

Roos[®]

Electron Chamber



Precision plane parallel chamber for absolute dosimetry of high-energy electron radiation in water and solid state phantoms

Features

- ▶ Vented sensitive volume of 0.35 cm³
- ▶ Reference chamber for precise absolute electron dosimetry
- ▶ Perturbation-free design and minimal polarity effect
- ▶ Suitable for use in water and in solid state phantoms

The Roos electron chamber¹ is used as a reference electron chamber. It is recommended by the IAEA² for high precision electron dosimetry in radiation therapy. The chamber has a 4 mm wide guard ring to exclude any perturbation effect even at low electron energies. The polarity effect is negligible (< 0.5 % at 10 MeV). The energy response is only influenced by the stopping power ratios water/air. The chamber is waterproof for absolute dose and depth dose measurements in a water phantom. The acrylic entrance window has a thickness of 1 mm. The nominal useful energy range is from 2 MeV to 45 MeV.

A calibration certificate with a ⁶⁰Co calibration factor given in absorbed dose to water is included. Air density correction is required for each measurement. A radioactive check device with adapter is available as an option. The chamber cable length is 1.08 m.

¹ The Roos electron chamber was developed in cooperation with Dr. Roos, PTB-Braunschweig, German Federal Institute of Physics and Metrology (National Laboratory of Germany)

² Technical Report No. TRS-381. The Use of Plane Parallel Ionization Chambers in High Energy Electron and Photon Beams, IAEA (International Atomic Energy Agency), Vienna 1997

Ordering Information

Roos chamber, connecting system BNT, TNC or M:
34001 Roos electron chamber

- ▶ Therapy Dosemeters *page 13f.*
- ▶ Radioactive Check Devices *page 23*
- ▶ Calibration Service *page 150*