BODY MONITORS

peo DETECTION

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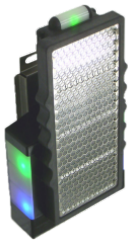
Partner Ludlum Measurements Inc.

Ludlum Measurements, Inc. is a trusted global provider of radiation detection and monitoring instruments, offering rugged, accurate solutions for personnel safety, environmental protection, and security screening. Since 1962, their equipment has been used worldwide in applications ranging from nuclear power and emergency response to border protection and critical infrastructure monitoring.

Product offering

Model 215 Alpha Frisker Station



Model 177HFM Low Cost Hand & Foot Monitor

Model HFC-8 Hand, Foot, and Clothing Monitor

Model 4906P Alpha-Beta-Gamma Hand & Foot Monitor

Model 4906AB Alpha-Beta Hand & Foot Monitor

Model 4906A Alpha Hand & Foot Monitor

Model 4901P Beta-Gamma Hand & Foot Monitor

Model 3276HFM Low Cost Hand & Foot Monitor

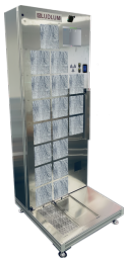
Model 3277HFM Compact Alpha-Beta Hand & Foot Monitor

Model 53 Gamma Portal Monitor

Model 52-1, 52-5 & 52-6 Series Portable Portal Monitors

Model 52 Portable Portal Monitor

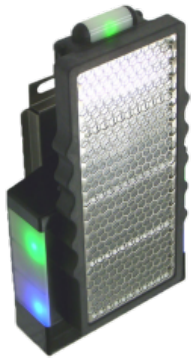
Model HBP-22 Body Contamination Monitor



Model HBP-29 Body Contamination Monitor

Model 375P-1000 Outdoor Radiation Contamination Monitor – Ludlum

Model 215 Alpha Frisker Station



Ludlum Model 215 is a unique dual-purpose alpha contamination detection system that can be used as both a stationary detector and a mobile frisker. When alongside a glovebox, the operator can use this innovative device as a stationary hand frisker, then simply remove it from the charging stand for use as any other mobile alpha frisker.

This convenient, integrated detector design requires no batteries, P-10 counting gas, or cables, giving the user complete freedom in performing frisking duties. The large area, air proportional detector has built-in electronics, display, and capacitors that allow it to be operated for at least 10 minutes, typically 15 minutes, before needing to be recharged. Fully discharged, the detector is ready for stationary operation within five minutes of being placed into the charger stand, and ready for mobile frisking within 30 minutes. The charging stand interfaces to a PC to facilitate setting parameters and running high voltage plateaus via an optional application program.

Features

- Dual Purpose Alpha Frisker & Hand Monitor Station
- Detector Operates Independent of Its Stand
- Simple to Use
- No Batteries, Cables, or Gas Required

Model 177HFM Low Cost Hand & Foot Monitor

This setup offers a low-cost alpha/beta/gamma contamination monitoring system for checking hands and feet.

To build this system, order the following items:

- **Model 177** Benchtop Meter (PN: 48-1632)
- **Model 44-25** Hand Detector (PN: 47-1508)
- **Model 44-26** Foot Detector (PN: 47-1509)
- Connection Tee (PN: 13-7788)
- 1.5 m (5 ft.) Cable (PN: 40-1004-5)

Features

- Detects alpha, beta, and gamma
- Low cost
- Easy to set up

Model HFC-8 Hand, Foot, and Clothing Monitor

Robust and Portable Hand-Foot-Clothing Monitor with Touch-Screen Display

The HFC-8 is a compact hand, foot, and clothing monitor to measure personnel leaving controlled areas. With a removable probe and spring-loaded hand detectors, the HFC-8 has been developed for portability between different areas. Featuring a detector arrangement to measure the hands and feet in one measurement step, the HFC-8 integrates the latest technology and design, while meeting official standards.

