



MIRION
TECHNOLOGIES

Argos™ Evo

Whole Body Contamination Monitor

The Argos™ Evo next-generation whole-body contamination monitor delivers fast, dependable screening to uphold the highest standards of safety and operational efficiency. Built upon the proven reliability of TwoStep™-Exit II and Argos™ contamination monitors, it integrates state-of-the-art LIGHTLink® detector technology and enhanced user software - making it a robust solution for modern facilities where safety, speed, and ease of use are paramount.

Powered by advanced LIGHTLink detector technology, Argos Evo ensures gas-free operation and fast, reliable detection of external contamination. Its compact and versatile design is well suited for nuclear facilities, radiopharma production sites, research laboratories, and universities - especially where space is at a premium. Argos Evo is part of Mirion's trusted Argos product range, backed by industry expertise and comprehensive support.

Argos Evo

POWERED BY LIGHTLink®



FEATURES

- ✓ **Reliable 24/7 Operation:** Built for continuous use in busy environments with dependable performance and minimal downtime
- ✓ **Full Body Coverage:** 21 detectors monitor body, head, arms, legs, hands, and feet for thorough personnel monitoring
- ✓ **Advanced Detection:** Available with β LIGHTLink, α/β , or β/γ Thin Plastic Scintillation (TPS) detectors and optional γ detectors
- ✓ **Comprehensive Software Functionalities:**
 - Based on well-proven Monitor Program software platform with comprehensive parameterization possibilities
 - Ergonomic touch-screen software with WebRemote® and Dashboard for remote monitoring
 - Advanced measurement algorithms
- ✓ **Compact & Versatile:** Space-saving footprint 890 mm x 891 mm x 2277 mm
- ✓ **Modern Connectivity & Compliance:**
 - Windows 11 IoT system, with LAN and USB connectivity
 - Exceeds the requirements of IEC 61098:2023
 - Fully compliant with ISO 11929:2019

ARGOS EVO WHOLE BODY CONTAMINATION MONITOR



DETECTOR TECHNOLOGY

The Argos Evo features 21 detectors for comprehensive contamination control of body, head, legs, arm, hands, feet and toes. The contoured detector arrangement is optimized for full body coverage per IEC 61098:2023 and fastest count-times. For example, two individual foot detectors allow summing measurements for each foot from front and back measurement, which mitigates that foot detectors are the limiting channel for the overall measurement time.

Three detector technologies are available to suit different monitoring needs:

- **Argos Evo with Beta LIGHTLink detectors**, equipped with state-of-the-art LL-B-579-S gas-free LIGHTLink detectors for measurement of beta contamination.
- **Argos Evo with Alpha/Beta Thin Plastic Scintillation detectors**, equipped with TPS-AB-579 thin plastic scintillation detectors, with gas-free alpha and beta detection capability (with discrimination).
- **Argos Evo with Beta/Gamma Plastic Scintillation detectors**, equipped with TPS-BG-579 plastic scintillation detectors, featuring a unique gas-free beta and gamma detection capability (with discrimination).

LL-B-579-S LIGHTLink Detectors

LL-B-579-S detectors are gas-free detectors with advanced light collection based on Mirion LIGHTLink technology. They are specifically designed for the best possible beta response and minimal sensitivity to gamma background radiation.

Mirion LIGHTLink technology represents a revolutionary advancement in radiation detection, enhancing a wide array of products from handheld devices to contamination monitors. Detectors equipped with LIGHTLink technology incorporate modern plastic scintillators, robust Silicon Photomultipliers and the latest in readout electronics.

This next-generation technology improves ergonomics and reduces susceptibility to damage, while also extending operational lifespan through lower power requirements and a design that eliminates high-voltage components. With superior light collection efficiency and a design that avoids light decay, LIGHTLink technology ensures hyper-accurate detection and devices that are always ready for use — redefining industry standards in operational productivity and reliability.

TPS-AB-579 Thin Plastic Scintillation Detectors

TPS-AB-579 thin plastic scintillation detectors are gas-free detectors with **alpha and beta measurement capability**, and separate alpha and beta measurement channels for each detector.

The detectors do not require any counting gas and feature an extremely uniform detector response.

TPS-BG-579 Plastic Scintillation Detectors

TPS-BG-579 plastic scintillation detectors are unique gas-free detectors with **beta and gamma measurement capability**, and separate beta and gamma measurement channels for each detector. Additionally, the beta channels work in anticoincidence mode with the gamma channels, which significantly reduces the sensitivity of the beta channel to elevated background. This allows for excellent measurement performance for beta radiation, also in elevated gamma backgrounds.

