

#### 11. Data exchange

Any data exchange with your dosimetry service, such as changing the assignment of persons, can be done in electronic form. On request, we would be pleased to inform you about our online services offered for this purpose, DosiNet and DosiCon. **awst-online@mirion.com** 

#### 12. Dosemeter ID numbers/codes

The Dosemeter ID number is printed in plain text and as 2D-Code on the Dosemeter cover.

- Dosemeter ID: 7 characters, starting with a "V" followed by 6 numbers
- 2D-Code: commercial data matrix code, security feature ECC200

The codes were introduced for our internal purposes. We reserve the right to make necessary changes to the code types. Please take this into account when considering the use of these codes.

#### 13. Ready to use Dosemeter



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# EYE LENS DOSEMETER TECHNICAL DATA

DOSIMETRY SERVICE (AWST)



# EYE LENS DOSEMETER AWST-OSL-AD 01

# **1.** General information

Field of application	Eye lens Dosemeter to determine the personal dose equivalent $H_p(3)$ due to photon radiation for individual eye lens monitoring
Dosemeter type	Eye lens Dosemeter of type AWST-OSL-AD 01 using BeOSL technology with ceramic BeO-detector (Beryllium oxide)
Accreditation	PTB Certification DE-20-M-PTB-0048
Calibration	Individual for each detector
Measurement method	Radiation-induced optically stimulated luminescence (OSL), measurement of luminescence light
Dose determination	Mathematically from the detector lumi- nescence signal, a zero measurement of the detector performed before exposure and the individual calibration factor
Detector material	Non-hazardous ceramic BeO detectors (no danger of inhalation of beryllium particles)

#### 2. Dosemeter components

Eye lens Dosemeter badge, consisting of a numbered Dosemeter cover made of black plastic and an BeO detector of the type ezClip.

At the site of the dosimetry service (Mirion Technologies - AWST): Single-Detector-Assembler (SDA) OSL evaluation systems of type BeOSL



#### 3. Instruction for use

- Measurement location: on the head, as close as possible to the eye facing the radiation source (e.g. scattered radiation of the patient); ideally behind shielding (e.g. radiation protection glasses, stationary shielding)
- Wearing method:

by means of a headband adapter, in special radiation protection glasses, as well as by means of an adhesive adapter inside any radiation protection equipment or outside it with a clip



- Attachment: using a socket wrench to attach to the corresponding adapter
- Assignment to person: by the Dosemeter ID on the front of the eye lens Dosemeter
- Monitoring period: usually one month, maximum 3 months
- Cleaning: the Dosemeter is waterproof and can be disinfected

#### 4. Image of the Dosemeter



#### 5. Schematic sketch of the Dosemeter



#### 6. Dosimetric data

Type of radiation	Photon radiation
Measured quantity	Personal dose equivalent $H_{\rm p}(3)$ in mSv
Dose range	0.1 mSv to 1 Sv
Preferred direction for radiation incidence	Perpendicular to the front of the Dosemeter
Reference point of the Dosemeter	Geometric centre of the Dosemeter
Influence of beta radiation	The Dosemeter should only be worn in photon fields or behind radiation protection glasses in case of beta fields. The response to direct beta radiation is 2.53 for Sr-90 at 0°
Influence of neutron radiation	negligible

#### 7. Dimensions and weights

**Dimension (mm):** 17 x 14.5 x 3.5

#### Weights:

Eye lens Dosemeter: 0.4 g Incl. headband and headband adapter: 8.0 g

## 8. Nominal operating ranges

Photon energy	16 keV to 7 MeV
Radiation incidence direction	0° to ±60°
Ambient temperature	-10°C to 40°C
Relative humidity	10% to 90% (max. 30 g/cm <sup>3</sup> $H_2O$ )
Sunlight exposure	0 to 1000 W/m <sup>2</sup>
Mechanical shock, drop height	1m
Monitoring period	maximum of 3 months

# 9. Energy and angular response



## **10. Quality assurance**

Accreditation according to ISO 17025/ PTB certification/ International intercomparisons