



TLD dosimeter

for RE-2000 TLD Readers

- **personnel dosimetry**
 - **extremity dosimetry**
 - **environmental monitoring**
 - **medical dosimetry applications**
 - **flexible badge construction**
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RADOS Thermoluminescence Dosimetry system covers a wide range of applications:

RADOS TLD System includes all the components needed for easy and accurate Personal Dosimetry. Easy adaption of high sensitive TL-materials and low noise photon counting measurement method makes the RADOS system extremely suitable for environmental dosimetry.

Ingenious dosimeter card construction and high measurement range bring the advantages of an automatic reader to clinical dosimetry applications.

Flexible badge construction

The RADOS badge design allows the exchange of filter materials, filter thickness and TL-materials. This is both to satisfy the needs of different applications and also to offer the possibility of applying new TL-materials easy.

The standard TLD dosimeter card consists of a coded slide placed in a slide holder, with or without filters, and carried inside the dosimeter cover.

The slide has four positions for the detectors (pellets, chips or rods). The detectors are not attached to the slide positions and any required number of positions up to four can be used. This makes it possible to handle the elements separately (e.g. extremity or clinical dosimetry).

MTS (LiF: Mg, Ti) Thermoluminescent pellets

Form	solid disc 4.5 mm diameter, of selected thickness
Effective atomic number Z	8.2
Density [g.cm-3]	2.5
TL emission spectrum [nm]	400
Relative sensitivity to TLD-100	1.5
Main peak temperature [°C]	210
Zero dose reading [mGy]	15
Detection threshold [mGy]	10
Linearity range [Gy]	5×10 ⁻⁵ - 5
Repeatability	< 2%
Photon energy dependence 30 keV - 1.3 MeV	< 30 %
Batch homogeneity [1 SD]	< 5 %
Thermal fading [% at room temperature]	< 5% / yr
Fluorescent light effect on fading and zero reading	negligible at laboratory light intensity
Reusability	unlimited
Dose rate influence	independent



card without filter



cards with one filter

MCP (LiF: Mg, Cu, P) Thermoluminescent pellets

Form	solid disc 4.5 mm diameter, 0,9 mm thickness
Effective atomic number Z	8.2
Density [g.cm-3]	2.5
TL emission spectrum [nm]	385
Relative sensitivity to TLD-100	40
Main peak temperature [°C]	210
Zero dose reading [nGy]	100
Detection threshold [nGy]	50
Linearity range [Gy]	10 ⁻⁷ ÷ 1
Repeatability	< 2%
Photon energy dependence 30 keV - 1.3 MeV	< 20 %
Batch homogeneity [1 SD]	< 5 %
Thermal fading [% at room temperature]	< 5% / yr
Fluorescent light effect on fading and zero reading	negligible at laboratory light intensity
Reusability	unlimited
Dose rate influence	Independent

The slide holders of the standard dosimeters are supplied in 4 different colours. The filter positions (front and back of the holder) may be equipped with up to 1 mm thick Al filters, or it is possible for the customer to insert filters of their own choice. The fourth detector position is an open window position for measuring shallow (skin) dose produced by betas and low energy photons.

In the personal dosimetry the dosimeters are kept in a plastic cover. The number of the slide is visible when the slide is in the holder and the dosimeter card in the plastic cover. On the backside of the cover there is space for a name tag. The name tag and a barcoded number of the slide are visible through the back part.



dosimetry cover

128251D

Lamanon - France
 Turku - Finland
 Hamburg - Germany
 Munich - Germany
 Smyrna (GA) - USA
 synodys Passive Dosimetry
 Germany

Tel +33 (0)4 90 59 59 59
 Tel +358 2 4684 600
 Tel +49 40 85193-0
 Tel +49 (0) 89 51 51 30
 Tel +001 (770) 432 2744
 Tel +49 (0) 2196 889803

Representative address:

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