All detector versions require minimum maintenance and repairs. The detector windows can be easily replaced in the field.

MODULARITY

All detector types share the same form factor. Many internal components are interchangeable with other Mirion contamination monitors - including Sirius™ hand and foot monitors, Cronos® tool and object monitors, and GEM™-5 gamma exit monitors. This compatibility simplifies spare parts management and helps reduce maintenance costs for facilities operating multiple types of contamination monitors.

ARGOS EVO WHOLE BODY CONTAMINATION MONITOR

ELECTRONICS

The LIGHTLink detector technology eliminates the need for high-voltage components, using the latest readout electronics with all processing electronics mounted directly on each detector.

Digital signal processing and alarm management are handled by an integrated computer running Windows 11 IoT, with SSD data storage for speed and durability. Data can be easily retrieved via USB or LAN, supporting efficient record-keeping and remote access.

USER INTERFACE

Argos Evo features an intuitive LCD touch-screen display and clear LED indicators to show when the monitor is ready to use. During screening, users receive visual and audible instructions - including countdowns and messages which are available in multiple languages, ensuring straightforward operation for all personnel.

Occupant positioning is automatically verified and adjusted via photoelectric sensors, an integrated camera, and clear voice and visual prompts, helping to guarantee correct user positioning every time. If contamination is detected, both visible and audible alarms are activated.

The color touch-screen display clearly shows the type (alpha, beta, gamma), quantity, and location of any contamination. All usage data, measurement results, calibration settings, and fault messages are automatically recorded with date and time stamps, supporting detailed traceability and reporting. Up to four contact closure relays are available for remote signaling of the monitor's status (e.g. "In Operation", "Contaminated", "Clean", "Fault", etc. or a combination).

REMOTE STATUS MONITORING

The intuitive Dashboard enables **real-time status monitoring of multiple contamination monitors** across the facility via LAN. A straightforward overview shows whether contamination monitors are in service, have detected contamination, or are undergoing maintenance - all from a tablet or PC web browser, with no proprietary software installation required.

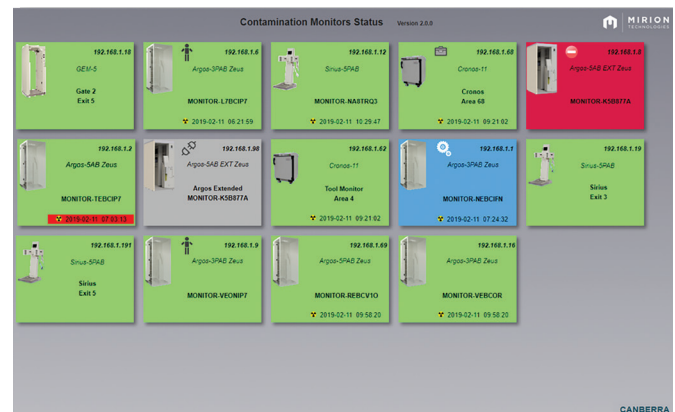
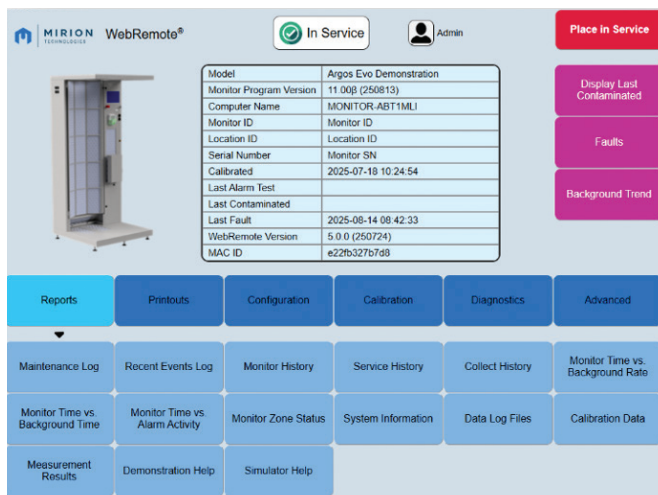
SETTING PARAMETERS

Parameter settings, testing, calibration and maintenance can be performed locally via the intuitive touch-screen interface or remotely using the included WebRemote® software over LAN. For users familiar with Argos, Sirius, Cronos and GEM-5 contamination monitors, the traditional Monitor Program user interface is also available.

