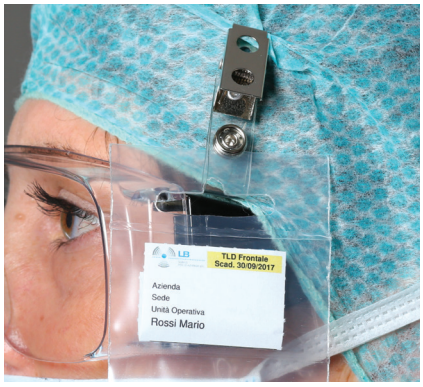
Servizi per le Aziende srl
Radioprotezione
Fisica Sanitaria
Dosimetria

TL DOSIMETRY

FOR **EYE LENS**

The dosimeter for eye lens can be, **at user's choice**, of three different types.



THE **FIRST**

obtained by inserting a thermoluminescent element LiF (Mg, Cu, P) GR200A inside a whole body dosimeter, in filter position for 1 mm ABS.
The dosimeter **is worn with the use of clips on the surgical cap.**

THE **SECOND**

obtained by inserting a thermoluminescent element LiF (Mg, Cu, P) GR200A inside a polyethylene shell (about 12 mg/cm2), dimension 1 x 10 cm2.
The dosimeter **is applied on temple by the anti-X glasses.**

THE **THIRD**

obtained by inserting a thermoluminescent element LiF (Mg, Cu, P) GR200A inside of polyethylene shell (about 12 mg/cm2) of dimension 2.5 x 6 cm2.
The dosimeter **is applied on the forehead by double-sided tape.**

There isn't a specific unique calibration accepted by the International Scientific Community, but a reliable valuation can be obtained **by the interpolation** of coefficients Hp (0.07) and Hp (10). The absence of a specific calibration is also included in the error calculation.

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LAB N. 1644

PERFORMANCE OF A TLD DOSIMETER FOR EYE LENS

Measured quantities	Hp (0,3) Hp (0,07)	
Detector (Number and Type)	1 element LiF (Mg, Cu, P) GR-200A	
Filtration	1 mm ABS (about 20 mg/cm^2) for determination of the size Hp (3)	
Result range in energy	Photon: 20 keV - 3 MeV e^-: 1 MeV < E_{media} < 3 MeV	
Dependency of response relative to Hp (0,3) in the range of energy	< ± 25%	
Dependency of response relative to Hp (0,07) in the range of energy	< ± 25%	
Dependency of response relative to Hp (0,3) according to incidence angle (max 60°)	< ± 15%	
Dependency of response relative to Hp (0,07) according to incidence angle (max 60°)	< ± 15%	
Minimum Detectable Dose (intended as Critical Level with 95% assurance) in routine procedures	Not bigger of 20 microSv	
Minimum Detectable Dose (intended as Detection Limit with 95% assurance) in routine procedures	Not bigger of 50 microSv	
Error in dose valuation	0,05 mSv ≤ H < 0,40 mSv	40% Hp (0,3) 40% Hp (0,07)
	0,40 mSv ≤ H < 0,85 mSv	35% Hp (0,3) 35% Hp (0,07)
	0,85 mSv ≤ H	30% Hp (0,3) 30% Hp (0,07)
Additional information	**Dosimeter symmetrical.** Dosimeter sterilizable, according to procedures established by the customer, with the only precaution not to use temperatures above 60°C.	