate measurement range of 1 mSv/h to 10 Sv/h and an energy range of 80 keV to 4,4 MeV.

## XL2

The GammaTRACER XL2 has a dose rate measurement range of 10 nSv/h to 10 Sv/h and an energy range of 45 keV to 2 MeV. The XL2 type also has fast a response mode of 1 second.

## ADDITIONAL OPTIONS

Even though the four GammaTRACE options already have a lot of features, there are also options you can choose from. All types can operate in temperatures ranging from -20°C (-4°F) to 50°C (122°F), but you can also choose for the option of -40°C (-40°F) to 60°C (140°F). Furthermore, you can choose additional sensors (rain, wind and weather), power supply by solar panels or a seismic qualified version.



## BENEFITS & FEATURES

- Measures x-radiation and gamma radiation
- Measurement cycle, adjustable from 1 second to 120 minutes
- Battery lifetime up to ten years or even unlimited with solar panels
- Can store up to 12.800 data sets
- Type approval in several countries
- Maintenance-free
- Non-stop operation
- Easy to install

If you want to read more about GammaTRACER, take a look at [our partner's website!](#)

<https://youtu.be/59D0HZs64zw>



SCAN TO VIEW  
VIDEO

**If you have any questions...**

**Contact PEO!**



## BAB E Air Monitoring Beacon

The BAB-E fixed beacon is used for continuous monitoring of artificial Alpha and Beta aerosols, in Gamma environments as well as in the presence of natural Radon descendants. It has a double cover that allows it to withstand the most extreme climatic conditions for uninterrupted use outdoors (territorial surveillance, nuclear infrastructures, etc.). The data collected by the BAB-E can be accessed remotely and in real time on the DataEXPERT supervision software.

### Features

- Can be used in controlled areas with high gamma background
- Compensation of radon progenies
- Use of standard sources for efficiency controls
- Ruggedized, can be used on dismantling and purification sites
- Available as stationary or mobile version
- Can be connected to a central monitoring network and trigger a general alarm

### Technology

- The radioactive dust is deposited by air suction on a filter paper placed in the BAB beacons.
- The suction flow rate is about 5 m<sup>3</sup>/h (it depends on dustiness and type of filter paper).
- The flow rate is calculated from the depression measured between the filter and the pump. This allows to detect any tear or dust clogging.
- Placed one centimeter above the sample, the detection system is based on two 300 μm thick silicon diodes with a surface of 360 mm<sup>2</sup>.
- The analog signal from the two diodes is amplified by a preamplifier with an output range of about 30mV/MeV.
- An amplifier increases the signal amplitude to 0.7V/MeV, and the signal is then used to produce the energy spectrum via an amplitude analyzer that encodes information to 512 channels.



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Radiation Detection > Environmental Monitoring

## SkyLINK Wide-Range Environmental Radiation Monitoring Network - Bertin/ Saphymo

The SkyLINK Wireless Communication System is a wide-range, fully autonomous and private wireless network. You can use this system to transmit online data from connected low-power sensors or instruments to a central station. Unlike public cellular communication system standards (like GSM), this system is not dependant on the existence of an area covering cellular infrastructure. The system generally includes a radiological network like GammaTRACER probes and the DataExpert supervision software.



For more information about Bertin Data Transmission systems, take a look at [our partner's website!](#)

The system structure allows its use in every situations, even in the most accidental ones (private wireless communication network and easy-to-install autonomous probes).

### SKYLINK WIRELESS COMMUNICATION SYSTEM FEATURES

- Very low power consumption
- Operating distance up to 100 km (60 mi)
- Private network, so no regular transmission fees
- Easy interface to external instruments or host processors
- Turnkey system installation
- Long-term maintenance-free operation

<https://youtu.be/59D0HZs64zw>



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**Radiation Detection > Environmental Monitoring**

## **AlphaE - Bertin Instruments**

AlphaE is an electronic handheld device for fast and time-resolved radon monitoring in buildings, outdoors and mines. Typically, 80 % of the final result is achieved after 2 hours (faster response for higher values). Due to its ultra-lightweight design and sophisticated features, AlphaE is highly suitable also for surveying the personal radon exposure and dose at workplaces.



The AlphaE's favourable price-performance ratio makes it also interesting for service companies engaged in radon assessment and mitigation as well as for users in private homes. Up to 6 months battery life allows long-term measurement without mains power. Permanent operations via mains supply are possible via USB port.

### **Advantages AlphaE**

- ultra-lightweight design
- sophisticated features
- wide measuring range for professional use
- up to 6 months autonomy
- suitable software included

Download the datasheet or contact our product specialist.



# SpectroTRACER Environmental Radiation Monitor - Saphymo

SpectroTRACER is a continuous environmental radiation monitor for spectroscopy to measure very low gamma contamination (water: SpectroTRACER AQUA).



The SpectroTRACER produces a spectroscopic analysis of the detected nuclides identification. The SpectroTRACER is used for the measurement of radioactivity when a standard gamma dose rate monitor is not efficient enough and when it is necessary to discover the nature of the gamma radiation.

## **SpectroTRACER Environmental Monitor features:**

- working temperature: -20 ° C to + 50 ° C. / option: -30 ° C to + 60 ° C
- max. 100 meters under water (SpectroTRACER -AQUA)
- IP68 certified
- relative humidity: 100%
- integrated sensors for temperature and humidity



## Skydose Dosimetry System - Bertin Instruments

Skydose is an operational dosimetry system, designed to measure & monitor, in real time, the ambient dose level received by response teams in high exposure areas.



