

User Manual R1.3  
Santacary Technology Co. Ltd.  
XAR-UAB UV AB Light Meter



## INTRODUCTION

Congratulations on your purchase of this Santacary XAR-UAB UV AB Light Meter. XAR-UAB is a precise meter that measures ultraviolet UVA and UVB radiation.

UVA wavelength is 320-400nm, and the center value is 365nm. UVA light is usually used in industrial glue curing, tungsten ore identification, fluorescence detection, biopolymerization, oil pollution detection, ore exploration, criminal detective, textile industry, archaeology, medical treatment, stage, nightclub, theater and signal lighting.

UVB wavelength is 275-320nm, also known as medium wave erythema effect ultraviolet, which is mainly used in medical treatment, aging test, spectral analysis, etc.. UVB light has erythema effect on human body, can promote mineral metabolism in vivo and the formation of vitamin D. Reptile pets, such as tortoises, green iguanas, chameleons also need to take UVB.

Most of the natural UV light people encounter comes from the sun. Of the solar UV energy that reaches the equator, 95 percent is UVA and 5 percent is UVB.

## FEATURES

- ✧ Gallium Nitride Based Material Photovoltaic Mode
- ✧ High-precision detection, rapid response and operation
- ✧ Good Visible Blindness
- ✧ Display UVI and UV radiation intensity simultaneously
- ✧ Display the maximum UV radiation intensity for all-time
- ✧ Trend chart display showing the past readings for UVA and UVB intensity
- ✧ With temperature and humidity measurement
- ✧ Only two buttons and easy to operate
- ✧ Four AA Alkaline Batteries

## APPLICATION

- ✧ Monitoring Xeroderma Pigmentosum UV Exposure
- ✧ Testing Window Film / Tint Transmission
- ✧ Monitoring Low Level UV from Household Lamps
- ✧ Testing Ground level UV From Stadium Lighting
- ✧ Testing Ground level UV From Stage, Nightclub and Theater Lighting
- ✧ Monitoring Artwork UV Exposure
- ✧ Monitoring Archaeological UV Exposure
- ✧ Measuring Outdoor UV Including Shady Area UV
- ✧ Monitoring UVA Lamp Intensity and Aging
- ✧ Monitoring UV LED (< 360nm)
- ✧ Monitoring PUVA Therapy Lamp Intensity and Aging
- ✧ Testing UVA In Industrial Glue Curing, Tungsten Ore Identification, Fluorescence Detection, Biopolymerization, Oil Pollution Detection, Ore Exploration, Criminal Detective, and Textile Industry.

## DEVICE

1. UVA+B sensor
2. LCD display
3. Power button
4. Function button
5. Battery compartment back cover





## OPERATION

Note:

- LCD backlight will turn off automatically after 2 minutes of inactivity.
- When LCD backlight is off, press any button to turn on the backlight.


1. **Power button** 

## 1.1 Turn On/Turn Off Meter

- 1) When the meter is turned off, press  to turn on the unit.
- 2) When the meter is turned on, press  for 2 seconds to turn off the unit.

When the unit is first turned on, it performs 1 second countdown for meter warm up, then enters normal display with current UVA+UVB, UVI, temperature, and humidity readings displayed. The meter starts taking measurements when power on and updates readings every 2 seconds. The UVA+UVB radiation Unit is  $\mu\text{W} / \text{cm}^2$ .

## 1.2 Reset UV Maximum Record

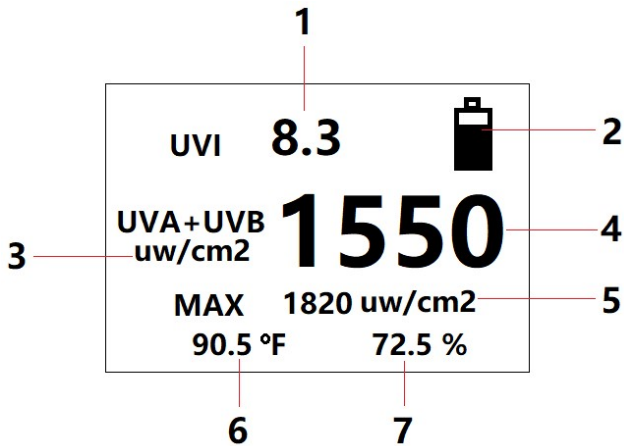
Press  shortly to reset the maximum record of UVA+UVB radiation intensity.

## 2. Function Button **FUNC**

Press **FUNC** shortly to switch Normal Display, Trend Chart Display and Log Display.

