UNI-T®

UT334A
User Manual

Radiation Dose Tester

UNI-T®
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Preface

Thank you for purchasing the new UT334A radiation dose tester. In order to use this product safely and correctly, please read this manual thoroughly, especially the Safety Instructions part.

After reading this manual, it is recommended to keep the manual at an easily accessible place, preferably close to the device, for future reference.

Limited Warranty and Liability

Uni-Trend guarantees that the product is free from any defect in material and workmanship within one year from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination and improper handling. The dealer shall not be entitled to give any other warranty on behalf of Uni-Trend. If you need warranty service within the warranty period, please contact your seller directly.

This warranty is the only compensation you can obtain. Uni-Trend will not be responsible for any special, indirect, incidental or subsequent damage or loss caused by any reason or speculation. As some areas or countries do not allow limitations on implied warranties and incidental or subsequent damage, the above limitation of liability and stipulation may not apply to you.

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I. Overview

UT334A is a compact radiation dose tester used to monitor X, β and γ rays. The product has the characteristics of high sensitivity and accurate measurement, and is equipped with high performance microprocessor and TFT 2.0 color screen, which makes the operation convenient and the anti-interference ability strong. It has the audio and visual alarms. The alarm thresholds can be set. The product will raise alarms when the thresholds are reached. The main specifications conform to national and international standards.

II. Applications

UT334A is widely used in home decoration, radiation processing enterprise, health and epidemic prevention, radiation therapy, nuclear laboratory, nuclear power plant, import and export inspection, building materials, petrochemical, geological survey, scrap steel, industrial nondestructive testing and other environments existing ionizing radiation, personal radiation dose supervision and protection occasions.

III. Total Dose Limit

Professional staff:

Annual average effective dose for 5 consecutive years	200mSv
Effective dose in any year	50mSv
Annual equivalent dose of lens of the eye	150mSv
Annual equivalent dose for extremities (hands and feet) or skin	500mSv

Ordinary people:

Annual effective dose	1mSv
The effective dose for a single year if the average annual dose for 5 years does not exceed 1mSv	5mSv
Annual equivalent dose of lens of the eye	15mSv
Annual equivalent dose for extremities (hands and feet) or skin	50mSv

Common sense of radioactivity:

International Standard-1990

Professional staff: 20mSv/year (10uSv/hour)

Ordinary people: 1mSv/year (0.52uSv/hour)

IV. Features

- Measure dose rates in real time and record total doses
- Calibration function
- Adjustable alarm thresholds
- The start time of current dose accumulation can be viewed.
- Scheduled measurement (00-999h)
- Over-limit alarm
- Save the records of the last ten measurements
- The clock runs normally after the product is turned off.
- Monitor battery status

- English/Chinese optional
- Sensor fault warning (“Device damaged” will show on the display.)
- In the sleep mode, if the radiation dose exceeds the set alarm threshold, the product will automatically alarm and enter the measurement interface.

V. Specifications

Sensor	G-M counter tube
Range	0.05uSv-50mSv
Accuracy	-17%~+25% based on ^{137}CSγ
Charging interface	Type-C interface (The green light is on when charging, and off when fully charged.)
Alarm response time	$t_{d:} < 10s$
Alarm threshold accuracy	-17%~+25%
Alarm modes	Audio and visual alarms
Detected rays	X, β and γ rays
Battery	3.7V 1800mAh
Battery life	20 days (continuous measurement, particle sound off)
Product weight	127g
Product size	120*65*25mm

VI. Buttons

⏸ : Power/select
◀ : Step through menus to the left/subtract value
▶ : Step through menus to the right/add value

VII. Operation

1. Power on

Long press ⏸ for 3s to turn on the product and enter the main interface.

2. Power off

Long press ⏸ for 3s to turn off the product.

Note: When 🔒 shows on the screen, the product cannot be turned off. If users

need to turn it off at this time, enter the “Schedule” interface to stop timing.

