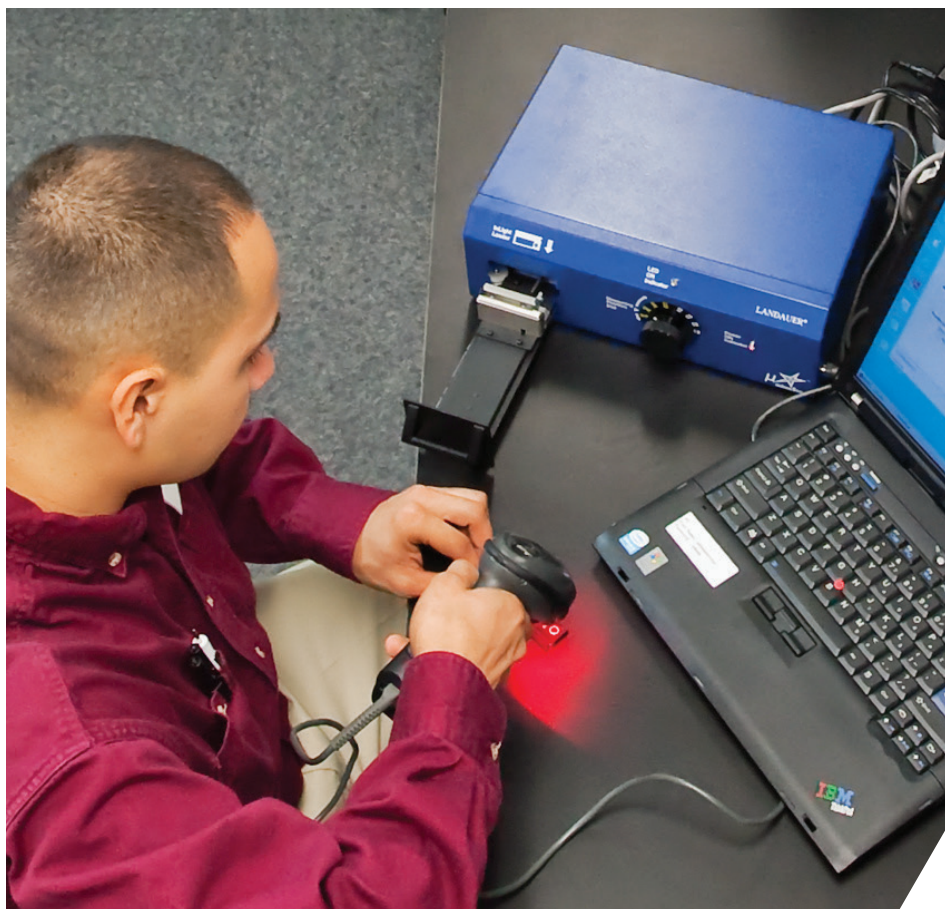


## Special Services nanoDot™ InLight® nanoDot™ Dosimeter



Special Services uses nanoDot™ dosimeters as dosimeter type X for all Special Services applications. The nanoDot™ uses Optically Stimulated Luminescence (OSL) Technology - the same technology used in Luxel and InLight dosimeters. The nanoDot™ can be used for medical imaging, radiation oncology, or any single point radiation assessment application, and is currently being used for a variety of applications throughout the world.

Special Services offers the following calibration options:

### Reader Calibration Options

- Standard – Choose either an 80 kVp (2.9mm Al HVL) on-phantom calibration, or a Cs-137 in air calibration. The phantom is a 30 cm x 30 cm x 15 cm PMMA whole body phantom. Calibration dose is Hp (0.07) or entrance skin dose for 80 kVp, and Dmax for Cs-137.
- Non-standard – Additional calibration standards are available for a charge. See table on the back for non-standard calibration options.



### Complete Reanalysis

The  $Al_2O_3:C$  detector can be reanalyzed numerous times to confirm the accuracy of a radiation dose measurement.

**Front** of nanoDot™ dosimeter with alphanumeric sensitivity code and serial number.



**Back** of open nanoDot™ dosimeter with 2D bar code that includes sensitivity code and serial number (open dot shown for information only – do not open or tamper with dosimeter)



Each nanoDot™ dosimeter is shipped enclosed in a plastic packet.

**Note:** Special Services dosimeters must be returned separately from any personnel dosimeters. The account number and the green strip on the identification label alert our receiving department that the dosimeters require special processing.

Category	Radiation Environment	Conditions
Diagnostic	Fluoro (Standard Calibration)	80 kVp, 2.9mm AI HVL
	CT	120 kVp, 8.3mm AI HVL
	Mammography	20 kVp, 0.36mm AI HVL
	Dental	70 kVp, 2.4mm AI HVL
Therapy	6-12 MV Photons	With buildup: Dmax Without buildup: Entrance skin dose Relative to Cs-137
	6-12 MeV Electrons	
	15-18 MV Photons	
	15-18 MeV Electrons	
	Ir-192	
Irradiator <sup>1</sup>	Co-60	
	X-Ray (Low)	80 kVp, 2.9mm AI HVL
	X-Ray (High)	120 kVp, 8.3mm AI HVL
	Cs-137 (Standard Calibration)	Not applicable
	Co-60	Relative to Cs-137

<sup>1</sup> Irradiator Category may be reported as Rad Silicon upon request.

- Custom - Custom calibration sets for a radiation environment not identified above can be built by a customer using screened nanoDots™ (see below) purchased as part of this service.
  - Single-Point Set – A total of 6 screened dosimeters, 3 exposed by the customer to a known dose, and 3 blanks LANDAUER's® laboratory microStar® reader will be calibrated to this single point, and the dose will be calculated using this reference.
  - Four-Point Set – A total of 15 screened dosimeters, 12 exposed by the customer to a range of known doses, and 3 blanks. The low and high dose settings of LANDAUER's laboratory microStar® reader will be calibrated using these four points. Dose levels are determined after consultation with Special Services and a Subject Matter Expert (Health or Medical Physicist at LANDAUER).

Custom calibration dosimeters are retained by Special Services for up to 6 months or 10 uses, whichever comes first. During this retention period, custom calibrations are used in place of the standard calibration.

### Screened nanoDots™

Similar to TLDs, the nanoDot™ dosimeter uses a "batch sensitivity" to calculate the dose from its response. Dosimeter screening details the reproducibility of the dosimeter and identifies which dosimeters have a tighter range of measurement accuracy.

- Standard nanoDot™ dosimeter - Measurement accuracy is +/- 10% (k=2)
- Screened nanoDot™ dosimeter - Measurement accuracy is +/- 5% (k=2)

### Special Services Dosimetry Service Rates - nanoDot™ dosimeter

Service includes processing and reporting of results via email. Custom packaging is available at an additional cost. Prices exclude shipping and handling.

nanoDot (Price per dot)	Calibration		
	Standard	Non-Standard	Custom
Unscreened	\$26.15	\$28.90	...
Screened	\$34.45	\$37.20	\$37.20

Custom Calibration (Price per set)	Reference Point	
	Single	Multi
	\$115	\$460

To learn more, contact LANDAUER Special Services at **(708) 441-8441** or [specialservices@landauer.com](mailto:specialservices@landauer.com)