

Data Sheet

Geiger Muller Dose Rate Probe LB 6500-H10

USE

Used as dose rate probe in radiation protection

Type Approvals PTB-Bauartzulassung

LB 6500-4-H10 23.71 / 04.03

23.71

LB 6500-3-H10 23.71 / 04.04

04.03

(in combination with the LB 111 Micro
Gamma Counting Electronics)

23.71

04.04

Measured Radiation Quantity

Ambient dose equivalent $H^*(10)$

Ambient dose rate equivalent $\dot{H}^*(10)$



Application

Dose rate probe for environmental γ -monitoring or for local dose rate measurement.

Features

Dose rate probe in Stainless steel envelope with integrated GM counter tube, amplifier –pulse shaper stage and High Voltage module.

Exists in 2 versions

LB 6500-4-H10 Low dose rate ≤ 10 mSv/h

LB 6500-3-H10 High dose rate ≤ 1 Sv/h

Functional Description

The probe contains following modules:

- ▶ Ambient Equivalent Energy compensated GM counter tube.
- ▶ High voltage for the GM counter tube (high voltage setting internally).
- ▶ Amplifier discriminator circuit.

Technical Data

▶ Dose Rate Range

LB 6500-4-H10: 100 nSv/h – 10 mSv/h
(Type approved: 500 nSv/h – 3 mSv/h)

LB 6500-3-H10: 1 μ Sv/h – 1 Sv/h
(Type approved: 10 μ Sv/h – 1 Sv/h)

▶ Energy Range

LB 6500-4-H10:
PTB Type Tested: 65 keV – 1,3 MeV $\pm 40\%$
with regard to Cs-137 and 0°
Angular response $\pm 45^\circ$

LB 6500-3-H10:
PTB Type Tested: 50 keV – 1,3 MeV $\pm 40\%$
with regard to Cs-137 and 0°
Angular response $\pm 45^\circ$

▶ Life cycle

LB 6500-4-H10 5 x 1E10 counts
LB 6500-3-H10 5 x 1E10 counts

▶ Intrinsic Background

LB 6500-4-H10 approx. 0,08 cps
LB 6500-3-H10 approx. 0,014 cps

▶ Calibration Factor

LB 6500-4-H10 0,617 μ Sv/h per cps
LB 6500-3-H10 7,05 μ Sv/h per cps

▶ **Output Signal**

Polarity: positive
 Amplitude: +12V (in 1 kOhm load)
 +6V (in 50 Ohm load)
 Width: 5 μ s
 Min. Repetition time: 1,5 μ s
 Rise & Fall time: 100 ns / 1 μ s
 Impedance: 50 Ω

▶ **Connecting Cable**

7-core Shielded cable: 0,75mm²
 UL-POWER-PUR-D
 LIH 12Y
 Outer diameter: 7.5 mm
 Max. Length: \leq 100 m
 Layout: 0 V green
 +14.5 to 25 V yellow
 pulse out brown
 shield black

Alternatively:
 Version LB 6500-4T-H10 / LB 6500-3T-H10 with
 5 pole Tuchel-Connector
 Layout:
 PIN 1 pulse out brown
 PIN 2 0 V green
 PIN 3 +14,5 to 25 V yellow

▶ **High Voltage**

DC Converter
 Voltage range: 300 to 650 V (internal set point via trimmer)

▶ **Operating Voltage**

LB 6500-4-H10: 450 Volt
 LB 6500-3-H10: 575 Volt

▶ **Supply Voltage, Current consumption**

+ 14,5 to 25 V: 15 mA (at background)

▶ **Operating Conditions**

Ambient Temp: -20 to +40°C
 Rel. Humidity, condensing: 30 to 90 %
 Storage Temp: max. 60°C

▶ **Protection Degree**

IP65

▶ **Dimensions / Weight**

Outer Diameter: 45 mm
 Length: 315 mm
 Weight: approx. 1000 g

Energy Dependent Response LB 6500-4-H10 and LB 6500-3-H10

