

Product Information

LB 2046 Alpha-Beta Activity Measuring System



Applications

- Radionuclide laboratories
- Nuclear facilities
- Environmental monitoring

Functions:

- Simultaneous and separate Alpha- and Beta measurement
- Planchets with up to 60 mm Ø and max. 8 mm height
- Measurement of 60 and 100 mm Ø filters (optional)
- Closed measuring chamber with scintillation detector
- Simple operation with touch sensitive display
- Nuclide library
- Servicefunctions (background, calibration, systemtest)
- Permanent data memory
- Interface for printer and PC (serial and parallel)
- USB and Ethernet (optional)



Product Information

LB 2046 Alpha-Beta Activity Measuring System

Device concept

The portable Alpha-Beta Activity Measuring System LB 2046 offers the simultaneous and separate measurement of alpha- and beta-activities in different sample types for various applications, such as in nuclear facilities or nuclear reprocessing plants, like smear tests or as planchet sample residues. Environmental samples as well as filters from air sampling units can be measured in the same way.

The LB 2046 has a scintillation detector with 60 mm diameter. The samples to be measured 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 (optional). The detector provides simultaneous and separate determination of the alpha and beta activity with a detection limit (according to ISO 11929 in 1 h measuring time) of approx. 0.07 Bq for alphas (Am-241) respectively 0.14 Bq for betas (Cl-36).

The LB 2046 Activity Measuring System 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 alpha and beta background subtraction is provided and stored for the correction of the measured value. The calibration 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. A printout can be generated after each measurement containing besides the results also the sample ID. The Half-Life-Decay-Correction provides the activity for a specific date requested. A correction factor can be set for the correction of the spillover from the alpha channel into the beta channel.

Technical Data

Measuring Device

External Dimensions	270 mm x 245 mm x 330 mm (H x W x L)
Weight	approx. 15 kg
Display	Grafical display (320 x 240 pixel) with touchpanel, LED- Backlight with automatic switch-off
Interfaces	USB, serial, parallel, Ethernet (optional)
Power Supply	90 to 260 VAC 50/60 Hz
Temperature Range	+5°C to +40°C
Rel. Humidity	0 to 90% (non-condensing)
Protection Class	IP54

Order Information and Accessories

LB 2046 (93-264 VAC)	52905-10
Adapter for 60 / 100 mm filters	52969

Detector and Alpha-/Beta measuring chamber

Detector	Scintillation detector with 60 mm Ø	
Entrance window	Aluminised Hostaphan foil, 0.4 mg/cm ²	
Efficiency	Am-241	27 %
	Cl-36	40 %
	C-14	8 %
Spillover	α- in β- channel	< 10 % (Po-210)
	β- in α- channel	< 2,0 · 10 ⁻⁵
Measuring Range	α- channel	0 – 5 000 cps
	β- channel	0 – 50 000 cps
Background	α- channel	approx. 0.05 cps
	β- channel	approx. 0.5 cps
Detection Limits (according to ISO 11929, 1h meas. time)	Am-241	approx. 0.07 Bq
	Cl-36	approx. 0.14 Bq
	Meas. Chamber	Brass sample drawer nickel-plated for max. 60 mm planchets with up to 8 mm height or 60 / 100 mm filters (optional)

The 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 93/24/EEC concerning medical devices.

Subject to changes without prior notice.

