YD-1000 Thermoluminescent Dosimeter Reader

Overview

The YD-1000 Thermoluminescent Dosimeter Reader is a single-channel instrument designed to evaluate thermoluminescent detectors after exposure to X-ray, gamma, beta, and neutron radiation. It delivers both readout values and calculated dose results, with built-in functions for background subtraction, calibration factor determination, programmable heating parameters, and printing. The reader connects to a computer via an Ethernet port and is operated through a dedicated web-based software platform, which provides comprehensive data management and reporting. Typical applications range from environmental background surveys to radiotherapy dosimetry, radiation exposure control in industrial radiography, and dose monitoring during nuclear accidents.

Features

- Compact, lightweight lift-up design that simplifies operation, access, and maintenance.
- Custom-developed web software with an intuitive interface, offering full-fledged capabilities for reader control and data handling.
- Independent database management module for organizing tasks, personnel records, test parameters, and dose data.
- Seamless integration with barcode scanners, printers, and import/export functions; supports batch upload of personnel information.
- Automatic subtraction of instrument background or detector background, and automatic calculation and storage of calibration factors.
- Heating plate drying function to ensure stable performance in humid environments or after prolonged idle periods.
- Accommodates attenuation filters to extend the upper measurement limit.
- Flexible three-stage heating profile that can be modified and saved to suit different detector types and applications.
- Database queries can be performed by unit name, individual name, gender, dosimeter barcode, measurement date, and other criteria.

Youdao Environmental Technology (Shenzhen) Co., Ltd.
5th Floor, Jiada R&D Building, No. 5 Songpingshan Road, Nanshan District, Shenzhen, PRC
https://ydhjkj.cn/en; **sales@ydhjkj.cn**;+86-755-23736433 / +86-18129873251

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- Personnel data can be imported in bulk; multiple table export formats are supported for easy archiving and record keeping; supports full database operations (add, delete, modify, query).
- Leverages the inherent strengths of thermoluminescent dosimetry: a wide linear range and a low detection threshold, making it suitable for uses from environmental monitoring up to radiotherapy and nuclear accident dose assessments.

Applications

- Radiation dose control in industrial radiography
- Nuclear accident dose measurement and monitoring
- Environmental background measurement
- Nuclear power plants

Optical Measurement System

Parameter	specifications
Dose Measurement Range	LiF:Mg,Ti: 10^{-5} Gy to 8 Gy LiF:Mg,Cu,P: 10^{-7} Gy to 12 Gy
Measurement Items	X-rays, γ-rays, β-rays, neutrons
Readout Time	40 s (adjustable)
Background Counts	≤1500
Power Supply	AC 200 V ±10%, 50 Hz

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Parameter	specifications
Max. Power Consumption	≤120 W
Operating Temperature	10 ℃ to 40 ℃; recommended for indoor use, kept dry
Dimensions & Weight	250 × 160 × 295 mm, 7.2 kg

Heating System

Parameter	Specifications
Temperature Range	Room temperature to 400 ℃
Temperature Repeatability	≤1%
Temperature Deviation	≤±2 ℃
Heating Time	0 to 60 s
Heating Time Repeatability	≤0.1%
Heating Rate	1 to 30 ℃/s

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