Various detector options are available, including:

- Beta detectors (plastic scintillator)
- Beta-Gamma detectors (plastic scintillator)
- Alpha/Beta detectors (plastic scintillator or gas-flow proportional)

The standard unit consists of:

- 8 detectors with semiconductor readout, one of them as removable hand probe
- Robust stainless-steel housing
- Ergonomic detector positioning
- Integrated 12 in. touch-screen display
- Fully automated measurement process with audiovisual operator guidance
- Latest industry controller technology
- Power provided by UPS for several measurements during mains power outage

Features

- Intuitive User-Friendly Software
- Spring-Loaded Hand Detectors for Reliable Contact with the Hand Surfaces
- Compact Footprint with Easy Access to the Service Cabinet
- Modern Touch-Screen Display
- Stainless Steel Housing for Easy Cleaning and Durability
- Access to Historical Measurement Data via Integrated Database
- Export of Measurement/Parameter Data in XML Format via USB

Radiation Detection › Body Monitors

Model 4906P Alpha-Beta-Gamma Hand & Foot Monitor

The Model 4906P is a low cost, industrial duty, alpha-beta-gamma contamination monitoring system that uses six pancake cluster detectors for checking personnel. A large color LCD presents users with the system status and points out any potential contamination in an easy-to-use manner. Alarms are annunciated locally and can be augmented with optional relays for signaling remote devices or a light stack mounted on top.

All maintenance can be performed from the front of the instrument. Detector access for quick replacement or repair is facilitated by hinged top covers. The unit is equipped with rear-mounted wheels to facilitate transporting the instrument from one location to the next.

Features

- GM Pancake Detectors
- Large LCD User Interface
- Automatic Routines for Detector Setup & Alarm Calculations
- Customizable Voice Prompts
- Single-Hand Operational Mode
- Front Access to All Components for Repair/Calibration

Model 4906AB Alpha-Beta Hand & Foot Monitor

The Model 4906AB is a low cost, industrial duty, alpha and beta contamination monitoring system for checking personnel hands and feet. A large color LCD presents users with the system status and points out any potential contamination in an easy-to-use manner.

The system employs six gas flow proportional type detectors with counting activated by optical switches. Alarms are annunciated locally and can be augmented with optional relays for signaling remote devices or a light stack mounted on top. The built-in Ethernet interface supports connection to a network for gathering all count cycles and remote monitoring of the status.

All maintenance can be performed from the front of the instrument. Detector access for quick replacement or repair is facilitated by hinged top covers. The unit is equipped with rear-mounted wheels to facilitate transporting the instrument from one location to another.

Features

- Alpha-Beta Gas Flow Proportional Probes
- Large LCD User Interface
- Automatic Routines for Detector Setup and Alarm Calculations
- Voice Prompts
- Built-in Ethernet Interface
- Single-Hand Operational Mode
- Front Access to All Components for Repair/Calibration

Model 4906A Alpha Hand & Foot Monitor

The Model 4906A is an industrial-duty, low-cost, alpha-only contamination monitoring system for the hands and shoes of personnel. System status and areas of possible contamination are presented in a large color LCD making the process simple and user-friendly.

Counting is initiated by optical switches that activate six air-proportional-type detectors. Alarms annunciate locally and can be augmented with optional relays that will signal remote devices or a high-visibility alert light mounted on top of the unit. The built-in Ethernet interface supports connection to a network for gathering all count cycles along with permitting remote monitoring of the status of the instrument.

All maintenance can be performed from the front of the instrument. Hinged top covers make accessing detectors for repair or replacement convenient. Rear-mounted wheels allow the instrument to be transported from one location to another with relative ease.

