

## SAM-525

# SMALL ARTICLES MONITOR



## KEY FEATURES

- Simultaneous measurement of surface contamination by alpha/beta emitting radionuclides and ambient gamma dose equivalent rate
- User friendly, easy to use
- Gasless scintillation detector
- High detection efficiency and uniformity of response thanks to two photomultipliers
- Possibility of quick replacement of the detector's light-tight foil
- Two pre-settable alarm levels

## PURPOSE

The SAM-525 series monitors are fixed devices designed primarily for the measuring surface contamination of small objects by radionuclides emitting alpha/beta radiation.

Two models are available:

- **SAM-525BG** – single-channel monitor, with higher sensitivity to beta radiation
- **SAM-525CG** – two-channel monitor, can distinguish between alpha and beta radiation

The detection unit is equipped with a single plastic scintillator, two photomultiplier tubes, and the associated processing electronics. The display unit features a backlit graphic display, a membrane keyboard, and a lithium-ion battery to power the monitor. The display unit also includes an integrated GM tube for measuring the gamma dose equivalent rate.

The primary measurement mode used for measuring surface contamination of objects is **Contamat**. This integration-based measurement is designed to reliably determine whether a surface is clean or contaminated based on a predefined threshold.

The display unit also offers a **Ratemeter** mode, which enables the continuous measurement of the average pulse rate in order to locate contaminated surfaces when used with portable instruments. However, this provides limited benefits when used with fixed units.

The measured values can be displayed as count rate or, for specific selected radionuclides, in units of activity, surface activity, emission, and surface emission.

The display shows the selected quantity digitally and/or as a bar-graph.

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.

Measuring the gamma dose equivalent rate provides additional information, independent of surface contamination measurements. It alerts the operator to higher ambient radiation levels.

The monitor provides audible alerts when preset threshold levels are exceeded. Exceeding the first and second levels is indicated by distinct tones.

Acoustic signalling can also indicate pulses generated by the detector. Dual-channel monitors distinguish between pulse detection in the alpha and beta channels audibly.

Measurement results with a timestamp can be stored in an archive. This archive can then be exported to a file.

## SPECIFICATION

Detector type	plastic scintillator
Active area	525 cm <sup>2</sup>
Dimensions (W × H × D)	503 x 114 x 201 mm
Weight	< 2,4 kg with batteries
Power supply	Li-Ion batteries mains adapter
Battery life	min. 200 hours (without back illumination)
Temperature range	from -10 to +45 °C
Humidity range	max. 90 % non-condensing
Units	cps, cps/cm <sup>2</sup> Bq, Bq/cm <sup>2</sup>



*RadCount-3 in gamma dose rate measurement mode, the alarm level has been exceeded*

## TYPES OF MONITORS

Name	1. channel	2. channel	3. channel
<b>SAM-525BG</b>	alfa + beta	-	gamma
<b>SAM-525CG</b>	alfa	beta	gamma

## OPTIONAL ACCESSORIES

<b>51-A-0000259</b>	Service cable, USB A – Fischer 5 pin
---------------------	--------------------------------------

## RELATED PRODUCTS

<b>PAM-525</b>	Portable Activity Meter
<b>RadCount-3</b>	Multi-purpose Radiometer
<b>FCM-11</b>	Frisking Contamination Monitor

## MEASUREMENT OF THE DOSE EQUIVALENT RATE

Detector type	GM tube
Measurement range	100 nSv/h to 500 mSv/h
Energy range	50 keV to 3 MeV

## EXAMPLE OF RADIOMETRIC PARAMETERS

Model	Channel	Radionuclide	Efficiency [%]	Detection threshold [Bq/cm <sup>2</sup> ]
<b>SAM-525BG</b>	α	<sup>241</sup> Am	38	0,03
	β	<sup>36</sup> Cl	45	0,02
<b>SAM-525CG</b>	α	<sup>241</sup> Am	38	0,01
	β	<sup>36</sup> Cl	40	0,02