

Data Sheet

Geiger Muller Dose Rate Probe LB 6500-H10

USE

Used as dose rate probe in radiation protection

Type Approvals PTB-Bauartzulassung

LB6500-4-H10 23.71 / 04.03

23.71

LB6500-3-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

LB6500-4-H10 Low dose rate ≤ 10 mSv/h

LB6500-3-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)

LB6500-3-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 $\pm 45^\circ$

LB6500-3-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
LB6500-3-H10	5 x 1E10 counts

▶ Intrinsic Background

LB 6500-4-H10	approx. 0,08 cps
LB6500-3-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

► **High Voltage**

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

► **Operating Voltage**

LB6500-4-H10: 450 Volt
LB6500-3-H10: 575 Volt

► **Connecting Cable**

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

► **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 %
Condensing
Storage Temp: max. 60°C

► **Protection Degree**

IP 65

► **Dimensions / Weight**

Outer Diameter: 45 mm
Length: 320 mm
Weight: approx. 1000 g

Energy response LB 6500-H10