The user software allows comprehensive parameterization and adjustment of settings, including:

- **Sensitivity of detection** for each detector and detection zone
- **Customizable alarm levels for alpha, beta, and/or gamma activity for each detector/detection zone** with a wide choice of measurement units: Bq, kBq, Bq/cm², kBq/cm², dpm, dpm/cm², µCi, µCi/cm², nCi, nCi/cm², pCi, pCi/cm²
 - Control over false alarm probability and alarm confidence
 - Selection of fixed or variable count times, automatically optimized based on alarm set points, local background and required measurement accuracy.

With industry-leading flexibility, Argos Evo can be tailored to meet the specific operational requirements of any facility.

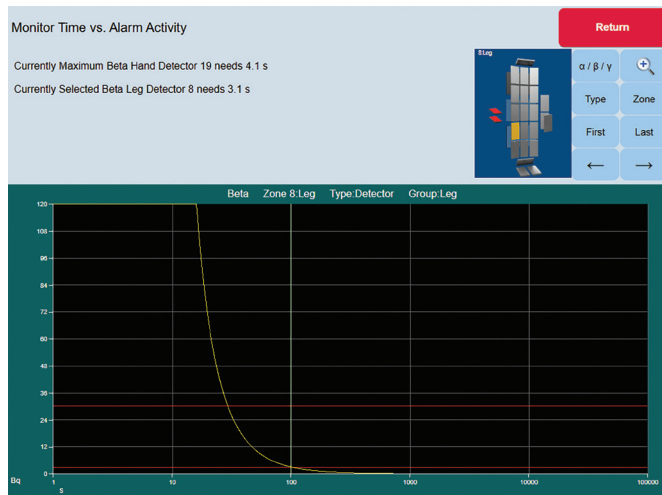


ARGOS EVO WHOLE BODY CONTAMINATION MONITOR

MAINTENANCE

Argos Evo simplifies diagnostics and maintenance by comprehensive, automatic and continuous self-diagnostics combined with a range of built-in reports and test screens, allowing precise monitoring and adjustment of parameterization for each individual detector.

Real-time rate meters display counts measured by each detector, making troubleshooting straightforward. Calibration and alarm testing of all detectors can be completed in under 30 minutes. The process is highly automated and designed for a single person to perform routine checks quickly and efficiently.



OPTIONS

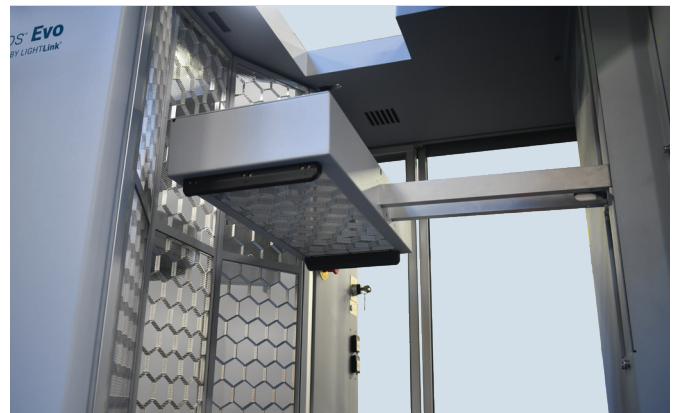
Door and Barrier

Safety and workflow efficiency can be enhanced with an automatically controlled entrance barrier and sliding exit door to control and restrict movement of users through the monitor.



Moveable Head Detector

Manual or automatically moveable head detector options are available for reliable contamination monitoring of the top of the head. These moveable head detector options cover a wide range of occupant heights from 153 cm to 205 cm (5'0" to 6'9"), while maintaining a compact external height of the Argos Evo.



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Gamma Detectors

Detection capabilities for external and internal gamma contamination can be added with optional large-volume gamma plastic scintillation detectors. Up to three detectors can be installed in thorax, leg, and central positions. To reduce the influence of gamma background, each detector includes a 10-mm thick lead shielding behind and on each side of each detector.

Additionally, one of the two default foot detectors can be replaced by a gamma plastic scintillation detector.

Small Item Monitor

An empty pocket policy can be realized with a side-mounted small item monitor added to the Argos Evo on the entrance side corner post. This option enables reliable screening of all personal items or small objects which fit into the chamber with internal dimensions of 18.0 cm x 15.0 cm x 38.0 cm (W x H x D). The small item monitor supports up to two detectors (on top and bottom).



