Fields of application:
- Interventional radiology
- Nuclear medicine
- Medical diagnostics
- Nuclear Industry

EYE-D™
Eye lens TLD dosemeter - the best solution for monitoring of $H_{p}(3)$ doses.

Simple, precise, reliable, tailored to your needs
**EYE-D™ – the best solution for eye lens dosimetry**

There is evidence that eye lens doses are high in interventional radiology and cases of cataracts have been reported in recent years. Individual dosemeters carried on the trunk are unable to correctly measure the eye lens doses. EYE-D™ allows for precise measurements of radiation doses to eye lens, also in case when protective glasses are used.

In EYE-D™ the proven and reliable high-sensitive thermoluminescence detectors MCP-N (LiF:Mg,Cu,P) are applied, which assure the good energy – response and broad dose range between at least 10 μSv and 10 Sv.

Calibration and testing of dosemeters were performed on cylindrical water phantom 20 cm diameter, 20 cm height with 0.5 cm PMMA walls.

The EYE-D™ dosemeter was developed, optimized and tested within the ORAMED (Optimization of RAdiation protection for MEDical staff) project funded by EU-EURATOM within the 7th Framework Programme http://oramed-fp7.eu/

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**Main features of EYE-D™ dosemeters**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLD detector</td>
<td>MCP-N (LiF:Mg,Cu,P)</td>
</tr>
<tr>
<td>Size of TL detector</td>
<td>4.5 mm diameter or 3.2 mm x 3.2 mm, 0.9 mm thick</td>
</tr>
<tr>
<td>Dose range</td>
<td>10 μSv – 10 Sv</td>
</tr>
<tr>
<td>Photon energy dependence</td>
<td>30 keV - 1.3 MeV, &lt; 20%</td>
</tr>
<tr>
<td>Light effect on signal and zero reading</td>
<td>negligible</td>
</tr>
<tr>
<td>Waterproof</td>
<td>yes</td>
</tr>
<tr>
<td>Sterilization</td>
<td>chemical (gas or liquid)</td>
</tr>
</tbody>
</table>

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**Energy response of EYE-D™ for photon radiation**

Calculated response:
- ISO narrow N-series spectra
- IEC RQR spectra

Measured response:
- RQR-4, RQR-7, RQR-9 spectra
- ISO N-30, N-60, N-120 spectra
- Cs-137

**Angular response of EYE-D™ for broad RQR X-rays spectra**

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