

# EDGE Detector™

## The Ultimate Small Field Dosimeter

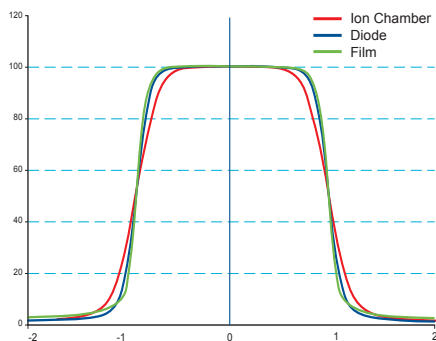
EDGE Detector™ is a waterproof dosimeter with a design that nearly eliminates the convolution of high dose gradient regions during profile and depth measurements. It is intended for measurement of fields as small as 5 mm up to 10 x 10 cm.



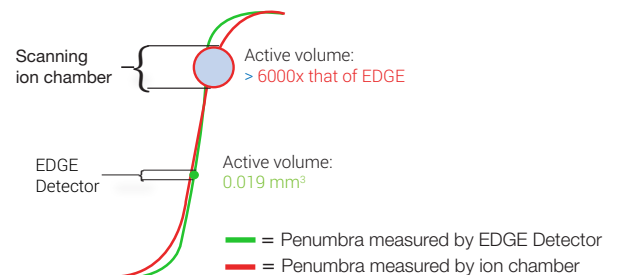
### Features and Benefits

- Water-proof
- Use for SRS and IMRT beam modeling, and TPS Commissioning
- SunPoint® Diode Detector Technology
  - 800 times smaller than micro ionization chambers
  - 100 times more signal than micro ionization chambers
- Small size ideal for accurate penumbra characterization and steep gradients
- Works with all common water phantoms

EDGE: Smallest Area (0.64 mm<sup>2</sup>) & Volume (0.019 mm<sup>3</sup>)



2 x 2 cm field profile measurements with various detectors

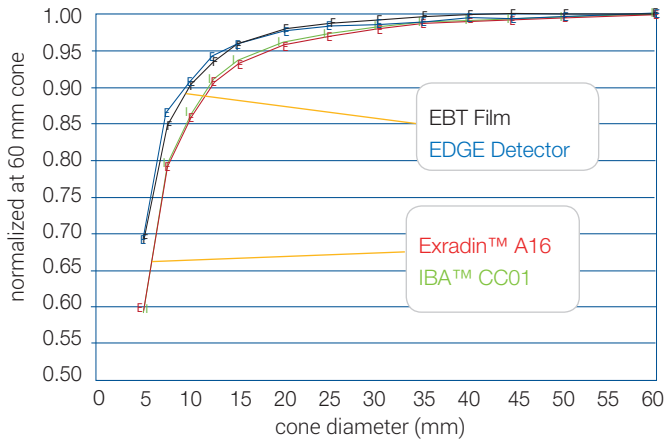


Small size = more precision, less averaging



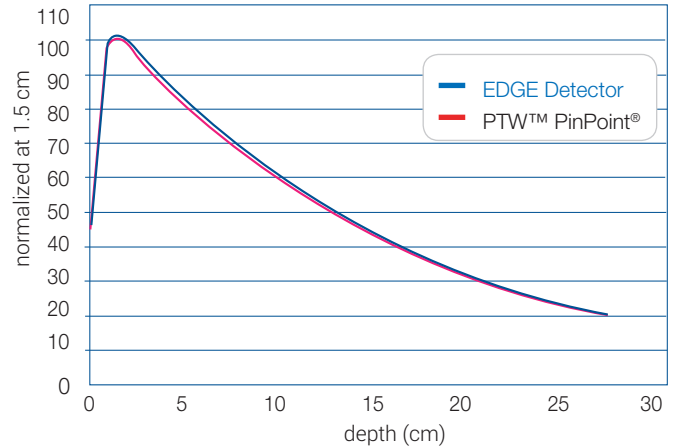
# Detector Comparisons

Output factors measured for CyberKnife® beams at Dmax (6 MV)<sup>1</sup>



The EDGE Detector agrees with EBT film; even for the 5 mm cone. The ion chambers clearly underestimate the output factors of the small beams.

PDD curves measured by different detectors for a 2 x 2 cm field (6 MV)<sup>1</sup>



The PDD curve measured by EDGE Detector agrees with those of the ion chambers.

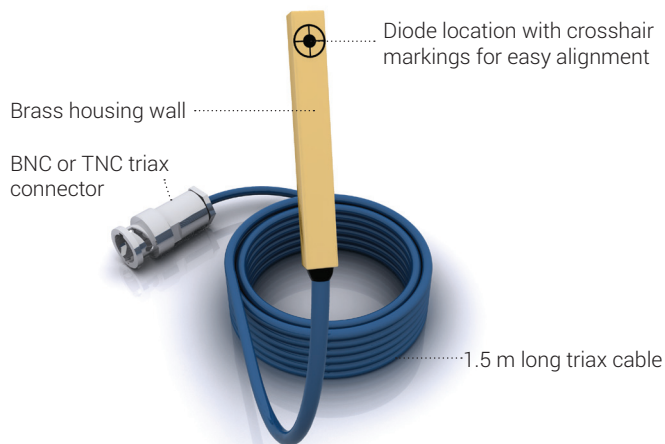
## EDGE Penumbra Comparison<sup>2</sup>

Field size (cm x cm)	Energy (MV)	Penumbra measured (mm) at 10 cm depth	
		EDGE	PinPoint
2 x 2	6	2.9	3.9
	18	4.4	4.9
10 x 10	6	4.4	5.6
	18	5.5	6.9

## EDGE Specification Comparison

Detector type:	SunPoint® Diode Detector	Typical scanning ion chamber
Width (mm):	0.8	2.0
Thickness (mm):	0.03	2.0
Length (mm):	0.8	5.0
Volume (mm <sup>3</sup> ):	0.019	16.0

## Features



<sup>1</sup> "Sun Nuclear EDGE Detector Users Guide" pg. 23 - Mr. Daljit Saini and Mr. Anand Prabhu from CCC of Brevard, Melbourne, FL.; Dr. Ellen Wilcox at St. Francis Hospital, Hartford, CT.

<sup>2</sup> "Sun Nuclear EDGE Detector Users Guide" pg. 25 - courtesy of Ron Watts Ph. D.

PinPoint is a registered trademark of PTW Freiburg GmbH, IBA CC01 is a trademark of IBA Dosimetry Corporation. Exradin is a trademark of Standard Imaging Inc.

## Specifications

Active Detection Area: (mm)	0.8 x 0.8
Diode Die Location: (mm)	0.3 from top
	4.72 from end
Diode Die Location: (mm)	2.7 from side
	Location is indicated by cross hairs on top of the housing
Water Depth Equivalent: (mm)	0.5
Housing Wall Thickness: (mm)	0.13 brass
External Dimensions: (mm)	3.8 x 5.5 x 38
Nominal Sensitivity:(nC/Gy)	32.0
Impedance (Mohm):	>200 at 10 mV reverse bias
Output Polarity:	Negative
Cable:	3.4 mm dia. x 1.8 m long, triax
Cable Connector:	BNC or TNC triax, or adapters upon request