

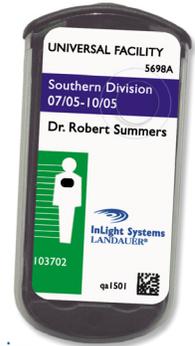
InLight® Systems Dosimeters



InLight dosimeters provide x, gamma, and beta radiation monitoring with optically stimulated luminescence (OSL) technology. OSL technology is the newest advancement in passive radiation protection dosimetry. Inlight dosimeters are engineered to be read out by an InLight reader.

InLight dosimeters are designed for the client with extensive data management capabilities who prefers to independently maintain data and issue dose reports. Dosimeters are provided for use with Landauer's dosimetry service that provides accredited processing and analysis, with dose results electronically transmitted to client; and as a direct sale in combination with InLight readers for a total turnkey solution enabling an in-house accredited dosimetry program.

For personnel, area/environmental, and emergency response monitoring, clinical dose measurements or any radiation assessment application.



Landauer Holder Design

Operational Advantages

Complete reanalysis capabilities

- Nondestructive read out allows for dose verification
- Dosimeter archiving made possible
- Track exposure over time—take incremental dose assessments

Dosimeter preparation eliminated

- No annealing
- No element correction factors required
- Engraved 2D bar code identifies dosimeter sensitivity

No fade

- Longer wear frequencies

Advanced Design

InLight dosimeters are built on an assembly of a case component with metal and plastic filters along with a four-positioned aluminum oxide detector slide component. Both the case and slide are uniquely bar coded with serial numbers for chain of custody and sensitivity identification. InLight dosimeters offer reanalysis capabilities, precision with a wide dynamic range of measurement, and long-term stability. The InLight Basic dosimeter consists of the principle assembly of the case and slide for use with a clear plastic holder.

The enhanced Landauer holder is designed to accommodate the optional CR-39 for neutron detection, the optional imaging component, client defined labels, and the principle assembly of the case and slide. The case component has an open window, with aluminum, copper, and plastic filters. The imaging component renders unique filter patterns to provide qualitative information about conditions during exposure. Dosimeter labels can be vertical or horizontal and offer numerous graphic and text fields definable by the client to meet the administrative needs of a radiation monitoring program.

The environmental dosimeter is designed to meet ANSI N545 Standard and HPS Draft Standard N13.29. The case has copper and plastic filters, and is sealed along with the slide component in a waterproof plastic pouch. Labels can be vertical or horizontal and offer numerous graphic and text fields definable by the client.

InLight Systems and OSL Technology

The InLight System measures radiation exposure with aluminum oxide detectors ($Al_2O_3:C$) read out by optically stimulated luminescence (OSL) technology. The read out process uses a light emitting diode (LED) array to stimulate the detectors, and the light emitted by the OSL material is detected and measured by a photomultiplier tube (PMT) using a high sensitivity photon counting system. The amount of light released during optical stimulation is directly proportional to the radiation dose and the intensity of stimulation light. A dose calculation algorithm is then applied to the measurement to determine exposure results.



Technical Specifications

- Linear from 10 μ Sv (1 mrem) to in excess of 10 Sv (1,000 rem)
- Energy range from 5 keV to 20 MeV
- Gamma, x-ray, beta minimal reporting: 50 μ Sv (5 mrem)
- Neutron detection with a CR-39, processed with Track Etch® technology minimal reporting:
 - Fast: 200 μ Sv (20 mrem)
 - Thermal/Intermediate: 100 μ Sv (10 mrem)