DOSIMETRY
LAB EQUIPMENT
All inclusive solution

LANDAUER® offers a complete dosimetry system covering all manufacturing and processing for dosimeters with a wide range of equipment such as: badges, readers, annealers, software...

INLIGHT®
Whole body dosimeter

ONYX®
Ring dosimeter

TOPAZ®
LoE dosimeter

OSLR
dosimeters
readers

IRAS
software

Equipment adapted to your environment and your needs

LANDAUER equipment is used for a large number of applications:

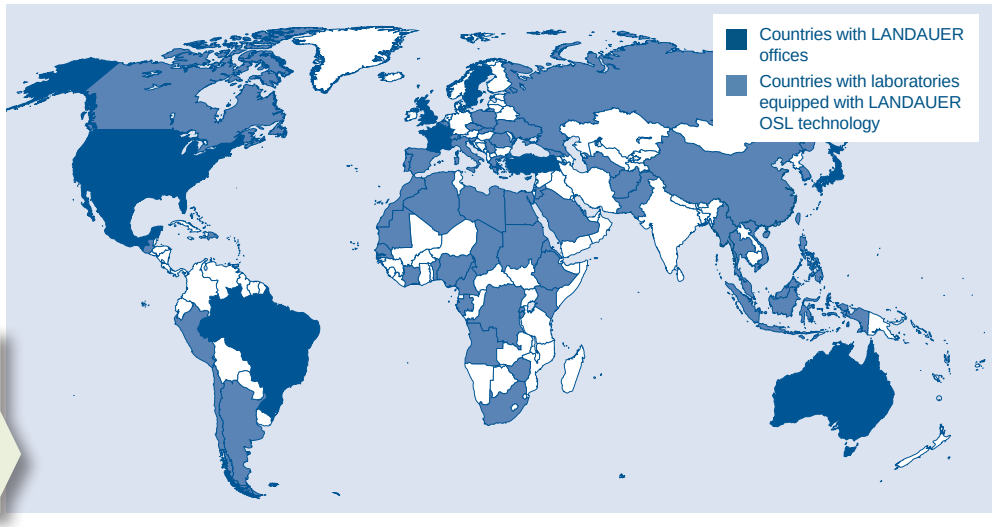
- Occupational dosimetry
- Area monitoring
- Environmental monitoring
- On-site analysis
- Emergency response monitoring.

Our dosimeters monitor X, gamma, beta and neutron radiations and together with OSLR reader reports $H_p(10)$, $H_p(0,07)$, $H_p(3)$ and $H^*(10)$ dose.

The dosimetry laboratory product portfolio can be adapted for any organization size or type including nuclear power stations, laboratories and hospitals.

No one knows more about dosimetry equipment than LANDAUER

Because we use it for our own dosimetry program and provide dosimetry services to about 2 million individuals globally, we understand your need better than any other manufacturer.



More than 200 dosimetry laboratories in 60 countries operating with LANDAUER technology

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DOSIMETRY LAB EQUIPMENT

OSL TECHNOLOGY

Based on Al_2O_3:C, Optically Stimulated Luminescence (OSL), our technology is used exclusively worldwide for radiation monitoring. The detectors material is manufactured by LANDAUER according to the highest standard specifications for over 30 years. OSL features and benefits are:

- **Fully optical, no heating**: the readout process uses a light-emitting diode (LED) to stimulate the detectors and the light emitted by the OSL material is detected and measured by a photomultiplier tube 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.
- **Dose algorithms meet several accreditation bodies requirement:** US National Voluntary Laboratory Accreditation Program, and Department of Energy Laboratory accreditation Program accreditation requirements.
- **High sensitivity minimizing the stimulation**: the optical stimulation keeps more than 99 % of the information. The non destructive readout process of OSL Al_2O_3:C detector enables dosimeters to be archived and allows multiple reading in case of dose investigation. The detectors can be reused for several years.
- **Stable sensitivity over time**: OSL dosimeters sensitivity is defined forever. The stability of the material under any environment condition makes this sensitivity unchanged during all dosimeter's life.
- **No calibration is required**: the sensitivity of dosimeters is determined during the manufacturing process by an ISO/IEC 17025 accredited laboratory. The sensitivity value engraved on the detector is automatically considered during the reading process.
- **No fading**: INLIGHT dosimeters make extended-wear possible as well as ensuring the dosimeters may be archived and reread without corrections for fade.

