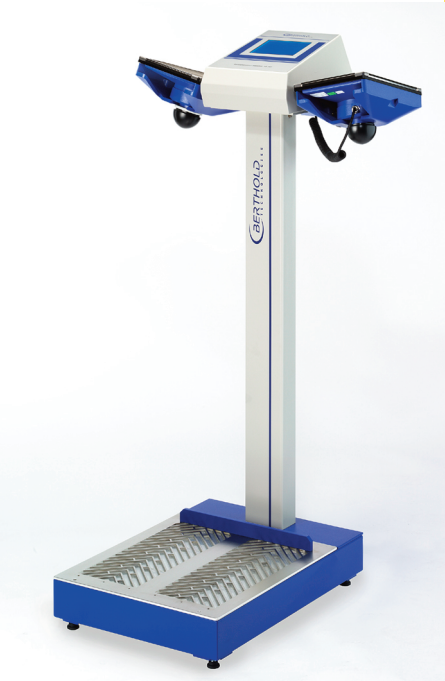
Product Information
LB 147

Alpha/Beta-Gamma
Hand Foot & Clothing Monitor



Applications

- Radionuclide laboratories
- Nuclear Installations
- Nuclear Chemical Plants
- Nuclear Medicine
- PET Facilities
- Environmental/Homeland security

Highlights:

- ZnS-Scintillation Detectors
- Space-saving Design
- High detector efficiencies, excellent uniform surface response, unchallenged Alpha/Beta separation
- Detachable Frisker probe
- Simple operation with graphic display and Touch screen
- USB, RS232 and RS485 interface
- Service functions (plateau, calibrating, systematic test)
- Permanent data memory for 1000 measurement cycles
- Extensive nuclide library
- Card reader, access control
- Auxiliary probes for body and thyroid

BERTHOLD TECHNOLOGIES

BERTHOLD TECHNOLOGIES GmbH & Co KG • Calmbacher Str.22 • 75323 Bad Wildbad, Germany
Telefon: +49 7081 177-0 • Fax:+49 7081 177-100 • nuclear@Berthold.com • www.Berthold.com

RADIATION PROTECTION

LB 147 / Date 19.03.07 / SW

Equipment concept

Compact versatile contamination monitor for radiation protection applications where Alpha and/or Beta/Gamma contamination measurements are required. Removable hand probe for clothing measurements. Automatic request for back of hand measurement. Optional dose rate probe for measurements of the belly area and a NaI probe for determination of activity in the thyroid. Personnel ID can be made with optional card reader.

The operation of the LB147 is done via a touch sensitive graphic display. The menu structure is very clearly arranged and simple to operate. The input of all parameters is password protected. The monitor can be switched easily between different lead nuclides before the measurement. The results can be represented in freely selectable units Bq/cm² or in cps.

Each detector has its own calibration factor for each nuclide in both the Alpha and Beta channels and a spill-over factor for each Alpha nuclide. The background radiation is continuously monitored for each detector and used to compensate the measurement with the long-term average background value. The monitor checks for background fluctuations before the start of each measurement cycle.

Automatic plateau measurement, calibration routines for all detectors and a rapid system test are available. All other in- and output functions and sensors can be checked very quickly with the simple to operate service menu.

A simple communication protocol permits the integration into a network. The serial interface permits the up- and download of the system parameters.

Two optional external light beacons indicate the operating normal (healthy) condition and/or a contamination threshold level. An exit barrier can also be controlled.
LB147 complies with the IEC 1098 standard.

Technical data

Electronics:
Compact and energy efficient microprocessor electronics, program in Flash memory allowing easy program update, real-time clock, connection of up to 6 probes with +5 V supply, standard norm pulse output and control signal for probe high voltage. Input/Output: 4 off digital input, 6 control voltages, 2 serial interfaces, 1st as USB, RS232 or RS485, the second as RS232 connection for a card reader, 3 relays with change-over contacts for mains switching of externallight beacons or exit barrier.

Voltage supply:	85 to 264V AC, 7 W
Operating temperature:	-5 to 40°C
Relative airhumidity:	0-90 %,on-condensing
Enclosure:	IP54
Dimensions:	60x60x120cm
Weight:	25kg

Hand detectors:
ZnS(Ag) scintillator, with light-tight Hostaphan foil. Detector surface: 130x210 mm, effective area 218 cm². Protection grid with 80% transmission, typical efficiencies *: Sr-90 / Y-90: 42%, Cl-36: 45%, C-14:11%, Am-241:20%.

Foot detectors:
ZnS(Ag) scintillator, with light-tight Hostaphan foil. Detector surface: 150x360 mm, effective area 390 cm². Protection grid with 72% transmission, typical efficiencies *: Sr-90 / Y-90: 37%, Cl-36: 40%, C-14:9%, Am-241:10%

* related to total activity

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