

# Saturn™ TLD Ring

*An innovative extremity dosimeter designed to maximize hygiene and comfort*



- **Flexible Fit for unequalled comfort**
- **A more precise reading - minimum reportable dose of 0.1 uSv**
- **A more hygienic ring**
- **Unique 2D Barcode for easy identification**



Landauer's ring dosimetry service provides comprehensive extremity radiation monitoring for workers required to manually manipulate or work in close proximity to radioactive materials and radiation producing equipment. The Saturn™ TLD Ring is a new extremity dosimeter introduced as an improved alternative to the standard TLD ring dosimeter.

The Saturn Ring measures exposure due to x, beta, and gamma radiation with thermoluminescent technology. The TLD is the highest efficiency dosimeter of 100% TL grade lithium fluoride, with no binder.

## Advanced Design

With an improved design, the TLD is safely encapsulated underneath the ring cap which is ultrasonically welded to the ring base. Under even the most rigorous working conditions, it's difficult to remove the ring cap from the ring base, so the chain of custody between the chip and the wearer is always maintained. The cap and TLD are independent of the ring base.

The identification on the cap is laser engraved preventing the print from smearing, peeling, or washing off. Rings can be worn in dry or wet working conditions. Smooth edges allow rings to slide and fit inside surgical gloves without risk of tearing.

## TLD Technology

During analysis in our laboratory, the TLD chip is heated causing it to become luminescent in proportion to the amount of radiation exposure. The luminescence is measured and a report of exposure results is generated. The glow curve of the readout permits a more conclusive evaluation of radiation exposure and can be retrieved and analyzed before the exposure report is generated if any anomaly appears.

The sum of the high energy beta, gamma and x radiation is reported as a shallow dose. If the ring dosimeter is exposed to radiation other than x-ray or gamma over 20 keV or high-energy beta, the value recorded may require further interpretation on your part. Landauer will furnish, on request, adjustment factors for any specified energy level.

## Analysis Assurance

Rings are scanned before processing using optical character recognition to accurately identify and track each dosimeter from receipt to report. The TLD is read automatically by laser, and the process is overseen by skilled technicians.

# Saturn™ TLD Ring



## Display Information

Information on the cover includes:

- the worker's name
- ring serial number
- the begin wear date
- which hand the ring is to be worn
- exchange frequency
- 2D barcode for scanning

## Configuration Options

Rings are available in two adjustable sizes small/medium and large to comfortably fit any user. The ring base colors are completely configurable down to the individual level and available colors are blue, green, and orange.

## TECHNICAL SPECIFICATIONS

Highest efficiency dosimeter of 100% TL grade lithium fluoride, with no binder - one TLD per ring.

<b>Energy Range:</b>	Photon (x or gamma ray) - greater than 15 keV. Beta particle expressed as average energy - greater than 200 keV.
<b>Dose Measurement Range:</b>	Photon (x or gamma ray) - 10 mrem to 1,000 rem (.10 uSV to 10 SV). Beta particle - 10 mrem to 1,000 rem (.10 uSV to 10 SV). Detection outside these ranges can be requested.
<b>Accreditation</b>	NVLAP accredited in extremity dosimetry categories I to VII, NVLAP Lab Code 100518-0.

## Sterilization and Cleaning

There are different methods of disinfection for the Saturn Ring, please contact your Regional Sales Manager for more information regarding these suggestions. These suggestions are not definitive and should be validated by your facility.

## Control Dosimeters

Control ring dosimeters can be distinguished by the yellow cover and red base. Control ring dosimeters should not be worn.



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