Dosimetry Reader Integration for DMC 3000™ Dosimeter

Dose management can be streamlined with an integrated LDM 320W™ dosimeter reader for DMC 3000 dosimeters. Direct data exchange between Argos Evo and the DosiServ™ Dose Management Software improves workflow efficiency, enables advanced health physics analysis capabilities and reduces overall operational expenses.



Card/Barcode Readers

Integrated QR/barcode, proximity card or magnetic card reader options simplify personnel identification. Card data is stored with each measurement result, supporting efficient tracking. For optimal compatibility, Mirion recommends providing a sample card for verification prior to installation.

CeMoSys™ Software Compatibility

Argos Evo can be seamlessly integrated into the CeMoSys central monitoring system (version 2.0 or above). CeMoSys provides comprehensive supervisory functionalities for all connected Mirion contamination monitors for efficient facility oversight, equipment maintenance and reporting.

Calibration Fixtures

Different magnetic calibration fixtures for beta and gamma sources are available to facilitate calibration and alarm testing.

ARGOS EVO WHOLE BODY CONTAMINATION MONITOR

EFFICIENCY

Typical 2π efficiency, rounded to the nearest whole number, measured with a 10 cm x 10 cm planar source placed in the center of the detector and in contact with the detector mesh. Please contact Mirion for comparison with instruments specifying 4π efficiency.

ARGOS EVO WITH LL-B-579-S LIGHTLINK DETECTORS

Typical Efficiency	LL-B-579-S detectors, on contact, with 0.25 mm thick fine mesh (body, head, legs, arm)	LL-B-579-S detectors, on contact, with 0.5 mm thick fine mesh (hand)	LL-B-579-S detectors, on contact, with foot grill, 0.25 mm thick fine mesh (feet)
Sr-90/Y-90 (β)	42%	38%	29%
Cl-36 (β)	42%	38%	29%
Cs-137 (β)	39%	36%	28%
Co-60 (β)	31%	30%	23%
Tc-99 (β)	21%	19%	15%
C-14 (β)	8%	8%	5%
U-238 (α)*	38%	37%	22%
Am-241 (α)*	27%	27%	14%
Pu-239 (α)*	24%	23%	10%
U-235 (α)*	17%	17%	3%

* Indicates no Alpha/Beta discrimination.

ARGOS EVO WITH TPS-AB-579 DETECTORS

Typical Efficiency	TPS-AB-579 detectors, on contact, with 0.25 mm thick fine mesh (body, head, legs, arm)	TPS-AB-579 detectors, on contact, with 0.5 mm thick fine mesh (hand)	TPS-AB-579 detectors, on contact, with foot grill, 0.25 mm thick fine mesh (feet)
Sr-90/Y-90 (β)	48%	45%	33%
Cl-36 (β)	37%	34%	27%
Cs-137 (β)	37%	34%	26%
Co-60 (β)	30%	28%	20%
Tc-99 (β)	18%	16%	12%
C-14 (β)	6%	6%	4%
Am-241 (α)	27%	25%	13%
Pu-239 (α)	24%	22%	10%
U-235 (α)	21%	19%	5%

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ARGOS EVO WITH TPS-BG-579 DETECTORS

Typical Efficiencies	TPS-BG-579 detectors, on contact, with 0.25 mm thick fine mesh (body, head, legs, arm)	TPS-BG-579 detectors, on contact, with 0.5 mm thick fine mesh (hand)	TPS-BG-579 detectors, on contact, with foot grill, 0.25 mm thick fine mesh (feet)
Sr-90/Y-90 (β)	32%	28%	23%
Cl-36 (β)	28%	24%	22%
Cs-137 (β)	31%	27%	22%
Co-60 (β)	22%	20%	16%
Tc-99 (β)	19%	17%	13%
C-14 (β)	10%	8%	7%
Co-60 (γ)	47%	44%	42%
Cs-137 (γ)	15%	13%	13%
Am-241 (α)*	26%	24%	14%
Pu-239 (α)*	22%	20%	10%
U-235 (α)*	18%	14%	4%

* Indicates no Alpha/Beta discrimination.

