

# PinPoint™ Ionization Chamber, 0.015 cm<sup>3</sup>, Waterproof Model 30-350



Radiation Oncology



- Specifically designed for stereotactic field measurements
- Completely Waterproof
- 0.015 cm<sup>3</sup> volume
- 2 mm active diameter
- 5 mm active length
- Directional dependence is better than 0.5% when tilting the chamber by  $\pm 20$  degrees
- Open volume, vented
- Fully guarded up to measuring volume
- Touchable parts free of high voltage

The 0.015 cm<sup>3</sup> PinPoint ionization chamber is specifically designed for stereotactic field measurements. PinPoint is a waterproof cylindrical ion chamber ideally suited to perform relative measurements in water phantoms or solid-state phantoms when superior spatial resolution is required. The chamber is fully guarded up to its measuring volume and open to the surrounding air via its 4.3 ft (1.3 m) cable and BNC Triax connector. PinPoint has a short rigid stem for mounting and includes a PMMA buildup cap.

## Specifications

**Volume** 0.015 cm<sup>3</sup>

**Response**  $4 \cdot 10^{-10}$  C/Gy

**Leakage**  $\pm 4 \cdot 10^{-15}$  A

**Polarizing voltage** Maximum 400 V

**Cable length** 4.3 ft (1.3 m)

**Cable leakage**  $10^{-12}$  C/(Gy • cm)

**Wall material** PMMA (C<sub>5</sub>H<sub>8</sub>O<sub>2</sub>), Graphite (C)

**Wall density** 1.19 gm/cm<sup>3</sup> (PMMA), 0.82 gm/cm<sup>3</sup> (C)

**Wall thickness** 0.56 mm PMMA, 0.15 mm C

**Area density** 79 mg/cm<sup>2</sup>

**Electrode** Steel, 0.18 mm Ø, 4.5 mm long

**Nominal useful range** <sup>60</sup>Co to 50 mV

**Range of temperature** 10° to 40°C

**Range of relative humidity** 10% to 80%

## Ion collection time

100 V: 80 µs

200 V: 40 µs

300 V: 20 µs

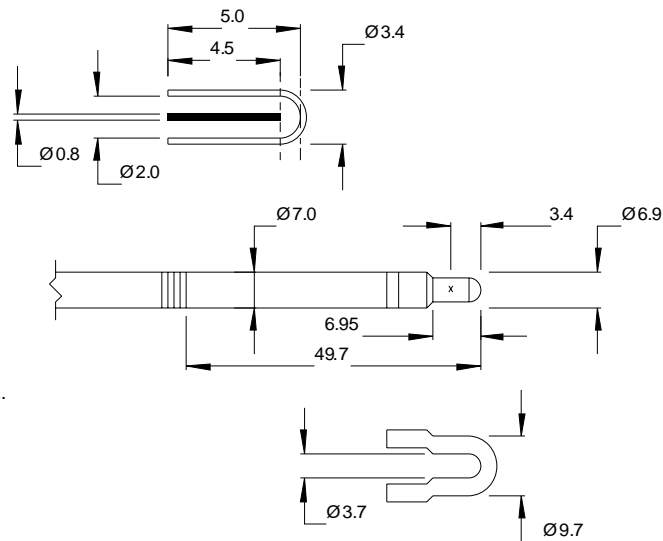
## Saturation behavior

Saturation behavior	Polarizing voltage	99.0% saturation	99.5% saturation
Maximum dose rate at continuous irradiation	100 V	145 Gy/s	74 Gy/s
	200 V	585 Gy/s	290 Gy/s
	400 V	2,340 Gy/s	1,160 Gy/s
Maximum dose rate per irradiation pulse	100 V	1.3 mGy	0.6 mGy
	200 V	2.6 mGy	1.3 mGy
	400 V	5.0 mGy	2.5 mGy

*See next page for more specifications.*

## Specifications (continued)

### Diagram



Thimble

Approximate dimensions in mm.  
Drawing not to scale.

Buildup cap, PMMA

### Spatial resolution

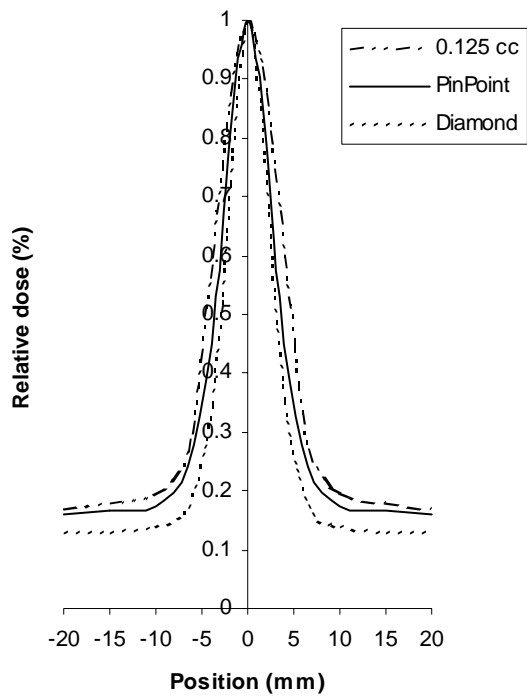


Chart showing profiles of a 0.5 cm gap for 18 mV photons at 3.0 cm depth in water:

Detector Type	50% profile width, cm
0.125 cm <sup>3</sup>	1.01
PinPoint	0.80
Diamond	0.70

### Available model(s)

**30-350** PinPoint Ionization Chamber, 0.015 cm<sup>3</sup>, Waterproof, includes BNC Triax connector, PMMA buildup cap, and 33 mm rigid stem for mounting

*Other types of triaxial cable connectors available*