



LB 2046 / LB 2046-130

Portable Alpha-Beta Activity Measuring System

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Portable Alpha-Beta Activity Measuring System

Applications

- Radionuclide laboratories
- Nuclear facilities
- Environmental monitoring



Touch display of LB 2046 (measuring mode)

Functions

- Simultaneous and separate α - and β -measurement
- LB 2046: Planchets with up to 60 mm \varnothing and max. 8 mm height, optional: measurement of 60 mm \varnothing and 100 \varnothing filters
- LB 2046-130: measurement of filters with diameter of 100 mm and 130 mm
- Closed measuring chamber with scintillation detector
- Simple operation with touch sensitive display
- Nuclide library
- Service functions (background, calibration, system test)
- Permanent data memory
- Interface for printer and PC (serial and parallel)
- USB and Ethernet (optional)

Device concept

The portable Alpha-Beta Activity Measuring System LB 2046 / LB 2046-130 offers the simultaneous and separate measurement of α - and β -activities in different sample types for various applications, such as in wipe sample or on dusted filters, for the analysis of environmental samples, e.g. waste water after evaporation, and for the detection of activities in small quantities of food samples.

The Alpha-Beta Activity Measuring Systems have a scintillation detector with 60 mm and 130 mm diameter, respectively. The samples to be measured with LB 2046 are placed on a sliding drawer which allows a planchet diameter of up to 60 mm and a height of up to 8 mm. Also filters with diameters of 60 and 100 mm can be measured by means of the filter adapter for LB 2046 (optional). LB 2046-130 can be used for measurement

of filters with a diameter of 100 and 130 mm. The detection limit essentially depends on the detector sensitivity, on the background and on the measuring time. A correction factor can be set for the correction of the spillover from the alpha channel into the beta channel. The LB 2046 is a very compact and economic measurement solution for applications, where spectroscopy or extremely low level counting systems are not required.

The touch sensitive graphic display offers an intuitive user interface with simple and fast access to important measuring routines: With the background routine the α and β background subtraction is provided and stored for the correction of the measured value. The calibrati-

on routine permits the calibration of the detector for different nuclides. With the system test a performance check for the instrument can quickly be achieved.

Furthermore an extensive nuclide library is available, which allows storage of the required measurement parameters for each isotope and sample type. This includes a calibration factor, measurement unit, counting time, accuracy and alarm threshold providing automatic alarming (flashing result) for samples exceeding the respective values. The half-life correction provides the activity for a specific date requested. A printout can be generated after each measurement containing besides the results also the sample ID.



LB 2046-130



LB 2046



TECHNICAL DATA LB 2046 / LB 2046-130

Instrument

Detector	Scintillation detector (ZnS:Ag) with 60 mm Ø (LB 2046) with 130 mm Ø (LB 2046-130)
Entrance Window	Aluminised Hostaphan foil, 0.4 mg/cm ²
Weight	approx. 15 kg (LB 2046) approx. 25 kg (LB 2046-130)
External Dimensions	285 mm x 250 mm x 330 mm (H x W x L)
Display	Graphical display (320 x 240 pixel) with touchpanel, LED-Backlight with automatic switch-off
Interfaces	USB, serial, parallel, Ethernet (optional)
Power supply	90 to 264 VAC, 47 – 65 Hz

Ambient Conditions

Temperature Range	–5 to +40 °C
Rel. Humidity	0 to 90 % (no condensation)
Protection Class	IP54

Sensitivity

	LB 2046 (Ø 60 mm)	LB 2046-130 (Ø 130 mm)	
Efficiency	²⁴¹ Am (α-channel)	30 %	29 %
	³⁶ Cl (β-channel)	44 %	48 %
	¹⁴ C (β-channel)	11 %	9 %
Detection Limits (according to ISO 11929, 1h meas. time)	²⁴¹ Am	approx. 0.01 Bq	approx. 0.02 Bq
	³⁶ Cl	approx. 0.14 Bq	approx. 0.36 Bq
Background	α-channel	approx. 0.001 cps	approx. 0.005 cps
	β-channel	approx. 0.14 cps	approx. 1.13 cps
Spillover	α- in β-channel	<50 % (²⁴¹ Am)	
	β- in α-channel	<2.0 · 10 ⁻⁵ (⁹⁰ Sr)	
Measuring Range	α-channel	0 – 5 000 cps	
	β-channel	0 – 50 000 cps	

Order Information & Accessories

LB 2046 (detector with 60 mm Ø)	Ident. No. 52905-10
Adapter for 60 mm / 100 mm filters for LB 2046	Ident. No. 52969
LB 2046-130 (detector with 130 mm Ø)	Ident. No. 64840

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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.