

The Scintillation HM11-SC provides the proven class leading reliability and ease of use associated with the gas flow HFM11-GF, but with the added benefit of not requiring counting gas.

HM11-SC

Scintillation Hand Monitor

- Low power fan-less operation
- Large touch-screen color LCD display - no keyboard required
- Easy to maintain detector assemblies, minimal basic tools required
- Optional frisker probe
- Hex-mesh grills for greater comfort and detector protection
- Automated detector set-up and alarm checking routines
- Simultaneous monitoring of both sides of hand in compliance with IEC 61098
- Vertically mounted sprung hand detectors to minimize cross contamination

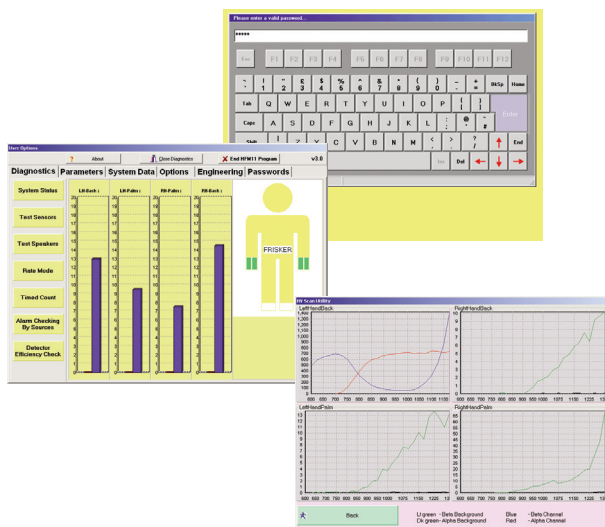


The HM11-SC hand monitor continues the development of this successful series of high performance hand and foot monitors. The hand detectors use an established technique for monitoring alpha and beta radiation simultaneously. Sprung detectors clamp both sides of the hand monitor and monitor them simultaneously. The vertically mounted detectors minimize the risk of detector contamination, and the top-mounted occupancy sensors avoid blockages.

An optional frisker probe may be selected from the wide range of existing probes for monitoring alpha, alpha/beta, beta and low energy X-ray contamination. Status, instructions and results are clearly shown on the large colour LCD touch-screen making the monitor especially easy to use. This monitor does not require any peripherals to set up or configure; it is completely self contained.

The HM11-SC is also designed with economy and reliability in mind. The low power consumption means there is no need for a cooling fan which might suck in dust and dirt, and there are no moving parts to fail - solid state Flash storage is used instead of a hard disk in the industrial PC controller, and photobeams are used in the positioning sensors instead of microswitches.

The modular 'X-channel' platform, with common controller boards and simple cabling, facilitates easy, low cost maintenance. It also provides detector intelligence and powerful controller functionality - such as the automated calibration and source checking with auto source decay correction routines. The X-channel architecture also allows easy retro-fitting of options such as the frisker probe. Sophisticated voltage scanning software is included which will clearly display the optimum voltage setting in order to discriminate between alpha and beta radiations.





HM11-SC Radiological Specifications

Detectors

Sensitive area:	260 cm ²
Window:	1.2 mg.cm ⁻² of aluminized Mylar
Scintillator:	Zinc sulphide and plastic

Radiological Performance

	Hands	
Alpha:	²⁴¹ Am	34 %
(% of surface emission rate)	Nat U	12 %

Beta:	¹⁴ C	8 %
(% of surface emission rate)	⁶⁰ Co	25 %
	¹³⁷ Cs	40 %
	³⁶ Cl	45 %

Gamma: 130 counts s⁻¹ per detector

(approx count rate in uniform field
of 660 keV photons at 1 μSv/h)

Uniformity:	²⁴¹ Am	±15 %
(variation across surface of detector)	⁹⁰ Sr/ ⁹⁰ Y	±15 %

Monitor

Alarm settings:	By the use of large area calibrated sources or by touch-screen entry of calculated efficiencies. All HMs are factory-tested with reference sources.	
Background update time:	100 s rolling average, with checking for changing background.	
Monitoring time:	Auto assessment of time required to meet the statistical requirements in the given background: 1 to 100 s.	
Control:	Audible and visible alarms occur if a hand is out of position.	
Indications:	Digital screen displays for alpha and beta levels for each hand. Magnitude and type of contamination is displayed.	
Audible indication:	Separate indications for 'Out Of Position', 'Clear' and 'Alarm' states, as on previous HM versions.	
Probability of false alarm:	0.1 to 10 sigma in 0.1 sigma steps.	
Probability of detection:	0 to 10 sigma in 0.1 sigma steps.	
Self test:	High voltage, detector response, detector contamination and background level are monitored.	
Digital I/O connections:	RS-232, Parallel printer port, Ethernet and USB.	
Environmental:	Operational temperature range: 5 °C to 45 °C (41 °F to 113 °F). Humidity: up to 95% at 35 °C (95 °F) (non-condensing).	
Power requirements:	90 to 264 VAC (auto-ranging power supply), 47 to 63 Hz, 85 VA max.	
Dimensions:	Height:	313 mm (12.3") 674 mm (26.5") with lid fully open
	Width:	876 mm (34.5")
	Depth:	440 mm (17.3")
Weight:	26 kg (58 lb) approx. unpacked.	

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