3. Measure

Enter the “Measure” interface to view real-time dose rate (0.05uSv-50mSv), average dose rate (0.05uSv-50mSv) and total dose (0.1uSv-9999mSv).

4. Schedule

Enter the “Schedule” interface to set the start delay time (00-99h) and the measurement time (00-999h). Select “Start timing” and press ⏸, the product will start countdown. When the start delay countdown returns to zero, the real-time dose rate, average dose rate and total dose will also return to zero and the product will start measuring the radiation dose and total dose rate. When the measurement time countdown returns to zero, the product will automatically save the interval measurement data. Users can find these data in the “Records” interface.

Note: Start delay is the countdown to start measurement, and the hour, minute and second can be set. Select “Start timing” and press ⏸ to start countdown. When the countdown ends, the measurement begins.

5. Records

After each scheduled measurement, the product will automatically save one history record. A maximum of 10 records can be saved. After 10 records are saved, the new record automatically replaces the last one if users continue to store the new record.

6. Delete

Enter the “Delete” interface to delete current data or history data. The current data is the average dose rate and total dose. The history data is all data in historical records.

Note: Historical records cannot be restored after being deleted. When 🔒 shows on the screen, the product cannot enter the “Delete” interface.

Select “Calibration factor” and press ⏸ twice, and “Password: 0000” will appear at the bottom of the screen. Press ▶ to adjust “0000” to “0018”, and press ⏸ to confirm. Press ◀ or ▶ to adjust the calibration factor, and press ⏸ to save. It is used to calibrate the error in the range of 20uSv-1uSv.

Note: C_f=1.00 by default

Calibration factor C_f= Personal dose equivalent H_p (10) reference value/Device indicating value

Technical specification for calibration (code, name): JJG 1009-2016 **Personal Dose Equivalent H_p (10) Monitors for X and γ Radiations**

7. Alarm

Dose rate: 0.2uSv-999uSv

Total dose: 1uSv-9999uSv

The product will raise alarms when the thresholds are reached.

8. Unit

In the unit setting interface, select "unit", press ⏸, and then press ◀ or ▶ to switch between uSv and uGy. The language can be English or Chinese.

9. Sound

In this interface, the alarm volume and alarm times can be set. Adjust the alarm volume to 0, and the sound will be turned off. If the particle sound is turned on, when ions enter the sensor, the product will make particle sound.

10. Clock

In this interface, the date (year/month/day) and time (hour/minute/second) can be set.

Note: It is recommended to set the clock to the local date and time before using the product.

11. Sleep

Screen sleep: The unit of screen sleep time is minute. When it is adjusted to 🔒, the screen will not sleep.

Auto shutdown: The unit of auto shutdown time is hour. When it is adjusted to 🔒, the auto shutdown function is turned off. Users only can long press ⏸ to power off at this point.

Screen brightness: Adjust the screen brightness.

VIII. Cautions

1. Please turn off the product after use. If not used for a long time, please fully charge the product and turn it off. Batteries need to be recharged every 12 months.

2. When the battery status is low, charge the battery in time to ensure the measurement accuracy.

3. Turning on particle sounds reduces battery life.

4. The manual version is subject to update without prior notice.

IX. Safety Instructions

Accidental fall of product	Please confirm whether the measured values are normal and whether they will be updated. If any abnormality is found, do not use the product in places with strong radiation.
"Device damaged" shows on the display.	Please do not use the product in places with strong radiation.
The operating environment contains explosive and flammable gas or dust.	Do not use the product in this environment.
Waterproof	The waterproof grade of the product is IP40, and cannot get wet or splashed.
Energy response	X-ray can only be used as a reference to test radiation intensity and cannot meet the energy response requirements.

X. Packing List

Radiation dose tester	1PC
User manual	1PC
Carrying bag	1PC
Data cable	1PC
Hand strap	1PC