Features

- Alpha Air Proportional Probes
- Large LCD User Interface
- Automatic Routines for Detector Setup and Alarm Calculations
- Voice Prompts
- Built-in Ethernet Interface
- Single-Hand Operational Mode
- Front Access to All Components for Repair/Calibration

Model 4901P Beta-Gamma Hand & Foot Monitor

The Model 4901P Beta-Gamma Hand & Foot Monitor is intended for use as a medium-level beta and gamma contamination monitor. Four count channels are in the standard configuration for monitoring the palm of each hand and the sole of each foot. The Model 4901P employs a total of twenty-two pancake Geiger-Mueller (GM) type detectors, five in each hand detector (palm side only) and six in each foot detector. LED indicators show status and alarm location. The Model 4901P allows parameter updating by viewing the built-in, 16-character LCD display. Detector counts, background, alarm set points, and all parameters may be viewed on the LCD display. Switches at each hand detector initiate an interrogation (both switches must activate). Audible alarm and status change indications are standard.

Features

- Affordable
- Simple to Use
- Automatic Background Subtract
- Password-Protected Parameters
- Alarm Audio Volume Adjustment
- Non-Volatile Memory Requires No Battery Backup

Model 3276HFM Low Cost Hand & Foot Monitor

The Model 3276 is a versatile instrument that can be used for multiple radiation detection or measurement purposes. In this configuration, the Model 3276 is connected to both a Model 44-25 hand monitor detector and Model 44-26 foot monitor detector to monitor personnel for alpha, beta, and gamma contamination. An optional Model 44-9 detector can also be included for frisking.

The Model 3276 features a large, backlit, easy-to-read LCD screen and audible alarms and is controlled using a simple four-button interface. The unit body is made of lightweight, rugged aluminum. It is not intended for outdoor use and should be protected from splashing water.

The Model 3276 can measure radiation in count rate, exposure rate, exposure rate/dose, activity rate, integrated exposure/dose, time-averaged rates, and scaler counts. In this configuration, three modes of operation are available – RATE, MAX, and COUNT – which can be selected by pressing the MODE button. Measurements can be collected in two sets of units (primary and secondary) for RATE and MAX modes in cps, cpm, Bq, dpm, R/hr, or Sv/h units. The user can switch between the two sets of units by pressing the UNITS button.

Instrument setup can be done either through the front-panel controls or via the Lumic Calibration Kit (PN: 4498-1018). Power is supplied by either four alkaline “AA” batteries or a 9 Vdc wall mount transformer. The Model 3276HFM is shipped ready to use with batteries, a wall transformer, and a calibration certificate.

Model 3277HFM Compact Alpha-Beta Hand & Foot Monitor

The Model 3277HFM Hand & Foot Monitor is intended for checking low-level alpha and beta contamination on personnel. The gasless system incorporates two scintillation detectors, one for the hand and one for the foot. An optional frisker scintillation detector can be included as well.

Measurement is a two-step process, measuring the hand and foot on one side at a time. To begin an automatic count, both the hand and foot must be placed on the respective detectors, activating the infrared (IR) sensor on each detector. User-friendly instructions and the status of each detector is clearly displayed on the large, color touch-screen. The instrument uses a minimum count time mode to automatically determine the count time based on background, alarm setpoints, and other factors. When the count is completed, either a “Clean” or “Alarm” message will be displayed, depending on the configured alarm set-points.

In “Idle” mode, the screen will display the current detector count rates (default) or the accumulated background rate.

If the system includes a frisker, the status of all three detectors are displayed in “Idle” mode, but only the active detector(s) (either both the hand and foot, or the frisker) are displayed when a count is performed. The frisk state is activated when the frisker is removed from the cradle, and the automatic hand and foot count is activated as described above. A lockout prevents the instrument from toggling the display between the frisker and the hand and foot detectors, so that whichever detector is activated first remains active until the sensor is no longer triggered.

The system can communicate through a standard Ethernet connection for remote monitoring. It is powered by a 100 – 240 Vac wall transformer. An optional battery backup is available to ensure constant power. Instrument setup can be done through the touch-screen display or via Ludlum’s Lumic Calibration Software.

