



The ISORAD-3™ is the only available cylindrical diode detector. The ISORAD-3™'s cylindrical design allows it to have nearly zero angular dependence along the axial axis, this makes it an ideal choice for tangential treatment cases where it is difficult to predict angle of incidence. ISORAD-3™'s are available in three photon energy ranges. Each energy range uses a different buildup material designed to give a reading at d_{max} , therefore, no additional buildup is required. ISORAD-3™ reproducibility error is $\pm 1\%$ for measurements >1 cGy.

Applications

- ISORAD-3™ diode detectors can be used in any situation where a surface mounted diode is needed to verify patient dose.
- ISORAD-3™ diode detectors are particularly useful for tangential treatments where the angle of incidence is difficult or impossible to predict.
- ISORAD-3™ diode detectors can be used in conjunction with some solid phantoms and the **IVD™** to verify complex treatment plans.

Energy Ranges – choosing the right ISORAD-3™

ISORAD-3™ detectors are offered in three photon energy ranges. A single energy compensated detector is also offered.

- a) P/N 1162000-0 1-4 MV
- b) P/N 1163000-0 6-12 MV
- c) P/N 1164000 15-25 MV

Accuracy

The ISORAD-3™ offers exceptional accuracy.

When tested in air or in a cylindrical phantom for all the beams:

Variation in Axial response is only $\pm 0.5\%$ from $0^\circ \sim 360^\circ$

When tested on top of 6 cm of solid or virtual water:

Variation in Axial response is still only $\pm 0.5\%$ from $-60^\circ \sim 60^\circ$ for 6 MV

Variation in Axial response is only $\pm 1.0\%$ from $-60^\circ \sim 60^\circ$ for 18 MV

Lifetime

As with any diode, ISORAD-3™ sensitivity will gradually change over time. This rate of change will depend on the energies used and the frequency of use. For normal use, plan on re-calibration once per year. Note that ISORAD-3™ life expectancy is not limited by radiation exposure – in fact the more an ISORAD-3™ is used the less its response characteristics will change. Life expectancy is an issue of proper handling and care. Broken coaxial connectors and cables are the most common cause of failure. When handled under normal stress loads, the ISORAD-3™ should be expected to last $> 1,000,000$ cGy.

Construction

ISORAD-3™ construction is an advanced third-generation design. Build-up consists of a material that is best suited for each energy range.

Features

ISORAD-3™ is the only available diode with **Cylindrical Symmetry**, angular corrections are not required.

Advanced n-type die design is accurate.

Compatibility with any diode based dosimetry system.

Very good reproducibility ($\pm 1\%$ for measurements >1 cGy)