



Radiation Products Design, Inc.

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**RPD is an
authorized distributor**

RPD Product Information

Item Number Description

300-620-BNC-M	* PTW Model 23342 - 0.02cc Small Soft X-Ray Chamber
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IONIZATION CHAMBER TYPE 23342

Radiation Therapy

Diagnostic Radiology

Nuclear Medicine

Radiation Protection

Small Soft-X-Ray Chamber 0.02 cm³

Description

The soft X ray ionization chamber type 23342 is the standard chamber for measurements in skin therapy. It can be used in air or in the depth of solid phantoms (e.g. phantom type T2962). The usual calibration is 15 kV to 70 kV. This chamber has a very flat energy dependence from 10 kV to 100 kV. This chamber is type tested by the PTB Braunschweig.

Technical data

Volume:	0.02 cm ³
Response:	$3 \cdot 10^{-10}$ C/Gy
Leakage:	$\pm 1 \cdot 10^{-14}$ A
Polarizing voltage:	max. 300 V
Cable leakage:	$1 \cdot 10^{-12}$ C/(Gy · cm)
Wall material:	PE (CH ₂) _n
Membran thickness:	0.03 mm
Area density:	2.5 mg/cm ²
Electrode:	Graphite; 3 mm Ø
Range of temperature:	+ 10° C ... + 40° C
Range of rel. humidity:	20 % ... 75 %
Ion collection time:	150 V: 0.05 ms 300 V: 0.03 ms



- Guard ring up to measuring volume
- Suitable for use in solid state phantoms
- Guard ring at the potential of the inner electrode. All 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, ^{23.21}
German sign of certification: ^{82.25}

Saturation behaviour	Polarizing voltage	99.0 % saturation	99.5 % saturation
Max. dose rate at continuous irradiation	150 V 300 V	88 Gy/s 350 Gy/s	44 Gy/s 175 Gy/s
Max. dose per irradiation pulse	150 V 300 V	2.2 mGy 4.5 mGy	0.9 mGy 1.8 mGy

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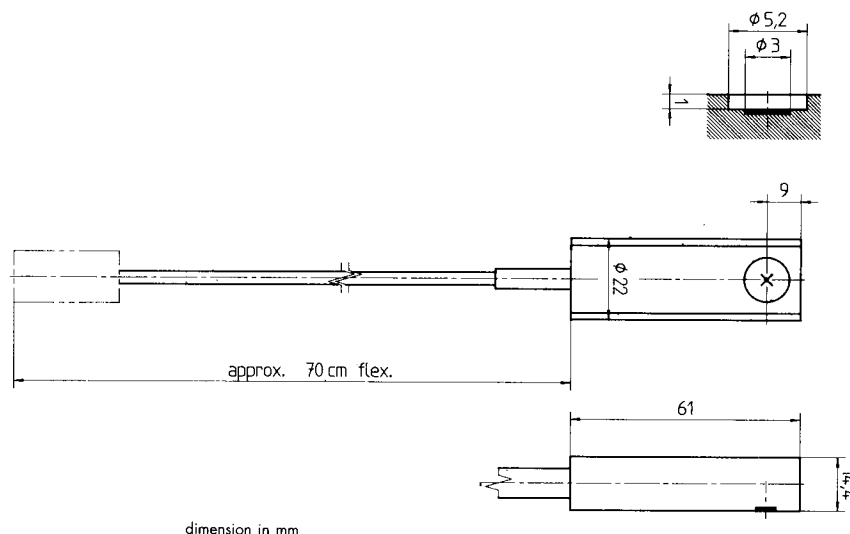
Radiation Therapy

Diagnostic Radiology

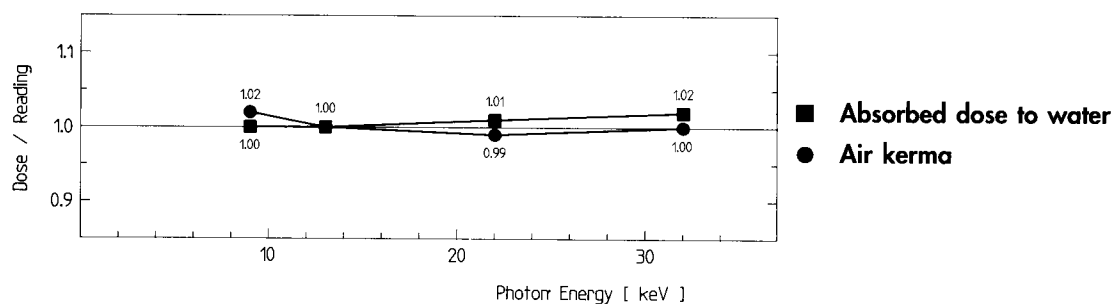
Nuclear Medicine

Radiation Protection

Design

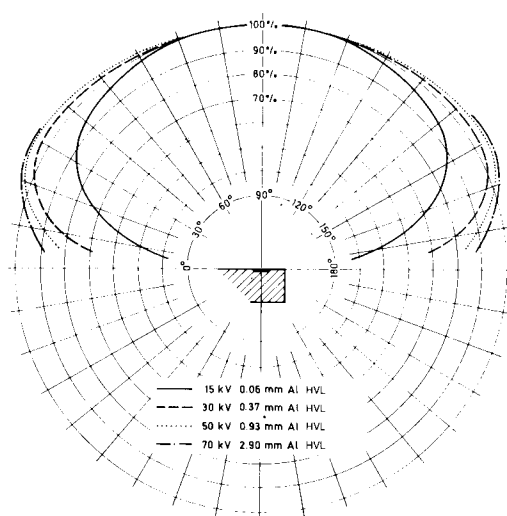


Energy Dependence



Directional Dependence

in air



Reading / Dose [%]

	6°	24°	36°	54°	66°	90°	114°	126°	144°	156°	174°
15 kV	33.4	79.6	91.5	96.5	98.7	100.0	98.7	96.5	91.5	79.6	33.4
30 kV	68.7	100.7	102.8	101.6	100.6	100.0	100.6	101.6	102.8	100.7	68.7
50 kV	82.7	103.7	104.2	102.5	101.1	100.0	101.1	102.5	104.2	103.7	82.7
70 kV	88.5	104.4	104.5	102.5	101.1	100.0	101.1	102.5	104.4	104.4	88.5

The values given in the diagrams are typical for the construction

PTW PRECISION