



VF NUCLEAR



NUCLEAR
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WASTE
MANAGEMENT



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NUCLEAR
MEDICINE



HF

HAND-FOOT CONTAMINATION MONITOR

MAIN ADVANTAGES

- Gas-less smart scintillation detectors with integral processors
- Two-axis hand detector conformity for highly efficient alpha measurement
- A variety of detectors available for optimum and simultaneous measurement of various radiation types; one or two-channel detectors available
- Dynamic processing algorithms to give shortest measurement times depending on background radiation
- User friendly graphic interface with touch screen display
- Voice messages to aid users, available in different languages
- Frisking probe and personal ID card reader options
- Volt-free relay I/O connections, e.g. for automatic door control, etc.
- Ethernet LAN connection as standard

PURPOSE

The HF series hand-foot contamination monitors are intended for the measurement of surface contamination by alpha, beta and gamma emitting radionuclides on hands, feet, and clothing.

For different workplaces, an appropriate one or two-channel model can be utilised.

HF monitors, types HF-50, HF-100, HF-150 have **suppressed sensitivity to gamma radiation**. They are suitable where the user needs to properly differentiate alpha and / or beta contamination.

Monitor type:

- **HF-50** measures only alpha contamination and is therefore designed especially for plants for the production and / or processing of nuclear fuel, uranium mining and / or processing.
- **HF-100** has the highest sensitivity to beta contamination and is suitable where alpha contamination does not occur.
- **HF-150** can distinguish between alpha and beta contamination, and the monitor has slightly lower beta sensitivity than HF-100.

Monitors types HF-100 and HF-150 are suitable for nuclear power plants, where the background from gamma radiation is increased and variable.

Monitor types HF-300 and HF-350 **have increased sensitivity to gamma radiation**. Monitor type:

- **HF-300** is intended for workplaces with virtually no beta contamination. It is suitable for nuclear medicine workplaces where Tc-99m radionuclide and possibly others are used.
- **HF-350** measures all types of contamination. It is suitable for training or experimental workplaces. Not suitable for nuclear power plants.

The monitors use four hand and two feet "smart" scintillation detectors, which do not need a gas supply, and contain their own calibration constants, allowing on-site swap out without a full re-calibration.

The monitor measures the background radiation when not being used, and removes this from the user measurements to allow operation in higher background areas. As soon as any sensor detects that a person is present, the background measurement is interrupted. Once the user has achieved the correct measurement position, the measuring process begins. Visual indicators and voice prompts help to achieve the correct position.

HAND-FOOT CONTAMINATION MONITOR

A dynamic algorithm is used to achieve the shortest measurement time and thereby the highest throughput. Maximum and minimum measurement times can also be pre-set for the unit.

The monitor guides the workers during the measurement sequence and informs them of the results by voice and visual display.

Measurement results are stored and can be exported to a USB flash drive or via Ethernet, for records and analysis.

MODELS

Name	1. channel	2. channel
HF-50	alpha	-
HF-100	alpha + beta	-
HF-150	alpha	beta
HF-300	alpha + beta + gamma	-
HF-350	alpha	beta + gamma

SPECIFICATIONS

Detector type	scintillation
Active hand area	4 × 286 cm ²
Active foot area	2 × 525 cm ²
Dimensions (W × H × D)	(822 x 1438 x 825) mm
Weight	60 kg
Power supply	230 or 110 VAC
Units	cps, Bq, Bq/cm ² , % of alarm level

OPTIONAL EQUIPMENT¹

SFP-100 Smart Frisking Probes

ID card reader

Power supply through a connector or a bushing.

¹ Optional equipment must be specified before ordering

TYPICAL RADIOMETRIC PARAMETERS

Model	Channel	Radionuclide	Hand detector		Foot detector	
			Efficiency [%]	MDA [Bq/cm ²]	Efficiency [%]	MDA [Bq/cm ²]
HF-50	α	²⁴¹ Am	46	0,01	46	0,01
HF-100	α	²⁴¹ Am	48	0,05	38	0,05
	β	²⁰⁴ Tl	46	0,04	43	0,03
HF-150	α	²⁴¹ Am	46	0,01	47	0,01
	β	²⁰⁴ Tl	28	0,06	35	0,04
HF-300	α	²⁴¹ Am	42	0,14	43	0,11
	β	²⁰⁴ Tl	40	0,11	44	0,08
	γ	¹³⁷ Cs	45	0,09	51	0,06
HF-350	α	²⁴¹ Am	45	0,02	45	0,01
	β	²⁰⁴ Tl	33	0,12	36	0,09
	γ	¹³⁷ Cs	36	0,10	42	0,07



HF

HAND-FOOT CONTAMINATION MONITOR

RELATED PRODUCTS

HF-4	Hand and Foot Contamination Monitor with 4 detectors
HM-4	Hand Contamination Monitor
SFP-100	Smart Frisking Probes
FCM-11	Frisking Contamination Monitor
ExitScan-2	Personnel Exit Monitor

OPTIONAL ACCESSORIES

3-0101-000003	Protective foil reel for foot detectors (suitable for beta-gamma monitors)
50-A-0011369	Protective foil frame for foot detectors (suitable for alpha and alpha/beta monitors)



HM-4



SFP-100



FCM-11



ExitScan-2



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Specification subject to change without prior written notice.

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