

Product Information LB 124 SCINT-D

Contamination Monitor with Dose Rate Detector



Display of LB 124 SCINT-D:
1st channel: Gamma Dose Rate
2nd channel: C-14 contamination

Applications

- Contamination monitor based on innovative scintillation technology
- Additional Gamma Dose Rate Probe
- Optional display of simultaneous α - and β - γ -contamination or display of α - or β - γ -contamination and gamma dose rate

Highlights:

- Lightweight, easy to handle and rugged instrument
- Wide temperature range

Contamination Detector

- Simultaneous and separate measurement of alpha and beta-gamma contamination with a ZnS(Ag)-scintillation detector
- High sensitivity and uniform response
- No counting gas required

Dose Rate Detector

- Detector positioned parallel to the front side of the instrument
- Energy response to H*(10) Ambient Dose Equivalent
- Halogen quenched Geiger-Müller tube
- Dynamic Range: 0.1 μ Sv/h to 20 mSv/h
- Energy Range: 50 keV to 1.3 MeV
- Alarm threshold for dose rate measurement
- Unit selection: μ Sv/h
- Dose accumulation is possible



Product Information

LB 124 SCINT-D Contamination Monitor with Dose Rate Detector

Equipment Concept

The contamination monitor LB 124 SCINT-D is a versatile and flexible instrument for practical radiation protection. It can be employed wherever contamination caused by radiation substances is encountered and has to be monitored: in nuclear medicine, research, nuclear power plants, in decommissioning of nuclear facilities and disposal of nuclear waste and also in environmental monitoring.

The instrument is used to measure radioactive alpha and beta-gamma contaminations on surfaces such as floors, walls, desks, objects, clothing or skin as well as gamma dose rate in ambient dose equivalent $H^*(10)$.



The Contamination Monitor LB 124 SCINT-D is a portable battery-powered instrument. It is comprised of a display unit with microprocessor electronics, a signal processing electronics and a new type of ZnS-scintillator with photomultiplier and an active measurement area of 170 cm². Its sophisticated reflector geometry ensures an extremely flat response over the entire sensitive area.

Through the integration of an additional Geiger-Müller tube it is possible to measure gamma dose rate simultaneous besides regular contamination measurement.



Due to its attractive and ergonomic design and its low weight the LB 124 SCINT-D is easy to handle. Even under adverse conditions, the measured results can be read easily on the large-highly-resolution display with background lighting.

A few directly accessible function keys suffice to operate the LB 124 SCINT-D. The instrument's surface can be easily decontaminated.

Technical Data

Instrument	
Display	Monochrome LCD 192 x 64 pixel Electro-luminescence illumination
Radiation detector	ZnS(Ag) Scintillator
Detection of light	PMT
Gamma radiation detector	Geiger-Müller tube
Measurement modes	α and β - γ measurement simultaneous and separate, additional gamma dose rate ratemeter, scaler-timer-mode, clearance measurement, half-life measurement, survey mode
Entrance window's dimensions	118 mm x 145 mm
Sensitive area	170 cm ²
Entrance window's material	2 x 3 μ m Plastic metallized (0.4 mg/cm ²)
External dimensions	240 x 140 x 110 (L x W x D in mm)
Weight	1400 g (with batteries)
Data memory	1000 measured values with date & time
Serial interface	RS 232
Max. operating time (without illumination)	> 50 h alkaline batteries 7.8 Ah > 25 h NiMH rechargeable Batteries 4.5 Ah

Ambient Conditions	
Temperature range	-20°C to +40°C (operation)
Rel. humidity	0% to 80% (no condensation)
External pressure	500 to 1300 hPa (operation)
Protection class	IP 53 (according to IEC 60529)

Sensitivity			
Contamination Detector			
Efficiency (related to ISO 7503-1):			
	Am-241	44 %	(α -channel)
	Pu-239	36 %	(α -channel)
	C-14	29 %	(β - γ -channel)
	Cl-36	69 %	(β - γ -channel)
	Co-60	58 %	(β - γ -channel)
	Cs-137	71 %	(β - γ -channel)
Background	approx.	0.1 cps	(α -channel)
	approx.	10 cps	(β - γ -channel)

Gamma Radiation Detector	
Dose rate range	0.1 μ Sv/h to 20 mSv/h
Energy range	50 keV to 1.3 MeV
Calibration factor	0.652 μ Sv/h per cps Cs-137
Intr. background	approx. 0.07 cps

Order information	Ident. No.
Contamination Monitor with DR-detector LB 124 SCINT-D	60026

This instrument is not intended to be used for diagnostic and/or therapeutic purposes for human beings and is not a medical device according to the definitions of the European Council Directive 93/42/EEC concerning medical devices.

Subject to change without further notice.