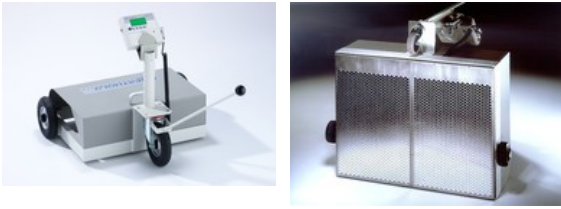


LB 165/166 Floor Monitor



The Floor Monitor LB 165/166 is a mobile measurement device with large-area proportional counter tubes for the detection of surface contamination caused by radioactive nuclides.

The Floor Monitor is comprised of

- a trolley with three wheels
- a detector: Xenon detector or P10 flow-through counter tube
- a battery or rechargeable battery operated evaluation unit for acquisition ([UMo LB 1230](#))

The Floor Monitor is available in two versions:

The **LB 165** monitor operates with the permanently filled **Xenon counter tube LB 6376** and measures **β- and γ-emitters**.

The **LB 166** monitor operates with a **flow-through counter tube LB 6378** and measures **α- and β-emitters**. The required continuous counting gas supply (P10 gas bottle with double pressure reducer) is accommodated on the trolley. The P10 gas bottle can easily be exchanged by the user.

The evaluation unit LB 1230 UMo automatically detects the connected detector (Xenon or flow-through counter tube) and sets the program automatically, so that a detector change does not necessitate any new parameter setting.

Features

- mobile monitor with adjustable height
- easy scanning of large floor areas
- proportional counter tubes with 2000 cm² active area
- less number of measuring points and so less time-consuming and less expensive
- ratemeter or counter-time mode
- alarm thresholds can be set for each measurement mode and each nuclide; exceeding of these thresholds is signaled visually and acoustically
- up to 250 single results can be stored and printed out

Details

The German Radiation Protection Ordinance requires that averaging is performed for measurements of surface contamination over an area of at least 100 cm². For this reasons, many measurement devices have sensitive areas between 100 cm² and 200 cm². On the other hand, contamination measurement devices with larger measurement areas are rather rare, apart from the foot detectors in Hand-Foot-Clothing Monitors.

Contamination measurements, therefore, had to be carried out using small portable instruments, even for measuring large wall or floor areas. Several thousands of measured values were needed for large-area measurements, which had to be collected and recorded, and this was rather time-consuming and expensive.

For this reason, Berthold Technologies has designed a Floor Monitor which is based on a completely new generation of extremely large-area proportional counter tubes with 2000 cm² active area. These detectors reduce the number of measuring points and thus the work load dramatically. Berthold Technologies is offering this new detector series with 2000 cm² active area for various applications, among them floor measurements. The detector is mobile and adjustable in its height, so that contaminated areas can easily be scanned.

The large area counter tubes with an active area of 2000 cm² can be set between 5 mm and 20 mm above the floor – depending on the floor conditions. We recommend using a typical height of 5 mm. The instrument specifications refer to this value.

Specifications

BERTHOLD TECHNOLOGIES
GmbH & Co. KG

Calmbacher Str. 22
75323 Bad Wildbad
Germany

+49 7081 177-0

+49 7081 177-100

info@Berthold.com

[Send message](#)



Request a callback

Alejandra Basil

AADEE S.A.



Distributor

+54 11 45 234 848

+54 11 45 232 291

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Technical Data LB 165/166

	LB 165	LB 166	
Counting gas	Xenon	Argon/Methane 90%/10	
Entrance window	12 µm titanium	3 µm Mylar aluminized	
Operating point	1900 Volts	1580 Volts	
Flush-time counting gas	N/A	> 3 h	
Preamplifier/Discriminator	1-channel	2-channel α-β-separation simultaneous	
Weight	17 kg	24.5 kg	
Measurement mode	β-channel	α-channel	β-channel
Background	135 cps	1 cps	100 cps
Background at increased γ-level of 0.3 µSv/h	300 cps	1 cps	250 cps
Detector type	Proportional counter tube		
Outside dimensions detector	700 mm x 600 mm		
Active area	570 mm x 380 mm		
Reference height detector	5 mm above floor		
Max. adjustable stroke	18 mm		
Minimum floor clearance	5 mm above floor		
Protective grid	Stainless steel, transmission degree 80 %, protection against foreign bodies with radius 4 mm		
Evaluation electronics	LB 1230		
Temperature range	-15°C to +50°C		
Operation	Foil keypad with On/off button and 4 function keys as softkeys		

Universal Monitor LB 1230 UMo

Display	High contrast dotmatrix-display 32 x 84 pixel, backlight
External dimensions	145 mm x 170 mm x 45 mm (H x L x W)
Weight	0.8 kg (with batteries)
Power supply	3 x IEC LR14 (Babycell) batteries or NiMH batteries 1.2V/4.5Ah
Max. operating time	> 150 h with LR14
Temperature range	-15 °C to +50 °C (operation) max. +60 °C (storage)
Relative humidity	30 % to 75 %
Protection class	IP 65 (according to IEC 60529)
PTB type approval	in combination with proportional counter tube LB 1236-H10

Related Products

LB 123 UMo - universal monitor for radiation protection applications



The Universal Monitor LB 123 is a versatile instrument for contamination, dose rate and activity measurements.

Applications

It is employed wherever large floor areas have to be checked for radioactive contamination, e.g. in nuclear medicine, in nuclear power engineering and in many fields of research.

