



The International Commission on Radiological Protection (ICRP) has recommended to lower the dose to the lens of the eye and the Nuclear Regulatory Commission (NRC) has proposed modifications to 10CFR20.

A Dosimeter Designed For Lens of Eye Dose

Ergonomic, light and small, the LANDAUER VISION dosimeter does not affect the user's activity and view. It is made from a plastic resistant to twisting. The dosimeter is flexible and can be placed close to the eye, providing a more accurate measurement of the lens of eye dose.

- **Ergonomic** – lets the user wear it without any interference with field of vision
- **Small and Compact** – allows wearing near lens of eye for worker monitoring
- **Flexible** – makes it possible to install in front or behind, in horizontal or vertical orientation on most Personal Protective Equipment (PPE)
- **Laser etched wearer information** – provides clear user identification and wear period
- **Sensor protected inside an ultrasonically sealed cap** – enables easy sterilization by cold wiping or brushing
- **H_p(3) individual dose equivalent** – reports consistent and accurate lens of eye dose data

Suitable for Personnel Involved In:

- Interventional radiology (e.g. fluoroscopy)
- Diagnostic procedures
- Other medical procedures resulting in prolonged radiation exposure to lens of eye
- Nuclear medicine
- Nuclear industry (e.g. planned or emergency maintenance at nuclear power plants)

Laser-etched Identification

The cap with titanium oxide particles is laser etched for permanent marking and identification. This also allows for easy cleaning.

Measurement Method

The LANDAUER VISION dosimeter is composed of a polyamide holder with a cap, which contains a lithium fluoride thermoluminescent dosimeter (TLD) chip. This radiation dose detector chip is placed inside a cavity on the cap which is sealed by ultrasound welding. The information is laser marked on the cap making it nonerasable.

When the chip is heated, visible light is emitted in proportion to the exposure of ionizing radiation.

Compliance With Standards

IEC 62387-1:2012 - Passive integrating dosimetry systems for personal and environmental monitoring of photons and beta radiation - Radiation protection instrumentation.

Laboratory Qualifications

- Participation in national and international inter-comparisons
- Dosimeter characterization carried out by an independent reference laboratory: Henri Becquerel French National Laboratory (LNHB) - CEA

Technical Performance

Types of radiation measured	Results of the LANDAUER VISION dosimeter	
	Photons (X-rays or Gamma Rays)	Beta Particles
Personal dose equivalent	$H_p(3)$	$H_p(3)$
Dose range	from 10 mrem (0.10 mSv) to 1000 rem (10 Sv)	from 10 mrem (0.10 mSv) to 1000 rem (10 Sv)
Minimum reporting value	10 mrem (0.10 mSv)	10 mrem (0.10 mSv)
Linearity response	from 10 mrem (0.10 mSv) to 1000 rem (10 Sv) Standard deviation < 9 %	from 10 mrem (0.10 mSv) to 1000 rem (10 Sv) Standard deviation < 9 %
Energy response (average energy)	from 24 keV to 1.25 MeV	from 250 keV (E_{ave}) to 2.3 MeV (E_{max})
Angular response	$\pm 60^\circ$ from 24 keV to 1.25 MeV	$\pm 60^\circ$ from 250 keV (E_{ave}) to 2.3 MeV (E_{max})

LANDAUER VISION can be applied to glasses, visors and caps. Self-gripping pads ensure a secure fit.

It can be worn with or without PPE. Non-lead glasses without PPE are optional.



Rotating cap enables front or side orientation



Lead glasses



Lead mask protection



Non-lead glasses



Caps

Environmental Resistance Characteristics

Operating and storage temperature	No effect on detector sensitivity up to 104°F (40°C)
Humidity	No effect on detector up to 90% humidity
Exposure to light	No effect on detector

General Characteristics

Radiation measured	Photons (Beta, X-rays and Gamma Rays)
Detector	Single element, one TLD

Cleaning

Sterilize the LANDAUER VISION dosimeter by cold wiping with one of the following disinfectants:

1) Cidex®	2) Betadine®
-----------	--------------

We do not recommend heat sterilization with temperatures that exceed 104°F (40 °C)

Learn More

Visit landauer.com/vision-eye-dosimeter