



RADIATION PROTECTION DOSIMETRY

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The team of our business unit „Radiation Protection Dosimetry“ is committed to service, research and development concerning dosimetry, radiation hardness assurance and aviation dosimetry. We offer a comprehensive range of products and services for applications of ionizing radiation in medicine, industry and research.

STANDARDS AND CALIBRATION LABORATORY

In its function as a radiation standards laboratory, the radiation dosimetry laboratory is accredited to handle the following radiation dosimeter types:

- therapy dosimeters
- diagnostic dosimeters
- dosimeters for constancy tests
- personal and area dosimeters

We perform official verifications and calibrations pursuant to our scope of accreditation and compliant with the Austrian Metrology Act (MEG) in accordance with the requirements set forth by the Austrian Federal Office of Metrology and in the Accreditation Law.

In addition we offer the performance of reference irradiations of samples in our standard fields.

DOSIMETRY SERVICE

Our dosimetry service is ISO 17025 accredited and provides thermoluminescent dosimeters (TLD) for individual monitoring of occupationally exposed persons. We provide the monthly measuring and recording of the radiation dose, in addition we submit the results to the central dose register of the Austrian Ministry of Environment. Our fully automated system guarantees a correct evaluation even at very low dose ranges. Periodic calibration of the dosimeter ensures our quality standards.

In order to avoid mistakes the dosimeter cards are delivered in various colours every month. Your major advantage is the simple handling. The card holder stays with you, only the dosimeter cards have to be changed every month. The new dosimeter cards are shipped by us in time.

The assessment takes place within 4 weeks. You will receive a clear overview of all measurement results. In case the dose limits are exceeded you will be informed at once.

OUR DOSIMETERS

WHOLE BODY DOSIMETER

The core of the thermoluminescent dosimeter (TLD) is a lithium fluoride crystal, fixed on a dosimeter card which is melted in foil.

Your employees receive a dosimeter card with printed name and month. They carry their dosimeter with a personal card holder and change it every month.

- Measuring range: 0,1 mSv to 10 Sv
- Energy range: 20 keV to 1,3 MeV
- Measurand: Dose equivalent $H_p(10)$ & $H_p(0.07)$



FINGER RING DOSIMETER

The finger ring dosimeter is a special development of our business unit. It enables the determination of a partial-body dose.

A lithium fluoride crystal is fixed on the carrier plate of an adjustable plastic ring. The number of the dosimeter and the barcode can be seen through an inspection window.

- Measuring range: 0,5 mSv to 10 Sv
- Energy range: 12 keV to 1,3 MeV
- Measurand: Dose equivalent $H_p(0.07)$

AREA DOSIMETER

Our Dosimetry Service provides area dosimeters for workplace monitoring (TLD-1K-V4) and environmental monitoring (TLD-2K-V4). Our passive thermoluminescent dosimeters (TLDs) are routinely used for long-term surveillance of exposure limits according European Council Directive 96/29/EURATOM and international radiation protection basic safety standards.

Dosimeter development and performance optimization are based on Monte Carlo simulations and verification measurements (Radiation Measurements 43, 2008) according to international standards (IEC 62387, DIN 25483). The area dosimeter is trademarked as a registered Community design (OHIM 371190 11/07/2005).

RADIATION HARDNESS ASSURANCE

Electronic components and systems show degradation in their electrical performance when exposed to ionizing radiation. We offer accredited testing laboratory services in radiation hardness assurance according to EN ISO/IEC 17025 for the European industry, nuclear medicine and for academic research institutes:

- Experimental and numerical investigations of all kinds of radiation effects in components and systems
- Performance, analysis, and evaluation of radiation exposure tests done at Seibersdorf Laboratories and external facilities
- Ensuring the operability of components and systems in typical radiation environments, such as in space, nuclear and accelerators facilities, nuclear medical applications
- Consulting on the use of products in radiation environments
- Participation in the development of test procedures for the European Space Agency ESA
- Expertise in silicon wafer radiation exposure testing
- ELDRS (enhanced low dose rate sensitivity) testing expertise
- R&D of radiation sensors such as RADFET, microdosimeter, PIN diodes



AVIATION DOSIMETRY „AVIDOS“

AVIDOS is a web service of the Seibersdorf Laboratories federated with ESA's Space Weather portal. The online software allows the assessment of galactic cosmic radiation exposure at flight altitudes. AVIDOS is based on Monte Carlo simulations of cosmic radiation transport in the atmosphere. AVIDOS is accessible under:

<http://swe.ssa.esa.int/web/guest/avidos-federated>

OUR EXPERTISE:

- External Dosimetry
- Workplace and environmental monitoring
- Standards and calibration laboratory for dosimeters
- Aviation Dosimetry
- Radiation hardness assessment of electronic components
- Development of radiation shieldings

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