COMPLIANCE WITH STANDARDS

EN 62387:2016 - Passive integrating dosimetry systems for personal and environmental monitoring of photons and beta radiation - Radiation protection instrumentation.

Characterization of dosimeters carried out by independent referenced laboratories like the French National Laboratory Henri Becquerel (LNHB) - CEA.

A large amount of laboratories worldwide using Landauer dosimetry equipment are accredited according to IS0/IEC 17025.

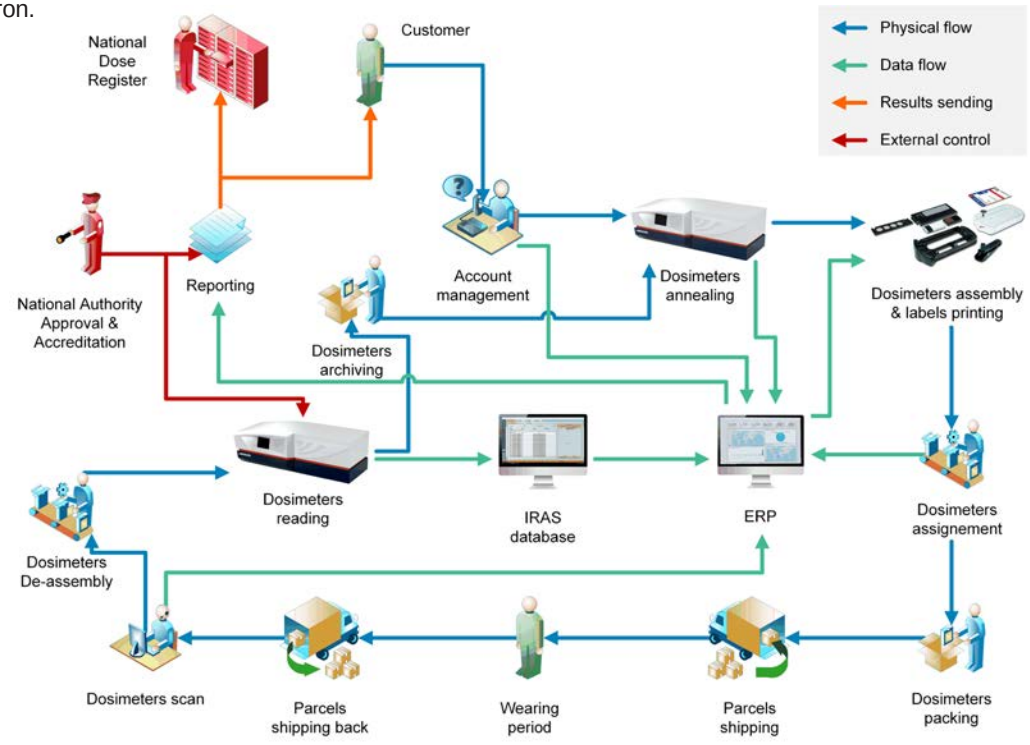
SIMPLIFIED ACCREDITATION PROCESS

The system is scalable, and can be configured to complement your current dosimetry program, or enable maintenance of your own in-house accredited dosimetry program.

With our solution and our support, you can quickly and easily get ISO/IEC 17025 accreditation.

LABORATORY EQUIPMENT "À LA CARTE"

LANDAUER offers a wide range of options to design a dosimetry program customized to your requirements. For example, your organization can choose to process its own dosimeters, or entrust all or part of the dosimetry process to LANDAUER such as extremity, lens of eye or neutron.



OSLR READERS

OSLR readers are designed for use with INLIGHT dosimeters for whole body, environmental and emergency response monitoring, ONYX dosimeters for extremities and TOPAZ for lens of eye.

All-in-one dosimeter reader

The OSLR reader works with the LANDAUER complete dosimetry system, a solution for onsite dosimetry using LANDAUER OSL technology. OSLR performs both reading and annealing processes with very high throughput.

Quality, simply and with reliability

LANDAUER OSLR reader includes an external PC with menu-driven IRAS software. The software automatically captures bar-coded dosimeter serial numbers, which facilitates chain of custody. The reader and the software provide control over reader setup, analysis, database maintenance.

Quality Control (QC) procedures and data recording, enabling dosimeter readout, recording and the monitoring of reader performance - providing you rapid, accurate radiation assessment that can help improve the efficiency and productivity of your program.

High quality components are used for durability and to insure repetitive and long term performances. All important components are automatically and periodically checked with built in QC procedures.

