



Radiation Products Design, Inc.

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**RPD is an
authorized distributor**

RPD Product Information

Item Number Description

300-625-BNC-M	* PTW Model 23343 - Markus (0.055cc) Chamber
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MARKUS™ ION CHAMBER TYPE T23343

0.055 cm³ Electron Ionization Chamber

Diagnostic Radiology
Radiation Therapy
Radiation Protection

Description:

The MARKUS chamber is the very first chamber specifically designed for electron dosimetry. The chamber may be used for measurements in water phantoms or solid state phantoms. A PMMA waterproofing cap, equivalent to 1 mm of water, and an annulus, for solid state phantom measurements, are included. The chamber's small measuring volume makes it ideal for electron measurements when very high spatial resolution is required. The diaphragm front allows measurements in the build-up region of electron fields to a depth of virtually zero.



Technical Data:

Volume	0.055 cm ³
Response	$2 \cdot 10^{-11}$ C/Gy
Leakage	$\pm 2 \cdot 10^{-14}$ A
Polarizing voltage	300 V recommended, 400V maximum
Cable leakage	$3.5 \cdot 10^{-11}$ C/(Gy • cm)
Wall material	Polyethylene CH ₂
Membrane thickness	0.03 mm
Area thickness	2.5 mg/cm ²
Electrode	Acrylic, graphite coated, 5.3 mm Ø
Nominal useful range	2 ... 45 MeV
Range of temperature	10 ... 40 °C
Range of rel. humidity	10 ... 80%
Ion collection time	150 V: 0.20 ms 300 V: 0.09 ms 400 V: 0.07 ms

- Suitable for use in solid state phantoms and water phantoms
- Vented measuring volume
- Fully guarded up to measuring volume
- Touchable parts free of high voltage
- Extension cables up to 100 meters in length are available
- Suitable for all types of triaxial cable connectors: PTW-M, BNT, TNC, BNC + banana on request

Saturation behavior

	Polarizing Voltage	99.0% saturation	99.5% saturation
Maximum dose rate at continuous irradiation	150 V	5.9 Gy/s	2.9 Gy/s
	300 V	24.0 Gy/s	12.0 Gy/s
	400 V	42.0 Gy/s	21.0 Gy/s
Maximum dose per irradiation pulse	150 V	0.7 mGy	0.4 mGy
	300 V	1.4 mGy	0.7 mGy
	400 V	1.9 mGy	0.9 mGy

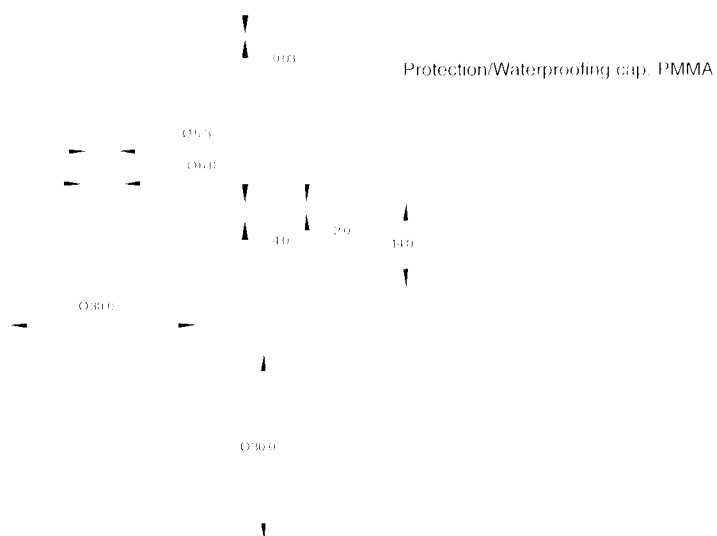
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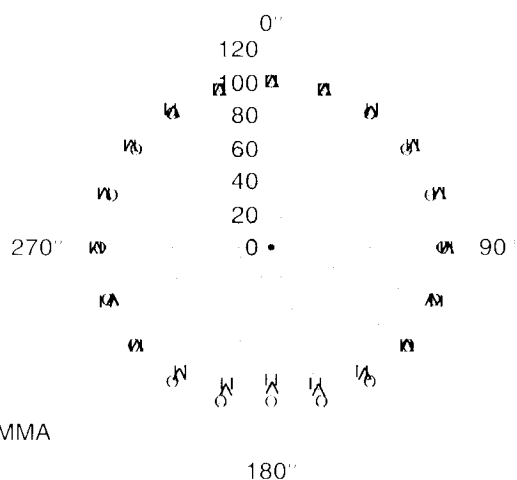
Diagram:



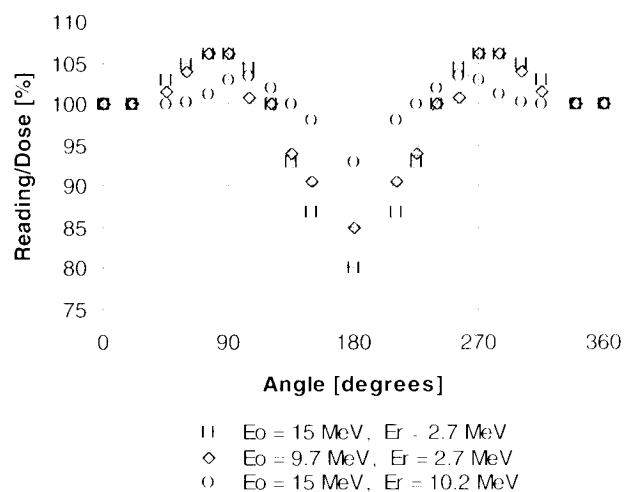
Approximate dimensions in mm.
Drawing not to scale.

Directional Dependence:

- E₀ = 15 MeV, E_r = 2.7 MeV
- △ E₀ = 9.7 MeV, E_r = 2.7 MeV
- E₀ = 15 MeV, E_r = 10.2 MeV



in PMMA



The values given in the diagrams are typical for the construction.

For additional information please contact:



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