

YD-8180 α - β Surface Contamination Monitor



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α - β Surface Contamination Monitor

ZnS(Ag) scintillator detector

180 cm² effective detection area

Product Description

The α / β Surface Contamination Monitor is designed for measuring alpha and beta radioactive contamination levels on personnel skin and clothing, as well as on object surfaces. It features high measurement accuracy, excellent sensitivity, and ease of operation, and is suitable for environmental radioactive contamination surveys.

The instrument provides audible and visual alarm indication upon exceeding preset alarm thresholds, alerting on-site personnel and ensuring radiological safety. It is intended for surface contamination detection in radiological workplaces and laboratories, including workbenches, flooring, walls, protective clothing, and human skin.

Features

- **ZnS(Ag) plastic scintillator detector coupled with a solid-state silicon photomultiplier (SiPM)** as the detection unit, ensuring excellent response to both alpha and beta radiation.
- **4-inch color LCD touchscreen** with a full operator interface, designed for intuitive operation and ease of use.
- **Effective detection window area: 180 cm².**
- **User-selectable background subtraction** (with/without) and adjustable background measurement time.
- **Freely editable nuclide library.**
- **Data summarization and storage** with on-demand retrieval and review capability.
- **USB interface** for measurement data export; storage capacity of **100,000 data records** with power-loss protection.
- **Integrated real-time clock (RTC)** displaying year, month, and date; clock operation is unaffected by mains power interruption.

Applications

Youdao Environmental Technology (Shenzhen) Co., Ltd.

5th Floor, Jiada R&D Building, No. 5 Songpingshan Road, Nanshan District, Shenzhen, PRC

<https://ydhjkj.cn>; sales@ydhjkj.cn; +86-755-23736433 / +86-18129873251

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- Nuclear medicine departments of hospitals
- Nuclear power plants (NPPs)
- Radiological laboratories and radioisotope production facilities
- Health protection and disease control stations at all levels; environmental monitoring agencies
- Border entry/exit customs inspection
- Radioactivity testing of building materials such as stone and granite

Specifications

Parameter	Specification
Detector	ZnS(Ag) plastic scintillator detector + solid-state silicon photomultiplier (SiPM)
Detection Area	180 cm ² (360 cm ² optional)
Detectable Radiation Types	α , β (simultaneous or separate measurement)
Display Units	cps, cpm, Bq, or Bq/cm ²
Display	4-inch color LCD touchscreen
Background Count Rate	$\alpha \leq 0.1$ cps; $\beta \leq 10$ cps
Measurement Range	α : 0 ~ 5000 cps; β : 0 ~ 50000 cps
Detection Efficiency	⁹⁰ Sr- ⁹⁰ Y $\geq 35\%$; ²⁴¹ Am (α) $\geq 30\%$ (2 π geometry)
Operating Environment	Temperature: -20°C to +45°C; Relative humidity: $\leq 95\%$ (at 40°C)
Alarm Threshold	Continuously adjustable across full measurement range
Data Communication	USB interface for measurement data export
Data Storage	100,000 data records with power-loss protection
Power Supply	8.4 V, 10000 mAh rechargeable lithium battery
Housing	Aluminium alloy construction; rugged and durable
Dimensions & Weight	310 × 140 × 85 mm; 1.3 kg (plastic housing)

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