Traditional technics with internal radioactive source or external irradiator are no longer required. The OSLR reader uses QC delivered samples, internal LED and photodiode to perform all QC tests.

OTHER FEATURES AND BENEFITS:

- **No heating parameters to control**
- **No gas supply**
- **Fast reader throughput**
- **Simple calibration process**
- **Remote diagnostic and maintenance**
- **Dose assessment algorithm embedded**
- **Compatible with Windows 11**

Scalability

Four OLSR readers are proposed to adapt to the number of workers being monitored in your lab. Upgrading loader capacity during product life time is designed to be simple.

OSLR1 Manual Reader	OSLR50 Automatic Reader	OSLR250 Automatic Reader	OSLR700 Automatic Reader
			
Desk-top model	Desk-top model	Desk-top model	Desk-top model
Manual	300 dosimeters / hour	300 dosimeters / hour	300 dosimeters / hour
1 drawer / 1 dosimeter	1 magazine / 50 dosimeters	Up to 5 magazines / 250 dosimeters	Up to 14 magazines / 700 dosimeters
620×452×352 mm / 24.4×17.8×13.9 inch	1011×452×352 mm / 39.8×17.8×13.9 inch	1100×452×352 mm / 43.3×17.8×13.9 inch	1186×452×352 mm / 46.7×17.8×13.9 inch
36 kg / 79 lb	50 kg / 110 lb	73 kg / 162 lb	85 kg / 187 lb
100 - 240 V / 47 - 63 Hz, 2 A			
Operating Temperatures: +10 °C to +35 °C			
Storage temperature: -10°C à + 60 °C, 30-70% Non Condensing			
Indoor use only			

ACCESSORIES AND SUPPORT

In addition to OSLR readers and annealers, LANDAUER provides accessories and support for organisations that operate their own in-house service or other applications:

- Barcode readers
- Manual and automatic pin cutters
- Training and support

LANDAUER DOSIMETERS

Our dosimeters are used for occupational, area/environmental, emergency response and extremity monitoring, in any kind of facilities.

- **Robust, compact and lightweight dosimeters**
- **Complete range of dosimeters** (wholebody, extremities, lens of eye and ambiant)
- **A new detection system**
  LANDAUER Dosimeters are based on a new generation of detectors and dose equivalent estimation algorithms. With LANDAUER, you get a more accurate estimation of the dose equivalent at very low doses.
- **Higher performances**
  Our dosimeters comply with the EN 62387:2016 standard. Its characterization by an independent laboratory shows metrological performances higher than the standard requirements.

GN detector
for INLIGHT

GA detector
for INLIGHT

INLIGHT characteristics

	Result of the INLIGHT dosimeter		
	Whole body and wrist		Area
Type of measured radiation	Photons	Beta	Photons
Personal dose equivalent	$H_p(10)$ and $H_p(0.07)$	$H_p(0.07)$	$H^*(10)$
Dose range	**0.05 mSv to 10 Sv - Standard deviation < 5 %**		
Energy response (mean energy)	$H_p(10)$: 15 keV to 6 MeV $H_p(0,07)$: 15 keV to 1.33 MeV	0.24 to 0.8 MeV (E_{mean})	24 keV to 1.33 MeV
Angular response (horizontal and vertical angles)	$H_p(10)$: ± 60° from 15 keV to 6 MeV $H_p(0,07)$: ± 60° from 15 keV to 1.33 MeV	± 45° from 0.24 to 0.8 MeV (E_{mean})	± 60° from 24 keV to 1.33 MeV
Fading	< 1.5 % / month		

ONYX characteristics

Energy range
- **Photons**: ± 60° incidence angle from 15 keV to 1.33 MeV
- **Beta**: ± 60° incidence angle (E_{mean} = 0.8 MeV; $^{90}Sr/^{90}Y$)

Dose range: 100 µSv to 10 Sv

Personal dose equivalent: $H_p(0.07)$

Types of radiation measured: Photons (X- and gamma rays) and beta

ONYX®
Ring dosimeter


TOPAZ®
LoE dosimeter

TOPAZ characteristics

Energy range
- **Photons**: ± 60° incidence angle from 16 keV to 1.33 MeV

Dose range: 100 µSv - 10 Sv

Personal dose equivalent: $H_p(3)$

Types of radiation measured: Photons (X- and gamma rays) and beta

MP7 OSL sensor with OSLR adapter
for ONYX and TOPAZ

Download INLIGHT, ONYX and TOPAZ technical leaflets on www.LANDAUER.eu

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