Features

- 7-inch Color LCD Display Shows All Readings Simultaneously in a Large, Simple Layout
- Audible & Visual Alert Signals
- Easy to Operate Two-Step System

- Gasless – Uses Dual-Phosphor Scintillation Detectors
- Optional Rechargeable Battery Backup
- Automatic Start of Count
- Minimum Count Time
- Automatic Background Subtraction During Measurements

Model 53 Gamma Portal Monitor

The Model 53 Gamma Personnel Portal detects gamma radiation in or on personnel passing through the portal from either direction. This highly sensitive portal uses eight large plastic scintillation detectors. Shielding is accomplished with either the standard 2.5 cm (1 in.) or optional 5.1 cm (2 in.) thickness of lead. A user-friendly interface guides personnel through the portal monitor via automated voice prompts, and is accompanied with 25.7 cm (10.1 in.) color LCD articulating screens presenting the instrument readiness and status at the ingress and egress. Alarms are manifested both audibly and visually, and can be silenced and acknowledged via control buttons located on either side of the instrument.

Three statistical counting modes are available to maximize throughput, maximize sensitivity, or fix the count time. Several modifiable parameters adjust the alarm set point, including the false alarm probability, detection probability, background sigma coefficient (K_B), and the composite sigma coefficient (K_{S+B}). Fast alarm and clean options provide the ability to quickly determine if personnel are contaminated or clean before the entire count cycle has ended.

There are also four user modes to choose from that include a walk-through mode, a pause mode, a pause-and-turn mode, and a front-and-back mode. Voice prompts may be customized in any language for each of these modes. These prompts can, for example, dictate in-house procedures to follow. Instrument technicians have password-protected access to set up the instrument, and to the advanced automated routines for calibrating and verifying operation.

Easily accessible USB ports facilitate connecting a keyboard to implement changes, input user ID, or upload revised software. The system also includes an Ethernet link. Ludlum’s optional Universal Network Software can be used to log instrument status, user activity, and other information from one or more instruments connected to the network. This software broadcasts emails whenever radiological alarms or instrument failures occur, and has the ability to capture images from network cameras that can be stored along with the user ID (if implemented). See the “Options” tab for more information and other available options.

Model 52-1, 52-5 & 52-6 Series Portable Portal Monitors

The Model 52-1, 52-5, and 52-6 Series Portable Portal Monitors are used for beta-gamma contamination monitoring on personnel and meet the FEMA standard for Emergency Response Portal Monitoring (FEMA-REP-21). They are designed to be disassembled for ease of transportation and storage, and can be set up in five minutes or less without any tools.

Each instrument's non-volatile parameters are preset at the factory to detect a 1.0 µCi ^{137}Cs source in a 10 µR/hr background field. Microprocessor-based electronics provide ease of setup and reliability. Status LEDs indicate count-cycle status and audible signals accompany the LEDs for additional indication. Detector counts, background, and all parameters may be viewed on the instrument display. All setup is accomplished by way of pushbuttons located below the display.

These portal monitors can be operated in a walk-through mode with a quick scan occurring while a person is positioned within the portal. In this mode, checking is performed every 200 milliseconds while the portal is occupied, and 600 milliseconds before and 600 milliseconds after the portal is occupied. The portal monitor can also monitor in a stop-and-count mode, allowing for a more sensitive scan. In stop-and-count mode, the fixed count time may be set from 1 to 20 seconds.

These instruments have automatic background update and dynamic alarm setting capabilities. On startup, the instrument will take a background count and calculate alarm levels for each detector. Self-diagnostic routines check the background count and warn if the background becomes either too high or too low.

Alarms are calculated with a user-adjustable sigma parameter and the current background count. During setup, the user can also specify individual alarms only, sum alarm only, or both individual and sum alarm. The sum alarm groups upper detectors and lower detectors.

