



# ISO RAD<sup>TM</sup> Detector

## Angular Independent Dose Monitoring

### Introduction

As the only cylindrical diode for in-vivo dosimetry, the design of the ISO RAD was chosen because the axial directional response offers near zero angular dependence. This unique isotropic design makes it an ideal choice for tangential beams where it is difficult to predict angle of incidence, for a variety of dosimetry tests in air, or in phantom.

### Three Models

The ISO RAD is available in three photon energy range models. Each model uses a different buildup material optimized to measure the dose near  $d_{max}$ . Offering built-in buildup eliminates the need to add buildup separately. ISO RAD can be custom ordered without buildup for applications where minimal buildup is desired.

### Clinical Characteristics

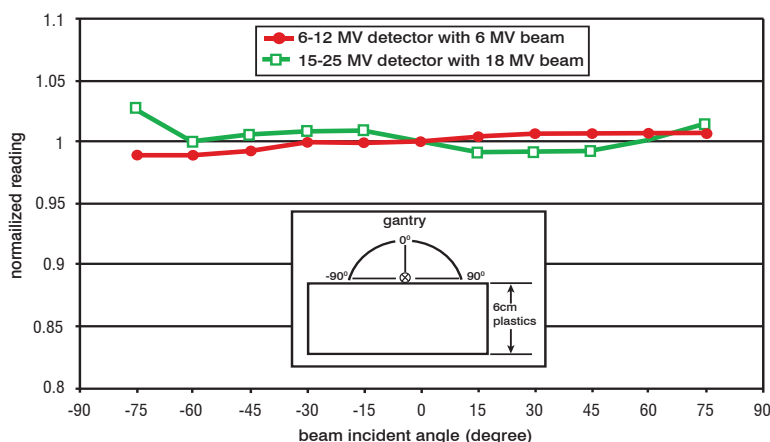
**Superior Radiation Resistance** - The radiation degradation rate is 1% per kGy at 10 MeV and less than 0.5% per kGy at 6 MV.

**Minimized Instantaneous Dose Rate Dependence** - When normalized to 100 cm SSD, the diode response variation is less than  $\pm 1\%$  for 6 and 18 MV from 80 cm to 130 cm.

**Reproducible** - ISO RAD reproducibility error is less than 0.5% for measurements  $> 1\text{cGy}$ .

### Features

- Radiation hardened silicon diode
- Active dimension of 1.4 mm in diameter
- 27 nC/Gy sensitivity
- 3m cable length
- LEMO cable connector (adapters available)



### ISO RAD Specifications

Voltage range	1-4 MV	6-12 MV	15-25 MV	
Buildup material	Brass	Molybdenum	Tungsten	
Total buildup (g/cm <sup>2</sup> )	1.4	1.6	2.6	
*Axial angular response (0°~360°)	99.5% ~ 100.5%	99.5% ~ 100.5%	99.5% ~ 100.5%	
**Axial angular response (-60°~+60°)	99.5% ~ 101.0%	100.0% ~ 101.0%	99.5% ~ 100.0%	
**Transverse angular response (-30°~+30°)	97.5% ~ 102.0%	99.0% ~ 100.5%	99.5% ~ 104.0%	
Energy used for directional response	Co-60	6 MV	18 MV	
Detector diameter (mm)	9.7	9.7	9.7	
Color	BLUE	YELLOW	RED	
Model	Negative output	1162000-2	1163000-2	1164000-2
	Positive output	1162000-3	1163000-3	1164000-3

\*Tested in air \*\*Tested on a 6cm plastic phantom