



Radiation Products Design, Inc.

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**RPD is an
authorized distributor**

RPD Product Information

Item Number Description

300-615-BNC-M * PTW Model 23332 / 30016 - 0.3cc Rigid Stem Chamber

IONIZATION CHAMBER TYPE 23332

Radiation Therapy

Diagnostic Radiology

Nuclear Medicine

Radiation Protection

Rigid Stem Chamber 0.3 cm³

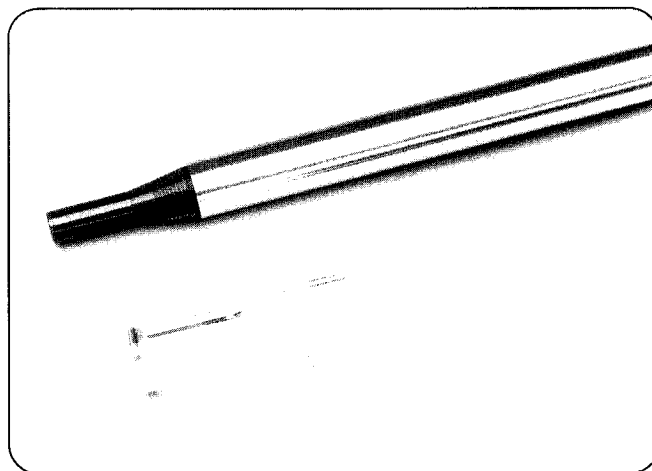
Description

The ionization chamber type 23332 has been designed as a chamber for absolute dosimetry to be used in radiation therapy. This chamber has a very small variation of response with radiation quality. It is constructed with a long rigid stem for easy mounting in the radiation field; it can be equipped with a built-in temperature sensor. This chamber is type tested by the PTB Braunschweig.

The smaller volume in comparison with the 1 cm³ chamber makes this chamber more suitable for use with pulsed radiation because of its better saturation.

Technical data

Volume:	0.3 cm ³
Response:	$1 \cdot 10^{-11}$ C/Gy
Leakage:	$\pm 4 \cdot 10^{-14}$ A
Polarizing voltage:	max. 500 V
Cable leakage:	$1 \cdot 10^{-14}$ C/(Gy · cm)
Wall material:	PMMA (C ₅ H ₈ O ₂) _n
Wall density:	1.18 g/cm ³
Wall thickness:	0.5 mm
Area density:	59 mg/cm ²
Electrode:	Aluminium, graphite coated; 2 mm Ø; 16.5 mm long
Range of temperature:	+ 10° C ... + 40° C
Range of rel. humidity:	20 % ... 75 %
Ion collection time:	300 V: 0.05 ms 400 V: 0.04 ms 500 V: 0.03 ms



- Guard ring up to measuring volume
- Suitable for use in solid state phantoms
- Guard ring at potential of the collecting electrode. Touchable parts free of high voltage
- High voltage to be connected only with active current-limiting device ($I_{\max} < 0.5$ mA)
- Open measuring volume, without check device air density correction is necessary
- Lengthening cable up to 100 m available
- Approved for official calibration, 23321
German sign of certification: 8223

Saturation behaviour

	Polarizing voltage	99.0 % saturation	99.5 % saturation
Max. dose rate at continuous irradiation	300 V 400 V 500 V	50 Gy/s 105 Gy/s 150 Gy/s	30 Gy/s 54 Gy/s 80 Gy/s
Max. dose per irradiation pulse	300 V 400 V 500 V	1.8 mGy 2.5 mGy 3.0 mGy	0.8 mGy 1.0 mGy 1.3 mGy