Included with each instrument are a wheeled transport case and a clear polypropylene sleeve to protect against wet weather conditions.

These instruments are able to operate from 85 to 250 Vac, 50/60 Hz without a voltage selector switch. They may also be powered from the supplied vehicle cigarette lighter adapter, or three or six “D” cell batteries.

Water-Resistant Versions

Ludlum also offers some water-resistant versions: Models 52-1W (PN 48-4300), 52-1-1W (PN 48-3516) and 52-6-1W (PN 48-4312). Note that these water-resistant versions can only be used for gamma contamination monitoring.

Vehicle Monitoring

The Model 52-1, 52-5, and 52-6 Series can also be used as vehicle monitors using the optional vehicle conversion kit (PN 4215-374 for standard models, PN 4215-1099 for water-resistant models). The kit includes two stands to support the side detectors and a 6.1 m (20 ft.) cable. See Options tab for more information.

Model 52 Portable Portal Monitor

The Model 52 Portal Monitor is used for Beta-Gamma personnel contamination monitoring and meets the FEMA standard for Emergency Response Portal Monitoring (FEMA-REP-21). It is designed to be assembled in five minutes or less without tools, and can be quickly disassembled for ease of transportation and storage. All parameters are stored in non-volatile memory, which requires no battery backup. These parameters allow easy operation with minimal setup by minimally trained personnel. The parameters are preset at the factory to detect a 1 µCi ^{137}Cs beta window source in a 10 µR/hr background field, in accordance with the FEMA standard. The Model 52 can be powered by 120 Vac, six “D” cell batteries, or 220 Vac-powered units, which are available as a special order.

The instrument has a “person-counter” integrated into the electronics that increments by one every time a count is completed. It is a four-digit number normally displayed on the LCD display, next to the “READY” message. It also has an RS-232 port that can be used to print out parameter setpoints, background counts, and counts above background.

The portal frame incorporates an array of 18 Geiger-Mueller (GM) detectors positioned around the frame and base. Fourteen GM pancake detectors are located in the frame for monitoring the head and body. Four cylindrical GM detectors are utilized in the base for monitoring the feet.The electronics are microprocessor-based for ease of setup and reliability. Individual LEDs (Light Emitting Diodes) mounted in the frame and also on the electronics front panel indicate the specific alarm location. LEDs in the front panel indicate count cycle status. Audible signals accompany the LEDs for additional indication. Detector counts, background, and all parameters may be viewed on the LCD display. All setup is accomplished via pushbuttons on the electronics assembly.

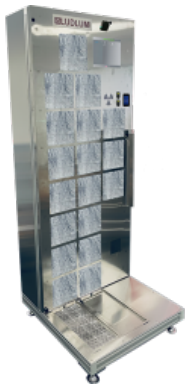
The Model 52 incorporates a summing alarm in addition to the individual channel alarms. This increases the system sensitivity to widespread contamination. If two or more channels have a noticeable increase in counts but do not exceed their alarm threshold, the sum of their counts could exceed the summing alarm.

The Model 52 also has background update and subtract capabilities. The instrument will take a background count and

subtract it from the current count. This function helps compensate for fluctuations in background. Background subtract can be turned on or off, the background count time is adjustable, and the background interval time is adjustable. The operator can force the instrument to stop and take a background count at a different interval if desired.

The Model 52 is supplied with a polypropylene weather sleeve to protect against wet weather conditions. Units are also supplied with a rugged, wheeled, and padded transport/storage case for rapid deployment.

Model HBP-22 Body Contamination Monitor



Robust, Ergonomically Designed Body Contamination Pre-Monitor

The Model HBP-22 is a body contamination monitor that utilizes beta plastic detectors to measure personnel as a pre-monitor. Robust, with a modern design that integrates the latest available industrial technology, the system is optimized for users of all sizes.

