



## H<sub>p</sub>(10) Secondary Standard Chamber Type 34035

*Parallel plate ionization chamber for direct measurement of H<sub>p</sub>(10) personal dose equivalent on a slab phantom*

### Features

- ▶ Vented sensitive volume of 10 cm<sup>3</sup>
- ▶ Measures the H<sub>p</sub>(10) personal dose equivalent directly
- ▶ Suitable as a reference chamber for H<sub>p</sub>(10) calibration

The parallel plate ionization chamber model 34035<sup>1</sup> is integrated into a slab phantom to measure the H<sub>p</sub>(10) radiation protection measuring quantity directly. The high performance chamber is designed to be used as a secondary standard chamber for calibration purposes. The beam calibration with the H<sub>p</sub>(10) chamber makes it unnecessary to precisely determine the spectrum of the X-ray beam. The chamber comes uncalibrated; a primary standard calibration by PTB, the German National Laboratory, is available. The chamber set includes a phantom slab of 31 mm thickness with chamber assembly and an additional PMMA phantom slab of 120 mm thickness. Both sets available include an adapter cable to connect the chamber either to a dosimeter with M connector or with BNC connector and banana pin. The H<sub>p</sub>(10) chamber should be used in connection with a high quality dosimeter such as UNIDOS, UNIDOS E or UNIDOS<sup>weblin</sup>e to ensure best performance.

### Specification

Type of product	vented parallel plate chamber
Application	radiation protection measurements
Measuring quantity	H <sub>p</sub> (10) personal dose equivalent
Nominal sensitive volume	10 cm <sup>3</sup>
Design	not waterproof, vented
Reference conditions	20°C, 1013 hPa 65 % rel. humidity
Reference point	chamber center, 13.5 mm below chamber surface or 15.5 mm below surface of integrated step cylinder
Nominal response	285 nC/Sv
Chamber voltage	400 V nominal
Leakage current	≤ ± 10 fA
Cable leakage	≤ 1 pC/(Gy·cm)

### Materials and measures:

Phantom material	PMMA
Outer dimensions chamber assembly	300 mm x 300 mm height 31 mm
additional slab phantom	height 120 mm

### Useful ranges:

Chamber voltage	± (300 ... 500) V
Radiation quality	(15 ... 1400) keV
Temperature	(10 ... 40) °C (50 ... 104) °F
Humidity	(10 ... 80) %, max 20 g/m <sup>3</sup>
Air pressure	(700 ... 1060) hPa

### Ordering information

L981937 H<sub>p</sub>(10) Secondary standard chamber type 34035, connecting system M

L981938 H<sub>p</sub>(10) Secondary standard chamber type 34035, connecting system BNC and banana pin

### Option

PTB Primary standard calibration upon request

<sup>1</sup> Ankerhold, Ambrosi, Eberle – A chamber for determining the conventionally true value of H<sub>p</sub>(10) and H\*(10) needed by calibration laboratories – Rad. Prot. Dos. Vol. 96, Nos 1-3, pp. 133 - 137 (2001), Nucl. Techn. Publishing