

EXRADIN D1H & D1V DIODES



MICRO FIELD MEASUREMENTS

The Exradin D1V and D1H diodes maximize spatial resolution and minimize angular dependence, allowing for consistent, accurate small-field stereotactic measurements.



● WHY USE AN EXRADIN DIODE?

Exradin diodes produce flatter profiles and sharper resolution with a smaller active measurement area than traditional ion chambers. This allows for the precise measurement of minute fields while still achieving high visibility of the beam's penumbra.

● MINIMIZE ANGULAR DEPENDENCE

A common problem when performing measurements using diode-based detectors is angular dependence or significant variation in signal depending on the orientation of the detector. Exradin diodes help minimize this concern with less than 0.5% angular dependence when tilted up to 20° to the beam, providing more confidence in your results when measuring the penumbra or edge of the beam.

● SPECIALIZED FOR SMALL FIELDS

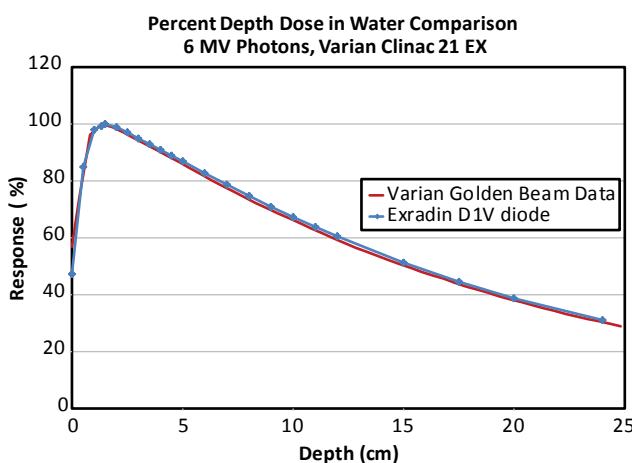
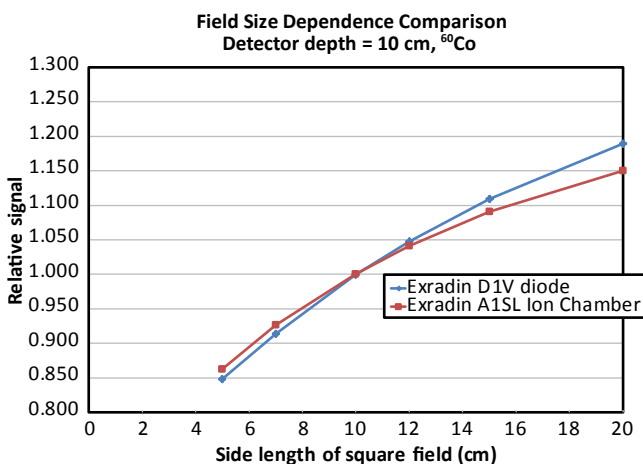
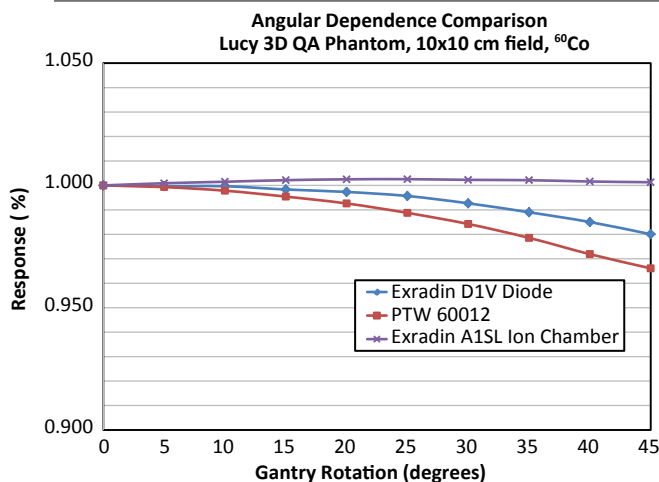
The Exradin D1V and D1H diodes facilitate several measurement modalities in small fields.

- The D1V's diode face is perpendicular to the beam when upright, making it ideal for photon scanning applications and use in water phantoms and the Lucy 3D QA Phantom.
- The D1H's diode face is perpendicular to the beam when flat, for use inside traditional plastic phantoms.

Both the D1V and D1H provide superior measurement of field sizes up to 20 x 20 cm² with excellent spatial resolution and minimal noise.



Performance Data



EXRADIN D1H & D1V DIODES SPECIFICATIONS

DIODE TYPE	P-type Si
MATERIALS	C552 shell for EMI shielding and durability, potted with near-water equivalent epoxy to eliminate air gaps
OUTSIDE DIAMETER	
D1V (REF 92740)	Ø 6.88 mm (0.271") x 46.2 mm (1.817")
D1H (REF 92741)	6.88 mm (0.271") x 6.88 mm (0.271") x 34.8 mm (1.37")
DIAMETER OF SENSITIVE AREA	1 mm ² x ~0.05 mm thick
EFFECTIVE DEPTH BELOW SURFACE	0.8 mm
INTENDED ENERGY RANGE	Photons: ⁶⁰ Co – 25 MV
LOW-NOISE TRIAXIAL CABLE	50 ohms, 29 pF/ft, 1.5 m long
CONNECTOR	Triax BNC (others available upon request)
WATERPROOF	Yes, may be used in water phantoms
SIGNAL POLARITY	positive
OPERATING VOLTAGE	0 VDC bias

RADIATION RESPONSE, TYP	~5 nC/Gy
LEAKAGE CURRENT, TYP	< 100 fA
TEMPERATURE DEPENDENCE, TYP	< 0.4 % / °C
SENSITIVITY DECREASE (AT 6 MV)	< 1.0 % per kGy
DOSE TO PULSE DEPENDENCY	> 99.5% over relevant clinical range
DOSE LINEARITY	> 99.9%
FIELD SIZE DEPENDENCY	> 97.0%
INTENDED FIELD SIZE FOR USE	up to (20 x 20) cm ²
DIRECTIONAL DEPENDENCE	< ± 0.5% tilting ± 20°
OPERATING PARAMETERS	
Temperature	15 to 35 °C
Relative Humidity	20 to 80% non-condensing
Pressure	650 to 770 mmHg

Specifications subject to change without notice.



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