The key features include:

- 22 beta plastic detectors with semiconductor readout
- Whole body measurement in 2 easy steps
- Automated measurement process with audio-visual user guidance
- Integrated 12 in. touch-screen display
- Intuitive user-friendly software
- Hand-detector on the side
- Latest industry-controller technology
- Energy filter settings to optimize discrimination of background radiation
- Power provided by internal UPS for several measurements during power loss
- Intuitive User-Friendly Software
- Large Service Space in a Footprint of 900 x 840 mm (35.4 x 33.1 in.) (W x D) with Easy Access to the Service Cabinet
- Modern 12 in. Touch-Screen Display
- Stainless Steel Housing for Easy Cleaning and Durability
- Access to Ludlum’s Test Tool Software for Detector Analysis
- Export of Measurement/Parameter Data in XML Format via USB
- Access to Historical Measurement Data via Integrated Database
- Network Capability for Remote Monitoring

Model HBP-29 Body Contamination Monitor

The Model HBP-29 is a whole-body contamination monitor designed to measure personnel leaving controlled areas.

Features:

- Intuitive User-Friendly Software
- Large Service Space in a Footprint of 900 x 840 mm (35.4 x 33.1 in.) (W x D) with Easy Access to the Service Cabinet
- Modern Touch-Screen Display
- Access to Ludlum’s Test Tool Software for Detector Analysis
- Export of Measurement/Parameter Data in XML Format via USB
- Access to Historical Measurement Data via Integrated Database
- Remote Access via Web Browser Interface

Standard features include:

- 29 beta plastic detectors with semiconductor readout
- Stainless steel housing for easy cleaning and durability
- Ergonomic detector positioning
- Hand-detector on the side
- Integrated 17 in. touch-screen display
- Automated measurement process with audio-visual guidance
- Latest industry-controller technology
- Energy filter settings to optimize discrimination of background radiation
- Power provided by UPS for several measurements during power loss
- Designed to meet industry and regulatory standards

Model 375P-1000 Outdoor Radiation Contamination Monitor – Ludlum

The Model 375P-1000 Outdoor Radiation Contamination Monitor (Ludlum) is a Digital Model 375 controller coupled to 2 shielded 7866 cm^2 plastic scintillator detectors. The detectors are covered in weathertight enclosures applicable for the outside environment. The Model 375P-1000 Outdoor Radiation Contamination Monitor is perfect for examine outgoing trash and/or medical waste for possible low-level radioisotope contamination.

Model 375P-1000 Outdoor Radiation Contamination Monitor features:

- indicates status, sum alarm, sigma alarm, low battery, det fail and overrange
- 4-digit LED display with 2 cm (0.8 in.) digits
- range: 0.0 to 9999 kcps
- battery backup
- programmable alarms
- network cable
- data output: 9-pin connector providing RS-232 output, signal ground connection, FAIL and ALARM signals and direct connection to battery and ground
- relay output: mains (120 or 240 Vac) output on alarm

Read more about the Model 375P-1000 Outdoor Radiation Contamination Monitor on the Ludlum website

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Partner Helgeson Scientific Services (HSS)

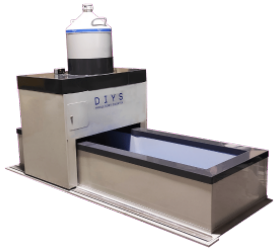
Helgeson Scientific Services (HSS) designs and manufactures advanced radiation monitoring systems focused on personnel safety, facility protection, and waste control. Their portfolio includes whole-body monitors, portal detection systems, and waste management solutions—each developed to support the safe handling of radiological materials in critical environments.

Product offering

HS-BEXA – Alpha Beta hand feet monitor

HS-BEX – Beta gamma hand feet monitor

DIYS – Bed type whole body counter for internal dosimetry



HS-ABOMO – Alpha beta gamma portal for personnel monitoring

HS-BOMO – Beta gamma portal for personnel monitoring

HS-RAM – Gamma portal for personnel monitoring

QUICKY – Whole body counter for internal dosimetry

Radiation Detection › Body Monitors

HS-BEXA – Alpha Beta hand feet monitor

The HS-BEX monitors are multitasking equipment designed for the detection and measurement of radiation ALPHA and BETA on the hands and feet of potentially exposed personnel through a fully automatic operation.

