

InLight® Complete Dosimetry System Solution

Auto 500 Dosimetry Reader

The Auto 500 is designed for heavy, high-speed loads. It uses aluminum oxide (Al₂O₃) detectors to measure radiation exposure and reads the measurement with optically stimulated luminescence (OSL) technology. These readers are ideal for any radiation assessment application.



The InLight Dosimetry System is an example of LANDAUER Fleximetry, the industry's most flexible dosimetry program. This flexibility lets you choose from the options below that best meet your organizational requirements.



Overview

The Auto 500 reader works with the InLight Complete Dosimetry System Solution, a solution for onsite dosimetry using LANDAUER's optically stimulated luminescence (OSL) technology. The system is scalable, and can be configured to complement your current dosimetry program, or can enable you to maintain your own in-house accredited dosimetry program.

Auto 500 readers are exclusively for use with InLight dosimeters for whole body, environmental and emergency response monitoring. InLight dosimeters measure radiation exposure with aluminum oxide detectors ($\text{Al}_2\text{O}_3:\text{C}$) and 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. The nondestructive OSL read-out process of $\text{Al}_2\text{O}_3:\text{C}$ enables reanalysis for dose verification, and intermittent analysis while maintaining total dose accumulation. Dose algorithms meet NVLAP and DOELAP accreditation requirements.

The Auto 500 reader includes an external PC with menu-driven InLight reader software. The software automatically captures bar-coded dosimeter serial numbers, which facilitates chain of custody. The Auto 500 and the software provide control over reader setup, analysis, database maintenance, QC procedures and data recording, enabling dosimeter read-out, recording and the monitoring of reader performance—and providing you rapid, accurate radiation assessment that can help improve the efficiency and productivity of your program.

Features and benefits

- Appropriate for large laboratories (>100,000 participants; significant automation)
- Floor model
- High throughput (readout in 12–13 seconds); 280 badges per hour
- Requires an external PC
- Non-destructive readout allows for reuse and reanalysis
- Simple calibration process
- Reliable, uncomplicated, low-maintenance equipment
- No heating parameters to maintain—thermal quenching eliminated; false light output due to artifacts eliminated
- No gas required
- High environmental stability
- Effective replacement for older radiation measuring technologies (e.g., TLD)

Technical specifications

Operation:	Al_2O_3 with OSL; high-sensitivity photon counting system and dose calculation algorithm
Speed:	Readout in 12–13 sec.
Capacity:	10 magazines, 50 dosimeters each, 500 dosimeters per load
Energy dependence:	Within $\pm 10\%$ over diagnostic energy range; within $\pm 1\%$ for photons and electrons from 5 MeV–20 MeV (please confirm)
LED array:	36
Size:	23.5"Hx19.5"Wx33.5"D (33"x31"x43" with crate)
Power requirements:	120–240V
Weight:	125 lb. (175 lb. with crate)
Bar code input:	Internal optical reader

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