



Expect Service

Radiation Products Design Inc

SPEC SHEET

RPD INFORMATION

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RPD IS AN AUTHORIZED DISTRIBUTOR

Item Number	Description
300-655-BNC-M	PTW 30006 / 30013 - 0.6cc Waterproof Farmer Chamber

IONIZATION CHAMBER TYPE T30006

PTW Farmer™ Chamber, 0.6 cm³, Waterproof

Diagnostic Radiology
Radiation Therapy
Radiation Protection

Description:

The 0.6 cm³ PTW Farmer ionization chamber type T30006 is a waterproof version of our standard PTW Farmer chamber, type T30001. Since the T30006 is waterproof, it may be used in water phantoms and does not require a protective sleeve. The chamber is designed for absolute dosimetry in radiation therapy. It is rugged in construction and has a PMMA/graphite thimble and an aluminum electrode.



Technical Data:

Volume	0.6 cm ³
Response	$2 \cdot 10^{-8}$ C/Gy
Leakage	$\pm 4 \cdot 10^{-15}$ A
Polarizing voltage	max. 500 V
Cable leakage	10^{-12} C/(Gy · cm)
Wall material	PMMA (C ₅ H ₈ O ₂), Graphite (C)
Wall density	1.19 gm/cm ³ (PMMA), 1.85 gm/cm ³ (C)
Wall thickness	0.335 mm PMMA, 0.09 mm C
Area density	56.5 mg/cm ²
Electrode	Aluminum, 1.1 mm Ø, 21.2 mm long
Nominal useful range	30 keV ... 50 MeV
Range of temperature	10 ... 40 °C
Range of rel. humidity	10 ... 80%
Ion collection time	300 V: 0.18 ms 400 V: 0.14 ms 500 V: 0.11 ms

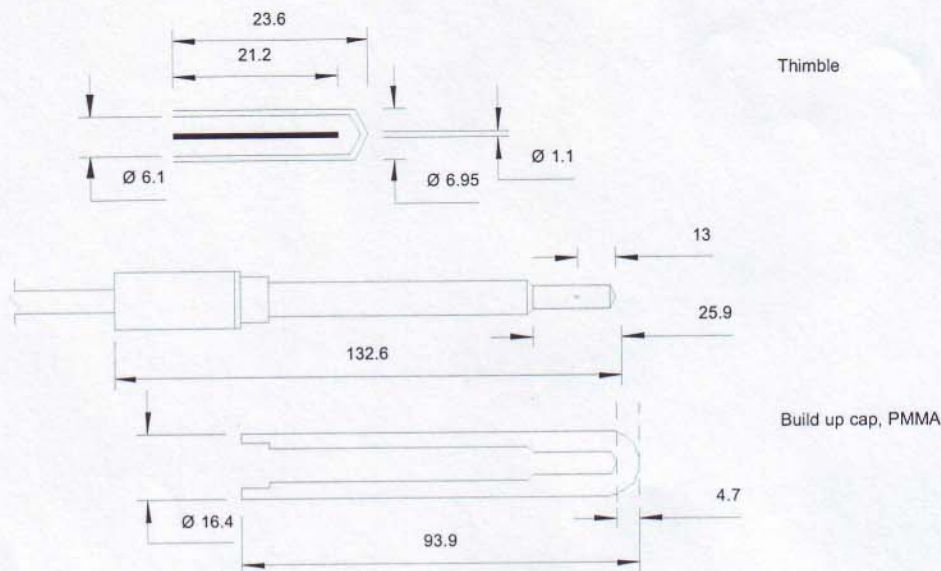
- Completely Waterproof, does not require protective sleeve
- Can be safely used in water phantoms and solid state phantoms
- Open volume, vented at connector
- Fully guarded up to the measuring volume
- Touchable parts free of high voltage
- Extension cables up to 100 meters in length are available
- Suitable for all types of triaxial cable connectors: PTW-M, BNT, TNC, BNC + banana on request

<u>Saturation behavior</u>	<u>Polarizing Voltage</u>	<u>99.0% saturation</u>	<u>99.5% saturation</u>
Maximum dose rate at continuous irradiation	300 V 400 V 500 V	5.70 Gy/s 10.00 Gy/s 16.00 Gy/s	2.80 Gy/s 5.00 Gy/s 7.80 Gy/s
Maximum dose per irradiation pulse	300 V 400 V 500 V	0.69 mGy 0.91 mGy 1.14 mGy	0.34 mGy 0.46 mGy 0.57 mGy

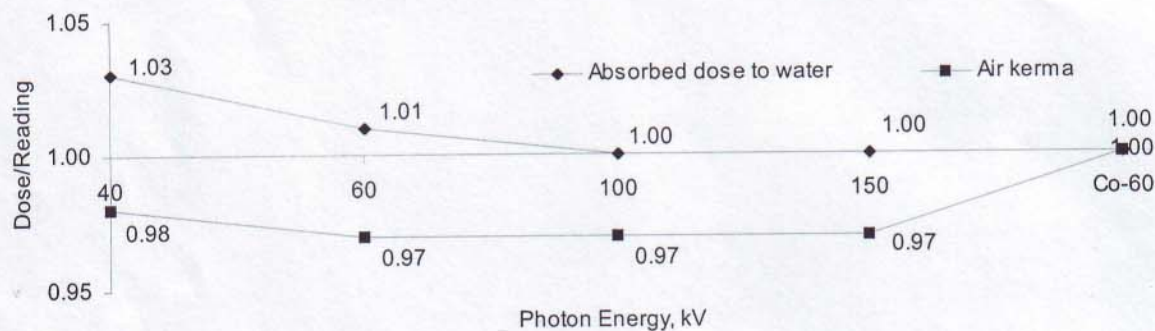
IONIZATION CHAMBER TYPE T30006

PTW Farmer™ Chamber, 0.6 cm³, Waterproof

Diagram:



Energy Dependence:



Directional Dependence:

Reading / Dose, %

in Air

	6°	12°	18°	24°	30°	60°	90°	120°	150°	162°	174°	180°
70 kV	20	48	69	81	88	99	100	100	98	96	91	88
140 kV	36	66	82	90	94	100	100	100	100	98	96	94
280 kV	57	80	90	94	96	100	100	100	100	99	98	97
Co-60	67	85	91	95	97	100	100	100	100	99	99	98

in PMMA

	6°	12°	18°	24°	30°	60°	90°	120°	150°	162°	174°	180°
70 kV	78	88	96	100	101	100	100	100	100	101	102	102
140 kV	90	97	101	102	103	101	100	100	99	100	102	102
280 kV	100	102	103	103	103	101	100	100	100	101	102	102
Co-60	102	101	101	101	101	100	100	100	101	102	102	102

For additional information please contact:

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PTW Farmer is a registered trademark of PTW Freiburg.

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