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**RPD Product Information**

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**Item Number Description**

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**300-675-BNC-M      \* PTW Model 34001 - 0.35cc Roos Chamber**

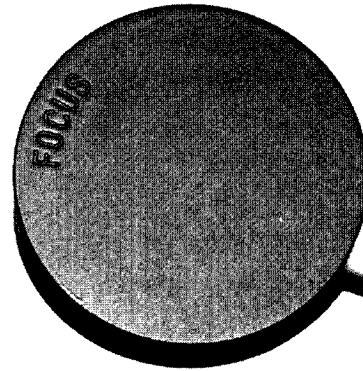
# Roos™ ION CHAMBER TYPE T34001

0.35 cm<sup>3</sup> Electron Ionization Chamber, Waterproof

Diagnostic Radiology  
Radiation Therapy  
Radiation Protection

## Description:

The Roos chamber, a development from Dr. Roos of PTB-Braunschweig, is used as a standard chamber for electron dosimetry. This chamber has a very wide guard ring to exclude any perturbation effect, even at low electron energies. The polarity effect is negligible. Energy dependence is only influenced by the stopping power correction, a type dependent correction is not necessary. The chamber is waterproof and vented through the connection cable.



## Technical Data:

Volume	0.35 cm <sup>3</sup>
Response	$1 \cdot 10^{-10}$ C/Gy
Leakage	$4 \cdot 10^{-14}$ A
Polarizing voltage	100 V recommended, maximum 400 V
Cable leakage	$3.5 \cdot 10^{-14}$ C/(Gy • cm)
Wall material	Acrylic (C <sub>5</sub> H <sub>8</sub> O <sub>2</sub> )
Wall density	1.19 gm/cm <sup>3</sup>
Wall thickness	1.0 mm
Area density	119 mg/cm <sup>2</sup>
Electrode	Acrylic, graphite coated, 15 mm dia
Guard ring	4 mm wide
Nominal useful range	2 MeV - 25 MeV
Range of temperature	10 ... 40 °C
Range of rel. humidity	10 ... 80%
Ion collection time	100 V: 0.37 ms
	200 V: 0.13 ms
	300 V: 0.07 ms

- Designed as a standard chamber for electron dosimetry
- Wide guard ring excludes perturbation effects, even at low electron energies
- Negligible polarity effect, < 0.5% at 10 MeV
- Energy dependence is only influenced by the stopping power correction, a type dependent correction is not necessary
- Completely Waterproof
- Ideal for use in water phantoms or suitable solid state phantoms
- Open volume, vented
- Suitable for all types of triaxial cable connectors: BNT, TNC, PTW-M

## Saturation behavior

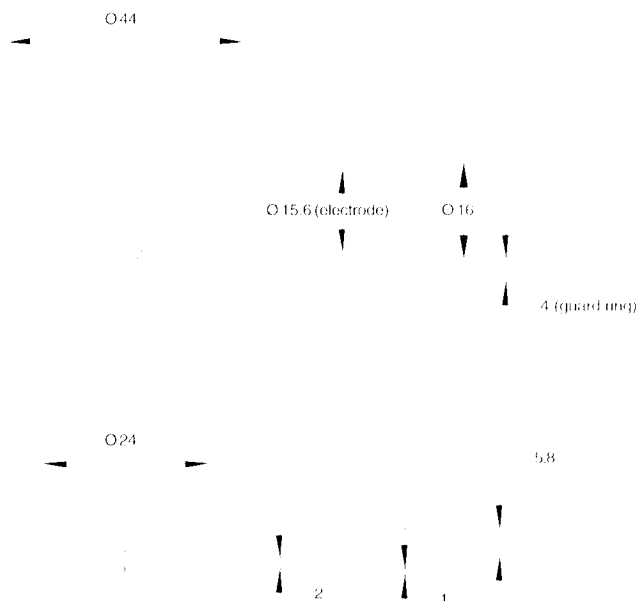
	Polarizing Voltage	99.0% saturation	99.5% saturation
Maximum dose rate at continuous irradiation	100 V	2.6 Gy/s	1.3 Gy/s
	200 V	11 Gy/s	5.2 Gy/s
	400 V	42 Gy/s	21 Gy/s
Maximum dose per irradiation pulse	100 V	0.5 mGy	0.2 mGy
	200 V	0.9 mGy	0.5 mGy
	400 V	1.9 mGy	0.9 mGy

PTW

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## Design:



Approximate dimensions in mm.  
Drawing not to scale.

## Directional Dependence:

The deviation of the response following tilting of the chamber by up to 10° at 6 MeV and 20 MeV, at the dose maximum in water, is less than 0.1%.

For additional information, please contact:

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