WBDOSE AUTOMATIC OSL DOSIMETRY SYSTEM

Quick dose measurement by track detector technology

Regulatory authorities such as the IAEA, ICRP, AAPM, and EURATOM recommend monitoring and measuring radiation doses for individuals working in radiation-related fields. To address this need, the WBDOSE Automatic OSL Dosimetry System was developed. Featuring a smooth and stable design, it utilizes the Optically Stimulated Luminescence (OSL) technique to accurately measure personal radiation doses.

The WBDOSE Automatic OSL Dosimetry System is developed for measuring individual and ambient dosimetry through the utilization of the Optically Stimulated Luminescence (OSL) technique.

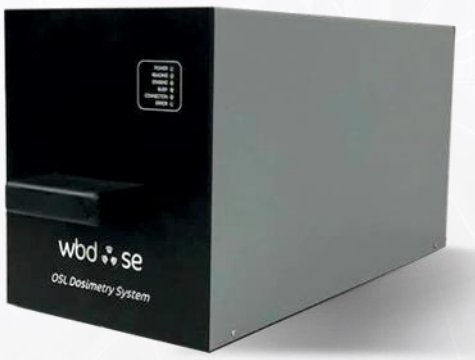
The WBDOSE OSL dosimeter is a versatile solution designed for radiation workers, providing accurate measurements of whole-body dose Hp(10) and skin dose Hp(0.07). It incorporates two BeO crystals and specially designed filters to ensure accurate and reliable measurements.

The BeO crystal offers a significant advantage due to its lower photon energy dependency, thanks to its effective atomic number, making it an ideal tissue-equivalent material. These qualities make BeO an excellent choice for personal and environmental dosimetry applications.

Additionally, the OSL system features high optical sensitivity, accurate dose measurement, and advanced mechanical strength. The WBDOSE OSL Reader/Eraser enhances these capabilities, providing a reliable and efficient solution for dosimetry needs.

The International Commission on Radiological Protection (ICRP) establishes annual dose limits for radiation workers, as summarized in the table below.

Annual dose limits of radiation workers	
Equivalent dose for whole body H_p (10)	*20 mSv/year*
Equivalent dose for skin H_p (0.07)	*500 mSv/year*



RADKOR Ltd. Co.

Serhat Mah. 1147. Cadde No: 12/10 06374
Yenimahalle/ANKARA TÜRKİYE
Tel/Phone: +90 (312) 212 26 00
Faks/Fax: +90 (312) 212 87 84
www.radkor.com

CE

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System Technical Specifications

- Use of crystals that have Optically Stimulated Luminescence (OSL) features,
- Tissue equivalent BeO crystal (effective atomic number Z =7.11),
- Measuring all photons in 16 keV-6.7 MeV energies,
- Measuring in 0.05 mSv-10 Sv doses,
- reading time < 2 sec for typical dose,
- reading time < 20 sec as a function of high irradiated dose,
- Re-erasing and using several times,
- Performing automatically daily quality control tests (Mechanical and electronical control tests),
- Verification with re-reading (second read),
- Give dose results in SI units (mSv).

The WBDOSE Automatic OSL Dosimetry System Provides Proficiency Tests;

- ISO/IEC 62387
- ISO/IEC 61000
- ISO/IEC 60950
- CE

The RADKOR Quality system provides proficiency tests;

- ISO 9001
- ISO/IEC 17025

(For irradiation and calibration laboratories)

WBDOSE Automatic OSL Dosimetry System:

It includes;

a.) Power unit

b.) Vacuum generator, vacuum controller and vacuum sensor etc.

c.) Robotic Arm, and Wbdose OSL Dosimeter reader

d.) Robot and OSL Dosimetry control system (HMI)

e.) Control Unit for Safety

f.) Emergency response system

g.) Magazine Capacity: 250 to 1000 dosimeters

h.) Necessary software for controlling the Robot

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Faks/Fax: +90 (312) 212 87 84

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