The operational dosimetry system Skydose consists in eight Saphydose  $\gamma$  RT teledosimeters, one Personal Digital Assistant (PDA), one Easydose configuration software, one Saphyr portable reader, as well as one to three RT-ZB05 routers.

The Skydose system is part of an ongoing approach based on the reduction of both collective and individual doses, in compliance with the ALARA principle (As Low As Reasonably Achievable). By optimizing the exposition to ionizing radiation, it aims at improving the operators' conditions of intervention, who will thus be able to focus safely on the objectives of their mission. The Skydose system only takes a **few minutes to install**. Thanks to the PDA, it ensures the in-field monitoring of an eight-person team equipped with Saphydose  $\gamma$  RT teledosimeters using mesh networking.

**Flexible & robust**, the Skydose system can reliably cover an entire infrastructure (a nuclear power plant, for example), thanks to one or more RT-ZB05 dedicated routers.

**Fast & easy to deploy**, the Skydose system can be used by operators, first-responders & non-specialists, inside & outside the risk areas.

### Features

- easy and quick setting even by non-specialized staff
- automatic network synchronization
- suitable for indoor and outdoor use including reactor buildings
- suitable for emergency situations (sturdy - high dose and dose rate range)
- real-time hotspots detection to reduce the mission dose received by workers
- compliant with use in nuclear facilities (CEI 61526)
- low maintenance costs
- real-time, remote & simultaneous monitoring of the Saphydose  $\gamma$  RT dosimeters, for the team to react immediately in case of emergency
- the Skydose system can be installed and configured in a few minutes, and be safely stored in a ruggedized pelicase - several systems can operate simultaneously, without interference

## Specifications

- detector: 2 energy-compensated silicon diodes
- energy range: **from 50 keV. to 7 MeV!**
- dose rate measurement range: 0.5  $\mu\text{Sv.}$  to 9,999.99 mSv
- dose measurement range: 1  $\mu\text{Sv.}$  to 9,999.99 mSv
- alarms: sound & visual
- battery lifetime in operation: 4,000 hours
- radio range: 300 m



## Coriolis RECON - Bertin Instruments

The Coriolis RECON is a portable, light and ruggedized bio-air sampler for biological warfare agents detection, dedicated to CBRN teams or first responders, with quick deployment in case of an event with biological attack suspicion. The Coriolis RECON have been designed to collect large concentrations of aerosols in the breathable range of 0.5 to 10  $\mu\text{m}$  with an air flow rate at 600L/min, thus being more representative of the environment than traditional bio-aerosol samplers.

Thanks to its ability to collect bio-aerosol particles into liquid format, this system can be used with rapid identification techniques for biological agents (immunoassay, PCR, etc.) to provide an early warning of aerosolized biological warfare agents.



### Introduction video

### Advantages Coriolis RECON

- the most efficient concentration of biological warfare agent
- high air flow rate
- compatible with any downstream experiments for rapid identification
- bio surveillance with long time monitoring - up to 6 hours
- quick deployment in a military / first responder context

Download the datasheet or contact our product specialist.

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## Coriolis Micro - Bertin Instruments

Coriolis  $\mu$  is an innovative biological air sampler for bio-contamination assessment, mainly dedicated to air quality control and air quality monitoring in environmental and pollution research, pharmaceutical, food and veterinary industries, biomedical and health environment...

Based on a cyclonic technology, combined to a high air flow rate, Coriolis  $\mu$  offers the most efficient particles collection in 10 minutes. The biological particles such as toxins, virus, bacteria, molds, pollens, spores are collected and concentrated in a liquid ready to be analyzed with microbiological and cellular and molecular biology methods.



### Introduction video

### Advantages Coriolis Micro

- the most efficient concentration of biological particles
- high air flow rate & long time monitoring option - up to 6 hours
- compatible with any downstream experiments - divisible samples for several analysis in parallel
- flexible liquid sample output
- no saturation of the collection media for charged environment

Download the datasheet or contact our product specialist.

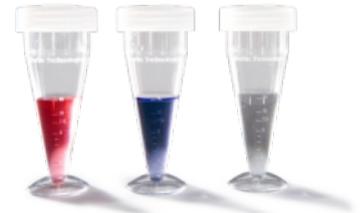
# WASTE & RECYCLING MANAGEMENT





## Coriolis Consumables - Bertin Instruments

Coriolis consumables are part of the cyclonic technology: the separation of the airborne particles from the air flow is due to the air flow rate, the air intake geometry, the design of the cones and the collection liquid (surfactant in low concentration).



### Introduction video

#### Consumables

- cones & caps : The cones and caps are designed specifically for the use with the Coriolis  $\mu$
- collection liquid doses
- LTM consumables : collection liquid in bottle and tubing kit
- air intake : depending of your research you can adapt the air intake
- standard air intake : air take compatible with all Coriolis for classical samplin
- LTM air intake : dedicated to long time monitoring collection (only compatible with the LTM platform)
- 25 mm connection LTM : designed to propose a hose attachment (testing chamber, confined space ...)

#### Advantages Coriolis consumables

- dedicated cones to perform high efficiency collection
- adaptor to connect to any 25 mm diameter connector
- easy set up with calibrated 15 ml collection liquid dose
- liquid collection compatible with any downstream experiment
- cones available sterile and non-sterile

Please contact our product specialist.