SPECIFICATIONS

Mechanical

- Cabinet: Steel with rugged powder coat finish, base and foot pan cover in stainless steel. Designed for ease of decontamination and minimum maintenance.
- Dimensions without options (W x L x H): approx. 890 mm x 891 mm x 2277 mm (35.0 in x 35.1 in x 89.6 in).
- Dimensions with all options (W x L x H): approx. 897 mm x 1144 mm x 2366 (35.3 in x 45.0 in x 93.1 in).
- Weight: up to 470 kg (1036 lb) with all options.

Computer

- The computer of the Argos Evo operates on Windows 11. IoT operating system with LAN capability and USB ports for transferring data. Data may be retrieved either via USB or a LAN.
- High-quality digitized sound for prompts.
- 26.4 cm (10.4 in) touch screen LCD display.

Environmental

- Temperature Range:
 - Operating (exceeds IEC 61098): from 0 to +45 °C (+32 to +113 °F)
 - Storage: 0 to +50 °C (+32 to +122 °F)
- Relative Humidity:
 - Operating (per IEC 61098): $\leq$ 93% non-condensing at +35 °C (+95 °F) maximum
 - Storage: $\leq$ 95% non-condensing

Power Requirements

- 115/230 ($\pm$ 10%) VAC, 50/60 Hz, 2/1 A nominal mains
- Power consumption: <100 W

Certifications

- IEC 61098:2023 compliant
- ISO 11929:2021 compliant

Software

- Interactive visual and audible messages on correct positioning and usage; Intuitive touch screen user interface.
- Remote user interface (WebRemote) and status overview Dashboard.
- Measurement units: Bq, kBq, Bq/cm², kBq/cm², dpm, dpm/cm², μ Ci, μ Ci/cm², nCi, nCi/cm², pCi, pCi/cm².
- Advanced calibration and alarm test modules.
- Comprehensive reports: Measurement Results, Calibration Data, Maintenance log, Recent Events Log, Monitor History, Service History, System Information, Monitor Time vs. Background Rate, Monitor Time vs. Background Time, Monitor Time vs. Alarm Activity.
- Background processing: Advanced automatic background suppression, including management of self-shielding factors and suppression of spurious outliers.
- Self-contained databases with export functionalities.
- Comprehensive user rights management for users with difference security access levels and configurable software access rights per user group.
- State-of-the-art cyber security features and documentation.

ARGOS EVO WHOLE BODY CONTAMINATION MONITOR

ORDERING INFORMATION

- 7099151 Argos Evo with LL-B-579-S Beta LIGHTLink detectors.
- 7100118 Argos Evo with TPS-AB-579 Alpha/Beta Thin Plastic Scintillator detectors.
- 7100119 Argos Evo with TPS-BG-579 Beta/Gamma Plastic Scintillator Detectors

OPTIONS

- 7100124 Automatically moving entrance barrier
- 7099313 Automatically moving sliding exit door
- 7099311 Front curtain (back wall)
- 7100121 Automatically Moveable head detector. (Does not include the actual detector. One additional detector is required - see part number LL-B-579-S, 7093649, 7093647, or TPS-G-579)
- 7100120 Manually Moveable head detector. (Does not include the actual detector. One additional detector is required - see part number LL-B-579-S, 7093649, 7093647, or TPS-G-579)
- 7100127 Gamma Thorax Detector
- 7100128 Gamma Body Detectors, in leg and thorax position
- 7100129 Full Gamma Body Detectors, in leg, center and thorax position
- 7100130 Substitute Foot Detector in Position 1 by Gamma Foot Detector
- 7100131 Small Item Monitor, installed on the entrance side corner post (side-mounted). (Does not include the actual detector. One or two additional detectors are required - see part number LL-B-579-S, 7093649, 7093647, or TPS-G-579)
- Argos-BECS Top Beacon, Light & Sounder
- ARGOS-BECS-DUAL Dual Top Beacon, Light & Sounder
- 7098535 Integrated LDM 320W dosimeter reader
- 7097081 Barcode/QR Reader
- 7062147 Proximity Reader
- 7062157 Magnetic Card Reader
- 0009CVMS0002 CeMoSys client license
- 7074911 Calibration Fixture for single source, adjustable distance from 0 to 75 mm
- 7075461 Calibration Fixture for single source, fixed distance for hand detectors
- 7084916 Calibration Fixture for gamma source, adjustable distance from 50-150 mm (requires 7074911)
- 7100133 Partial disassembly for easier transportation to final installation location
- 7100134 Wood shipping crate

Many additional options, services and in-field upgrades to existing contamination monitors are available. Contact your Mirion sales and service affiliate for more information.



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