

Reference Soft X-Ray Chamber



Acrylic parallel plate ionization chamber for reference dosimetry with soft X-rays up to 20 keV

Features

- ▶ Vented sensitive volume of 100 cm³
- ▶ Suitable as a reference standard chamber for measurement of very low energy X-rays
- ▶ Includes a large size and extremely thin entrance window

The circular parallel plate ionization chamber model 34047¹ is intended as a reference standard chamber for the measurement of very low energy X-rays free in air. The nominal photon energy range is from 5 keV to 20 keV. The chamber is used in connection with reference class dosimeters for calibration measurements. The response is $5 \cdot 10^{-6}$ C/Gy. The entrance window is a very thin PET foil of 0.0035 mm thickness with a graphite layer. The weight per unit area is 0.55 mg/cm². The sensitive volume is fully guarded. The chamber housing is totally made of tissue-equivalent acrylic material (PMMA). To protect the chamber against mechanical damage, a protective cover is mounted in front of the entrance window. The external diameter of the sensitive volume is 100 mm, and the diameter of the chamber housing is 154 mm. A connection cable of 1.5 m length is firmly mounted to the chamber housing. The chamber comes uncalibrated. It must be calibrated by a qualified standard laboratory.

The fixation of the chamber in the radiation beam for measurement can be done by means of an adjustable stainless steel stem of 200 mm length. The stem and the stem holding device on the chamber rear are removable.

¹ The chamber has been developed in co-operation with the Japan Atomic Energy Research Institute, JAERI, Kashiwa, Japan.

Ordering Information

TN34047 Reference soft X-ray chamber, BNT connector

TW34047 Reference soft X-ray chamber, TNC connector

TM34047 Reference soft X-ray chamber, M connector

TB34047 Reference soft X-ray chamber, BNC connector and banana pin

Option

PTB Primary standard calibration upon request

- ▶ UNIDOS Dosimeters *pages 13 and 138*