



Detector EDGE™

The Ultimate Small Field Dosimeter

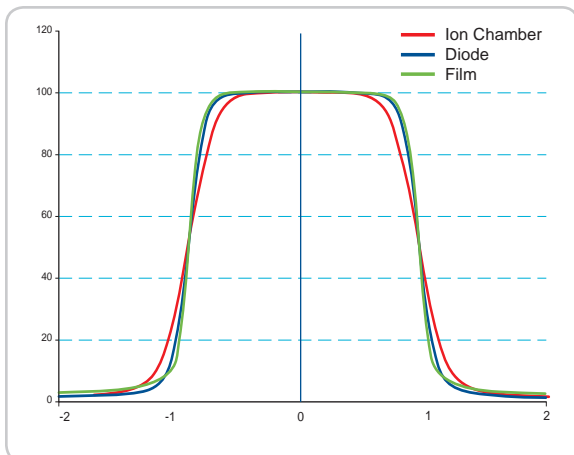
An ultra small dosimetry detector for small field beam scanning.

Benefits

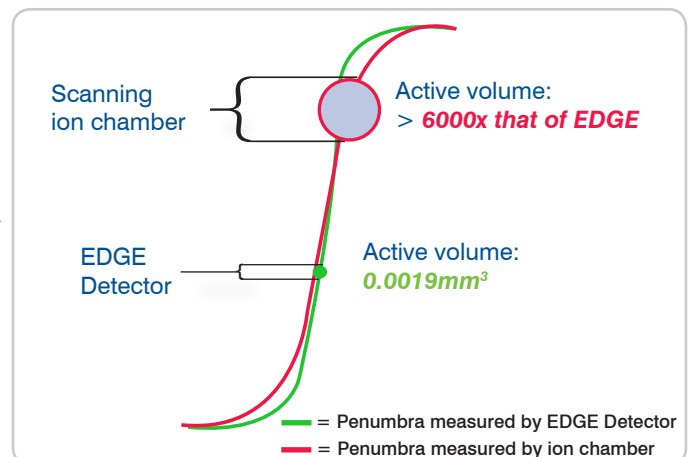
- > Accurate beam modeling
 - Ideal for steep dose gradients
 - Provides true beam penumbra and flatness
 - Models up to a 20 x 20cm field
- > No dose volume averaging
 - Small size = more precise, accurate modeling

The EDGE Detector delivers flatter profiles, sharper resolution, and the *real* beam picture for treatment planning. Compared to ion chambers, EDGE Detector gives approximately 100 times more signal even though it is over 6000 times smaller in volume. Additionally, the EDGE Detector offers the same accuracy for PDD curves, with better accuracy in critical flatness and penumbra measurements.

EDGE: Smallest Area (0.64mm^2) & Volume (0.0019mm^3)



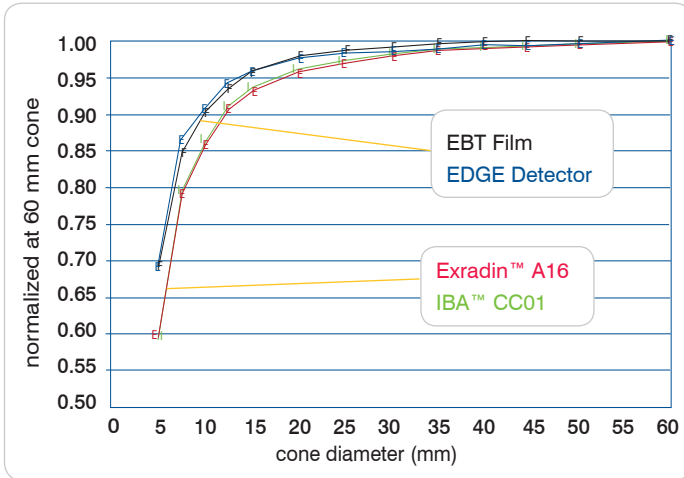
2 x 2cm field profile measurements with various detectors



Small size = more precision, less averaging

Detector Comparisons

Output factors measured for CyberKnife® beams at Dmax (6MV)¹

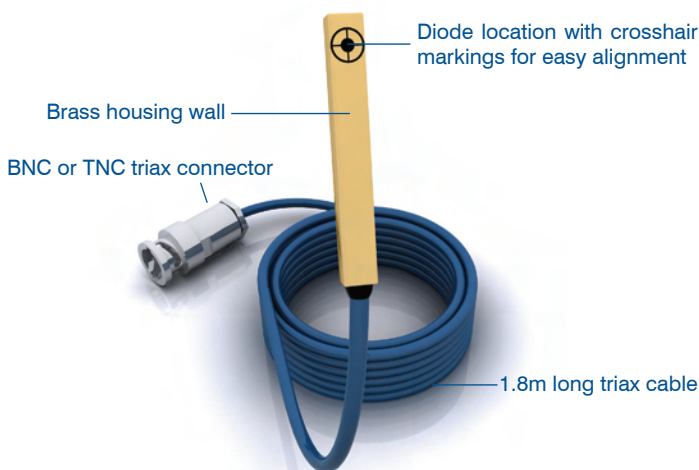


The EDGE Detector agrees with EBT film; even for the 5mm cone. The ion chambers clearly underestimate the output factors of the small beams.

EDGE Penumbra Comparison²

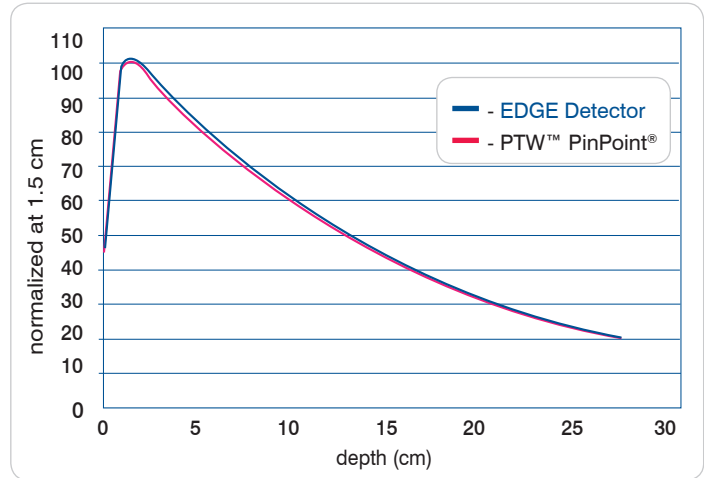
Field size (cm x cm)	Energy (MV)	Penumbra measured (mm) at 10cm depth	
		EDGE	PinPoint
2 x 2	6	2.9	3.9
	18	4.4	4.9
10 x 10	6	4.4	5.6
	18	5.5	6.9

Features and Specifications



¹ "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.
² "Sun Nuclear EDGE Detector Users Guide" pg. 25 - courtesy of Ron Watts Ph. D.

PDD curves measured by different detectors for a 2x2cm field (6MV)¹



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

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 ³):	0.0019	16.0

EDGE Detector Specifications

Active detection area (mm):	0.8 x 0.8
Diode die location (mm):	0.3 from top 4.3 from end 2.7 from side Location is indicated by a target on top of housing
Water depth equivalent (mm):	0.5
Housing wall thickness (mm):	0.13, brass
External dimensions (mm):	3.8 x 5.5 x 38
Sensitivity (nC/Gy):	32.0
Impedance (Mohm):	>200 at 10mV reverse bias
Output polarity:	Negative
Cable:	3.4mm dia. x 1.8m long, triax
Cable connector:	BNC or TNC available