The system can be configured to have 3, 4, 6 or 7 detectors depending on the application and budget. An equipment that complies with the highest quality standards, designed and assembled in Spain.

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Radiation Detection › Body Monitors

HS-BEX – Beta gamma hand feet monitor

The HS-BEX monitors are multitasking equipment designed for the detection and measurement of radiation BETA and GAMMA on the hands and feet of potentially exposed personnel through a fully automatic operation.

The system can be configured to have 3, 4, 6 or 7 detectors depending on the application and budget. An equipment that complies with the highest quality standards, designed and assembled in Spain.

DIYS – Bed type whole body counter for internal dosimetry

HS-ABOMO – Alpha beta gamma portal for personnel monitoring

Multitasking two-step device

The HS-ABOMO unit is a multitasking two-step device designed for the detection and measurement of radioactive contamination, ALPHA, BETA and GAMMA, on potentially exposed personnel.

It has been specifically designed for controlled areas. It includes up to 31 detectors, which work autonomously and independently, allowing to perform simultaneous measurements with different alarm levels.

The user can identify exactly in a different channel the beta cps and gamma cps since the detectors are different for each type of radiation. Its operation is fully automated. The equipment has sensors that detect when a person enters the portal, interrupting the background acquisition and initiating automatically a thorough examination of the subject.

Radiation Detection › Body Monitors

HS-BOMO – Beta gamma portal for personnel monitoring

Multitasking two-step device

The HS-BOMO unit is a multitasking two-step device designed for the detection and measurement of radioactive contamination, BETA and GAMMA, on potentially exposed personnel.

It has been specifically designed for controlled areas. It includes up to 31 detectors, which work autonomously and independently, allowing to perform simultaneous measurements with different alarm levels.

The user can identify exactly in a different channel the beta cps and gamma cps since the detectors are different for each type of radiation. Its operation is fully automated. The equipment has sensors that detect when a person enters the portal, interrupting the background acquisition and initiating automatically a thorough examination of the subject.

HS-RAM – Gamma portal for personnel monitoring

Completely autonomous equipment

The HS-RAM monitors are completely autonomous equipment designed for the detection and measurement of gamma radiation on exposed workers.

They are designed to perform high speed measurements, allowing fast counting of a high volume of nuclear power plant workers. With different versions that customize the number of detectors, size, barriers, etc. the HS-RAM is without doubts the most flexible gamma portal for fast screening of personnel.

QUICKY – Whole body counter for internal dosimetry

Helgeson “Quicky” In-Vivo Counter is designed to complement any health physics program which includes routine whole body counting.

The “Quicky” is used to rapidly screen personnel or it can be used with a fixed counting time to obtain more precise results. The printed results provide the documentation for subject identification, counting time and date. Results are reported in Becquerel or Nano curies. The “Quicky” can reduce your regular counting requirements and costs significantly.

User-friendly software

Software for the “Quicky” is “user-friendly” with a menu format which provides a variety of standard and optional operating programs. System performance software includes a Quality Assurance program which checks the electronics of system, reporting any errors to the operator. An Energy Calibration program allows the gains of the individual detector-amplifier systems to be adjusted to uniformity and conformity to the design parameters.

- Data Acquisition, continuous spectral display.
- Data Analysis with graphs of original data and residuals.
- Calibrations: Energy vs. Channel and Efficiency, FWHM vs Channel.
- Parameter Modification for complete control: acquisition, analysis & miscellaneous parameters.
- File Maintenance.
- Dose calculating software based on ICRP recommendations and approved by the Spanish Nuclear Council.