IONIZATION CHAMBER TYPE 23332

Rigid Stem Chamber 0.3 cm^3

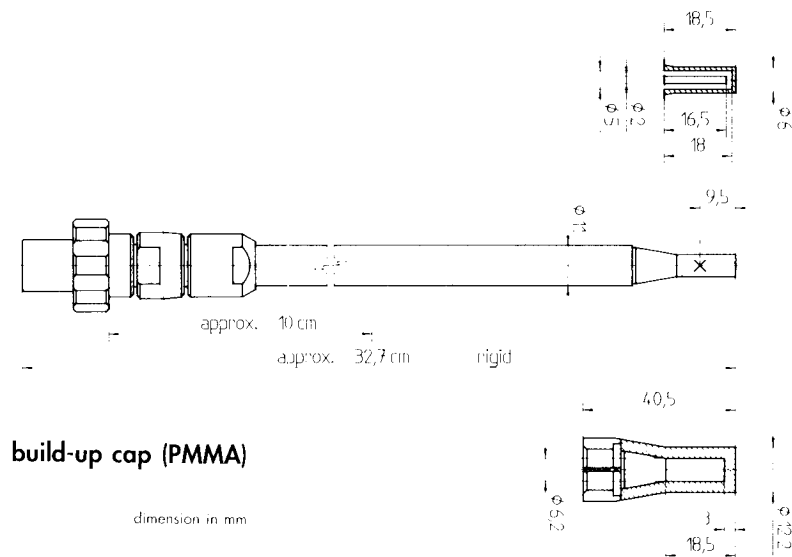
Radiation Therapy

Diagnostic Radiology

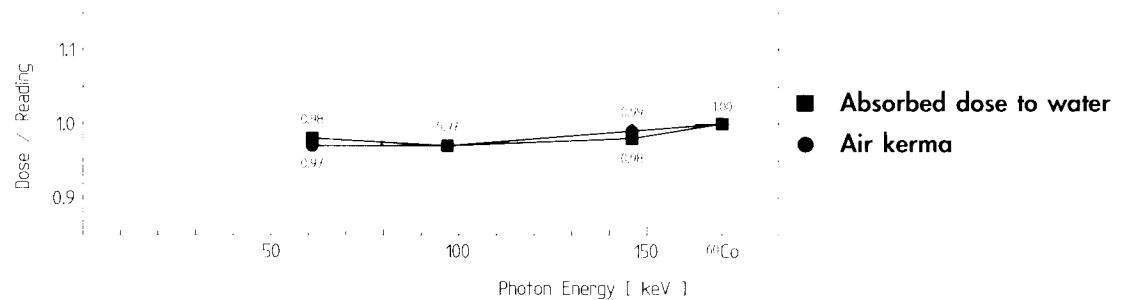
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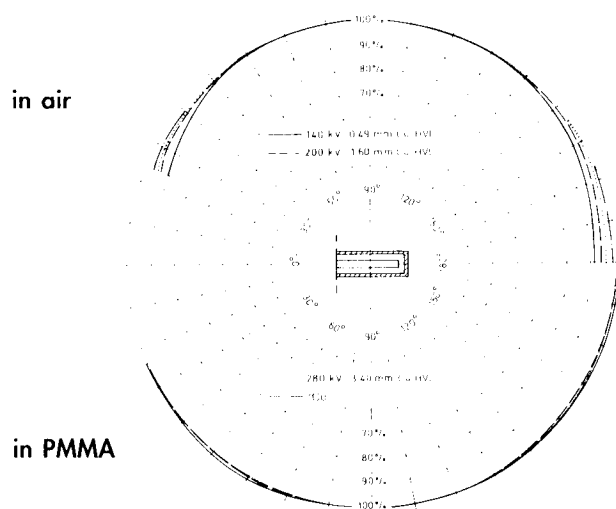
Design



Energy Dependence



Directional Dependence



Reading / Dose [%]

	24°	30°	60°	90°	120°	150°	162°	174°	180°
140 kV	90.5	92.0	99.2	100.0	99.6	96.0	93.5	91.6	91.6
200 kV	93.3	96.0	99.3	100.0	99.8	98.0	96.0	94.9	94.1
280 kV	94.4	97.0	99.2	100.0	100.1	99.0	97.5	96.8	95.4
⁶⁰ Co	96.2	97.5	99.1	100.0	100.1	99.5	99.0	98.6	99.0

	24°	30°	60°	90°	120°	150°	162°	174°	180°
140 kV	100.9	101.2	101.9	100.0	100.3	100.5	101.0	101.3	101.4
200 kV	101.0	100.7	100.5	100.0	99.3	99.2	100.0	100.5	101.5
280 kV	101.6	101.0	100.3	100.0	99.8	99.8	100.5	101.4	101.6
⁶⁰ Co	101.0	100.8	100.3	100.0	100.5	101.2	101.2	101.2	101.4

The values given in the diagrams are typical for the construction

Subject to change without notice

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PTW

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