

YD-3000B Thermoluminescent Dosimeter Reader



YD-3000B

Thermoluminescent Dosimeter Reader

X、 γ 、 β 、neutron

Product Description

The YD-3000B dual-channel thermoluminescent dosimeter reader is designed to measure thermoluminescent detectors after exposure to X-ray, γ , β , neutron, and other types of radiation, providing readout values and dose values. It features automatic calibration, background subtraction, heating parameter settings, and printing functions. The thermoluminescent dosimeter reader can be connected to a computer, enabling data management, printing, and other operations through dedicated application software. It is suitable for a wide range of applications, from environmental background measurements to radiotherapy dosimetry, radiation exposure control in radiographic inspection, and dose measurement and monitoring in nuclear accidents.

Features

- Simultaneous dual-channel measurement, with optional display on the main unit or on a PC.
- Three high-voltage modes: automatic, locked, and fixed.
- Replaceable heating plate to facilitate measurement of thermoluminescent detectors of different shapes and specifications.
- Three-stage heating program suitable for different detectors and applications; heating programs can be modified and stored.
- Database supports multiple query functions, including by unit name, individual name, gender, dosimeter barcode, measurement date, measured personnel, and unmeasured personnel.
- Automatic preheating/drying function upon power-on, particularly useful for instruments in humid environments or used infrequently.
- Attenuation filters can be inserted to extend the dose measurement range.
- Barcode scanner automatically reads the dosimeter card number.
- PC-based automatic measurement operation, data management, and report printing.

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- Side-drawer structure for easy cleaning of the heat-insulating glass and convenient placement of attenuation filters to extend the dose measurement range.
- Comes with PC software, printer interface, and barcode scanner interface; standalone storage for up to 1000 measurement records.
- Supports barcode entry, table export, and personal database creation.
- Table export function facilitates archiving and record-keeping: personnel information forms already filled in can be imported into the software database all at once in the specified format, easily and quickly.
- A key advantage of the thermoluminescent dosimetry method is its wide linear dose range with a low lower detection limit, making it suitable for applications from environmental background measurements to radiotherapy dosimetry and nuclear accident dose measurement and monitoring.

Applications

- Radiation dose control in radiographic inspection
- Dose measurement and monitoring in nuclear accidents
- Environmental background measurement
- Nuclear power plants

Specifications

Optical Measurement System

Parameter	Specifications
Dose Measurement Range	LiF:Mg,Ti: 10^{-5} Gy to 1 Gy LiF:Mg,Cu,P: 10^{-7} Gy to 10 Gy LiF:Mg,Ti-M: 0 to 100 Gy
Measurement Items	X-rays, γ -rays, β -rays, neutrons
System Stability	$\leq 0.2\%$
Readout Time	40 s (customizable)
Sensitivity Repeatability Variation Coefficient	$\leq 0.1\% \pm 0.05\%/^{\circ}\text{C}$
Drawer Light Leakage	$\leq 0.1\%$ of internal light source intensity
Background	≤ 300
High Voltage	0 to 1500 V
Power Supply	AC 200 V $\pm 10\%$, 50 Hz

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Parameter	Specifications
Operating Temperature	10 °C to 40 °C; recommended indoor use, kept dry

Heating System

Parameter	Specifications
Heating Temperature Range	Room temperature to 400 °C
Heating Temperature Repeatability	≤1%
Heating Temperature Deviation	≤±2 °C
Heating Time	0 to 500 s
Heating Time Repeatability	≤0.1%
Heating Rate	1 to 40 °C/s

Applicable Standards

- GB/T 10264-2014 *Thermoluminescence Dosimetry Systems for Personal and Environmental Monitoring*
- JJG 593-2016 *Personal and Environmental Monitoring X, γ Radiation Thermoluminescence Dosimetry Systems*
- GBZ 128-2016 *Specifications for Individual Monitoring of Occupational External Exposure*
- GBZ 128-2019 *Specifications for Individual Monitoring of Occupational External Exposure*

Packing List / Configuration List

Name	Model	Description (Standard/Optional)
Dual-channel Thermoluminescent Dosimeter Reader	YD-3000B	Standard
Heating Plate	—	Standard

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Name	Model	Description (Standard/Optional)
Power Cord and other Cables	—	Standard
Fuse Tube	3A/5A	Standard
Thermoluminescent Dosimetry Software	—	Standard
User Manual / Instruction Manual	—	Standard
Certificate of Conformity	—	Standard
Warranty Card	—	Standard
Thermoluminescent Personal Dosimeter	—	Optional
Annealing Oven	—	Optional
PC Computer	—	Optional

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