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RPD is an authorized distributor

RPD Product Information

Item Number Description

300-650-BNC-M * PTW Model 30004 / 30012 - 0.6cc C/A1 Farmer Chamber

IONIZATION CHAMBER TYPE 30004

"C/Al-Farmer" Chamber 0.6 cm³

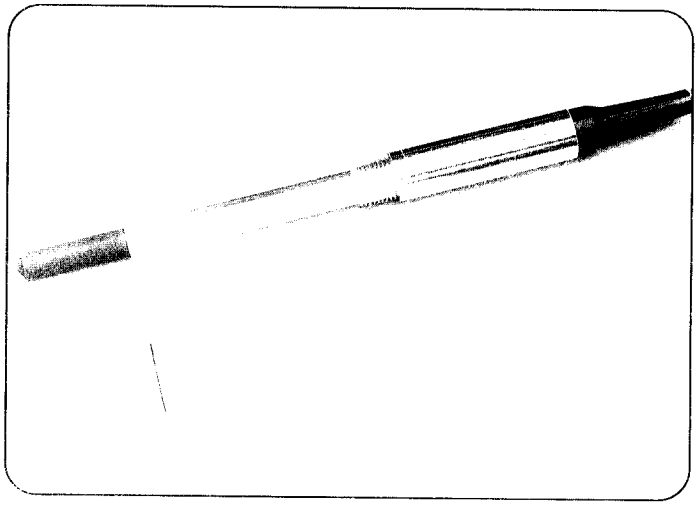
Radiation Therapy
Diagnostic Radiology
Nuclear Medicine
Radiation Protection

Description

The 0.6 cm³ ionization chamber type 30004 is the chamber for absolute dosimetry for use with therapy dosemeters where a graphite-aluminium chamber is required. This chamber is of delicate construction since it is equipped with a graphite cap. It should be handled with care. The chamber is fully guarded up to the measuring volume. The outer dimensions are fully compatible with the Farmer chambers of other manufacturers.
Nominal useful range 60 keV – 50 MeV

Technical data

Volume:	0.6 cm³
Response:	2 · 10⁻⁷ C/Gy
Leakage:	< 4 · 10⁻¹⁵ A
Polarizing voltage:	max. 500 V
Cable leakage:	10⁻¹⁵ C/(Gy · m)
Wall material:	Graphite
Wall density:	1.85 g/cm³
Wall thickness:	0.425 mm
Area density:	79 mg/cm²
Electrode:	Al, 4 mm Ø, 1 mm Ø, 21.2 mm long
Range of temperature:	+ 10 °C ... + 40 °C
Range of rel. humidity:	10 % ... 80 % (< 29 g/m³)
Ion collection time:	300 V: 0.18 ms 400 V: 0.14 ms 500 V: 0.11 ms



- Guard ring up to measuring volume
- Suitable for use in solid state phantoms, watertight sleeves available
- 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
- Connector: TNC or BNT

Saturation behaviour	Polarizing voltage	99.0 % saturation	99.5 % saturation
Max. dose rate at continuous irradiation	300 V	5.7 Gy/s	2.8 Gy/s
	400 V	10 Gy/s	5.0 Gy/s
	500 V	16 Gy/s	7.8 Gy/s
Max. dose per irradiation pulse	300 V	0.69 mGy	0.34 mGy
	400 V	0.91 mGy	0.46 mGy
	500 V	1.14 mGy	0.57 mGy

PTW

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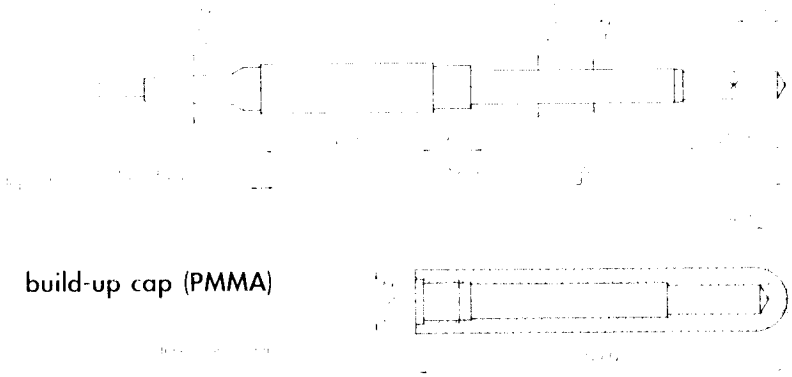
Design

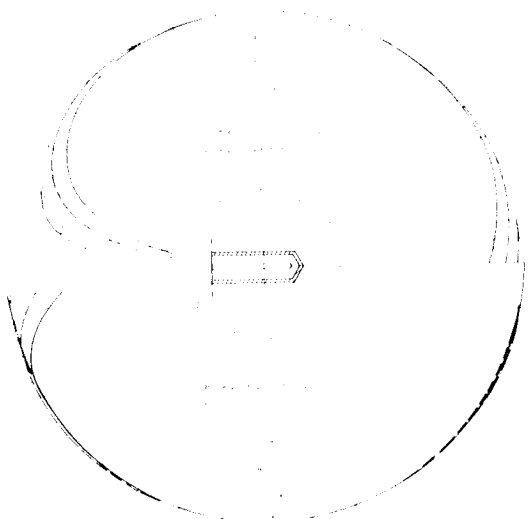


build-up cap (PMMA)

Energy Dependence

■ Absorbed dose to water
● Air kerma

Directional Dependence



in air

in PMMA

Reading / Dose [%]

70 kV	78	88	95	98	99	100	100	100	98	96	91	88
140 kV	95	95	97	98	99	100	100	100	100	98	96	94
280 kV	97	97	98	98	99	100	100	100	100	99	98	97
Co-60	97	97	98	98	99	100	100	100	100	99	99	98

70 kV	98	98	98	100	101	100	100	100	100	101	102	102
140 kV	98	98	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

PTW