



Linear 5ive MOSFET Array Dosimeter

The Linear 5ive MOSFET Array for Radiotherapy applications is ideal for LDR/HDR Brachytherapy and IMRT QA. It is compatible with the MOSFET 20, AutoSense, and the new mobileMOSFET. The Array contains of five isotropic, energy independent MOSFET dosimeters, at 2 cm intervals. The MOSFETs on the array can be read simultaneously, facilitating multiple dose measurements at several spatial points. The radio-opaque marker, located at the tip of the array, enables visualization under X-Ray imaging including CT and Fluoroscopy, allowing for 5 dosimetry points to be accurately located and easily compared to target doses.

The isotropic Linear 5ive Array, with excellent reproducibility and linearity, is the tool of choice for a variety of radiotherapy applications such as in-vivo dosimetry and Beam Quality Assurance.

The array can be used effectively for direct measurement of intracavitary dose profiles. During gynecological and prostate procedures, five dose points can be read directly from a computer, displaying the dose profile of the organ at risk in real-time. This is then compared to the planned target dose, allowing for immediate assessments of post-implant base and apex dose, as well as the dose to the organs at risk (eg. urethra, rectum, or bladder).

Two arrays crossing at the isocenter of a beam will provide quick 2D dose profiling with 10 simultaneous dose point readings for the X and Y-Axes. Since arrays are isotropic, multiple beams at different gantry angles, as in IMRT, can be accurately and quickly compared.

Available Models

- TN-252LA5 standard sensitivity (20~2000 cGy) for applications like HDR Brachytherapy 192Ir, IMRT QA, etc.
- TN-502LA5 high sensitivity (1~100 cGy) for applications like LDR Brachytherapy, Diagnostic X-rays, etc.
- TN-1002LA5 extremely high sensitivity (1~20 cGy) for applications like LDR Brachytherapy, Diagnostic X-rays, etc.

Features:

- ▶ Suitable for in-vivo dosimetry and Beam QA
- ▶ Use for both electron and photon modalities
- ▶ Isotropic response for 360° gantry angles
- ▶ Dose rate and energy independent
- ▶ Visible under CT or Fluoroscopy imaging
- ▶ Waterproof, resistant to body fluids and liquid sterilization
- ▶ Small size, lightweight, flexible, and rugged for extensive handling
- ▶ Compatible with the AutoSense, Mosfet 20 and mobileMOSFET systems
- ▶ Five dosimeters require a single calibration only

Specifications

- Dimensions: 1.5 mm wide, 46 cm long,
1.3 mm thick,
2 cm Inter-MOSFET spacing
- Active detection area: 0.04 mm²
- Dose rate dependence: none
- Temperature dependence: negligible
- Angular dependence: ±3% for 360°

SENSITIVITY

- TN-252 LA5, Ir-192
- Standard Sensitivity bias: 0.98 mV/cGy
- High Sensitivity bias: 1.38 mV/cGy
- TN-502 LA5, I-125
- Standard Sensitivity bias: 11.1 mV/cGy
- High Sensitivity bias: 15.2 mV/cGy
- TN-1002 LA5, I-125
- Standard Sensitivity bias: 25.8 mV/cGy
- High Sensitivity bias: 37.2 mV/cGy

REPRODUCIBILITY at Standard Sensitivity Bias:

- TN-252 LA5 20 cGy: <2%
- 200 cGy: <1%
- TN-502 LA5: <2%
- TN-1002 LA5 20 cGy
- 200 cGy: <1.5%