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FloorScan

# FLOOR CONTAMINATION MONITOR



## KEY FEATURES

- Gasless scintillation detectors
- Various types of detectors optimized to measure different types of radiation
- Two versions with one or two detectors
- User friendly, ease of use
- High detection efficiency, excellent uniformity
- Long operation due to new rechargeable battery
- Two pre-settable alarm levels

## DESCRIPTION

The FloorScan series floor contamination monitors are intended for the measurement of surface contamination by alpha, beta and gamma emitting radionuclides on floors.

The monitor can be used in nuclear power plants, radio-chemical plants, research institutes with reactors, PET centres, etc.

The device is available in two sizes: with one detector (detection area 525 cm<sup>2</sup>, FloorScan-525 series) or two detectors (detection area 1050 cm<sup>2</sup>, FloorScan-1050 series). For different workplaces, an appropriate one or two channel model can be utilised. See the table with the types of monitors.

The detection part is equipped with scintillation detector(s) with integrated photomultipliers and signal processing electronics, and a mechanism providing easy, fast, and precise height adjustment between the detector and the floor. It is propelled by the operator on four castor wheels. The detector's protective grille provides good protection against foil damage while still allowing good penetration of alpha and low energy beta particles.

The display unit has a backlit graphic display, a membrane keyboard and a lithium-ion battery to power the meter. The

display unit also includes an integrated GM tube for measuring the gamma dose equivalent rate.

The meter allows the measurement of the surface contamination in two modes:

- **Ratemeter** - continuous measurement of the average pulse frequency to aid searching for a contaminated surface.
- **Contamat** - integration measurement for deciding on contamination or cleanliness of a specific area in comparison with the set threshold.

The measurements are shown on a display unit as a digital readout and in bar graph form.

For each channel the background radiation level can be measured manually and stored in memory. This background is then automatically deducted from the measurement results indicated on the display.

The measurement of the gamma dose equivalent rate is an additional measurement independent of the measurement of surface contamination. It can warn the operator about higher ambient radiation.

If detected contamination is higher than a pre-set threshold, a warning alarm will sound. One or two alarm levels can be set. Exceeding the first or second levels is indicated by different tones.

The meter can also acoustically indicate pulses generated by the detector. Dual-channel monitors distinguish between pulse detection in the alpha channel and in the beta channel by a different sound.

The currently measured values in the "Ratemeter" mode and the results of the integration measurements in the "Contamat" mode can be stored in the measurement archive together with a time stamp. The archive can then be exported to a file.

Service software is used to export the archive and set the essential parameters by means of a PC/notebook connected by a service port.

## SPECIFICATIONS

Contamination detector type	plastic scintillator and/or ZnS(Ag)
Active area	525 cm <sup>2</sup> or 1050 cm <sup>2</sup>
Detector – floor distance	5 to 20 mm, step 1 mm
Dimensions (W x H x D)	
FloorScan-525	445 × 1070 × 898 mm
FloorScan-1050	785 × 1090×962 mm
Weight	
FloorScan-525	app. 14 kg
FloorScan-1050	app. 27 kg
Power supply	Li-Ion battery, adapter 5/12 VDC
Battery life	approx. 200 hours (without illumination, with 1 detector)
Temperature range	from -10 to +45 °C
Units	cps, cps/cm <sup>2</sup> , cpm, cpm/cm <sup>2</sup> , dpm, Bq, Bq/cm <sup>2</sup> , pps, pps/cm <sup>2</sup>

## MEASUREMENT OF THE DOSE EQUIVALENT RATE

Detector type	GM tube
Measurement range	100 nSv/h to 500 mSv/h
Units	as standard, Sv/h (Sv) optionally R/h (R)

## TYPES OF MONITORS

Name	Channel 1 activity	Channel 2 activity	Channel 3 dose rate
FloorScan-525AG	alpha	-	gamma
FloorScan-525BG FloorScan-1050BG	alpha + beta	-	gamma
FloorScan-525CG FloorScan-1050CG	alpha	beta	gamma
FloorScan-525DG FloorScan-1050DG	alpha + beta + gamma	-	gamma
FloorScan-525EG FloorScan-1050EG	alpha	beta + gamma	gamma

## RELATED PRODUCTS

HF	Hand-Foot Contamination Monitor with 6 detectors
HF-4	Hand-Foot Contamination Monitor with 4 detectors
HM-4	Hand Contamination Monitor
PAM-100	Portable Activity Meter
PAM-170	Portable Activity Meter
PAM-525	Portable Activity Meter
FCM-11	Frisking Contamination Monitor
SFP-100	Smart Frisking Probe

## RADIOMETRIC PARAMETERS (values for the distance of 5 mm)

Name	Channel	Radionuclide	Efficiency [%]	MDA [Bq/cm <sup>2</sup> ]
FloorScan-525AG	α	<sup>241</sup> Am	29	0.01
FloorScan-1050AG				
FloorScan-525BG	α	<sup>241</sup> Am	30	0.03
FloorScan-1050BG	β	<sup>36</sup> Cl	44	0.02
FloorScan-525CG	α	<sup>241</sup> Am	30	0.01
FloorScan-1050CG	β	<sup>36</sup> Cl	35	0.02
FloorScan-525DG	α	<sup>241</sup> Am	31	0.05
FloorScan-1050DG	β	<sup>36</sup> Cl	46	0.03
	γ	<sup>137</sup> Cs	42	0.03
FloorScan-525EG	α	<sup>241</sup> Am	32	0.01
FloorScan-1050EG	β	<sup>36</sup> Cl	39	0.03
	γ	<sup>137</sup> Cs	34	0.03