### 2.1 Normal Display

1. UVI (Ultraviolet Index)
2. Battery gauge
3. Radiation intensity unit
4. UVA+UVB radiation intensity
5. Maximum UVA+UVB radiation intensity
6. Temperature
7. Relative humidity

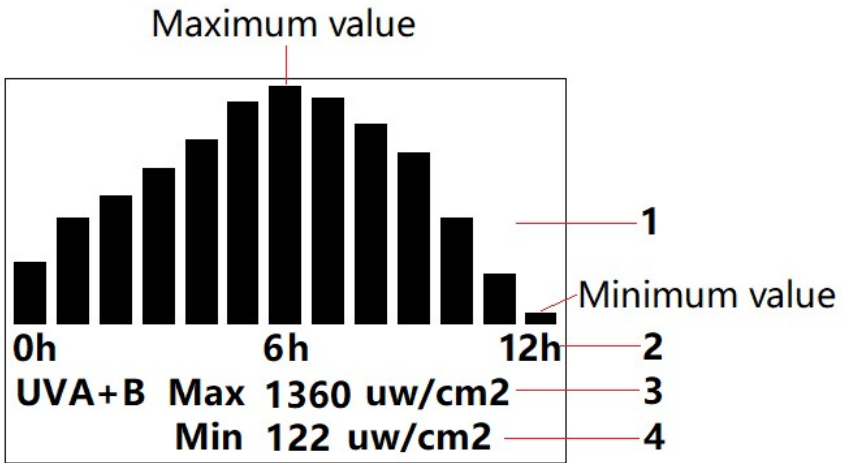


## 2.2 Trend Chart Display

XAR-UAB has a data log function that provides up to 12 hours history of UVA+UVB intensity.

The trend chart displays the past readings for UVA+UVB intensity. The time per division (indicates the chart's time per unit division) is 60 min / div. Trend chart contains a maximum of 13 recorded data at one time. The time span is 12 hours. After the chart is full the data is FIFO (first-in, first-out). Below is the example of Trend Chart Display.

1. Vertical bar of UVA+UVB intensity (The higher the bar, the greater the value)
2. Time scale (farther to the right, longer time in the past)
3. Maximum value on the chart of UVA+UVB intensity
4. Minimum value on the chart of UVA+UVB intensity



At the bottom of the chart, there are two numerical indicators: Max and Min. The Max and Min values will reflect the maximum and minimum values on the chart of UVA+UVB intensity.

### 2.3 Log Display



This display lists the 13 recorded data in the trend chart with time samples.

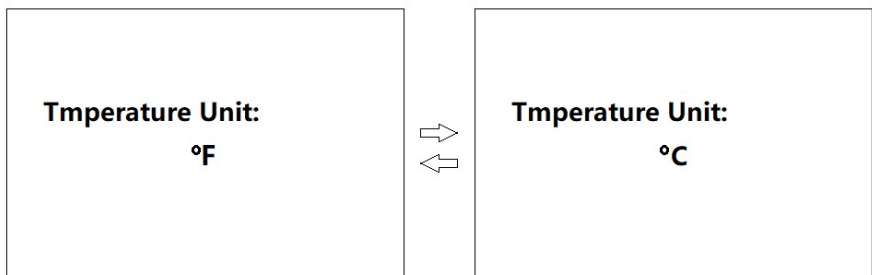
1. UVA+UVB intensity unit
2. Time samples in past (h--hour)
3. UVA+UVB intensity

UVA+B		uw/cm2	
0h	392	7h	1261
1h	602	8h	1152
2h	751	9h	1001
3h	900	10h	600
4h	1052	11h	323
5h	1254	12h	122
6h	1360		

Diagram labels: 1 points to the 'uw/cm2' header, 2 points to the UVA+B data, and 3 points to the 'uw/cm2' data.

## 2.4 Temperature Units Setup Menu

By pressing the Function button **FUNC** for 3 seconds, the meter enters into Temperature Units Setup Menu. In this Menu, press  shortly to switch two temperature units: °F and °C. Pressing the Function button **FUNC** shortly to select “Exit” item then press  shortly to switch back to the Normal Display.



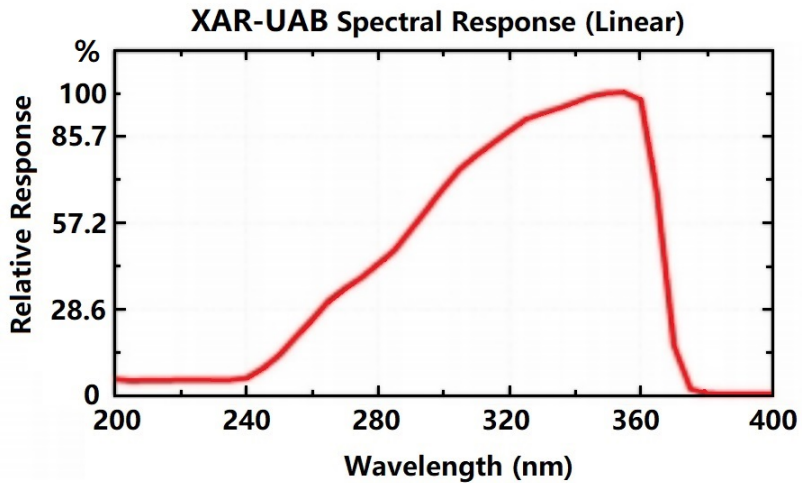
## ULTRAVIOLET INDEX (UVI)



This meter displays the Ultraviolet Index (UVI) in Normal Display.

UVI	0-2.9	3.0-5.9	6.0~7.9	8.0~10.9	11+
<b>Descripti on</b>	Low danger from the sun's UV rays for the average person	Moderate risk of harm from unprotected sun exposure	High risk of harm from unprotected sun exposure	Very high risk of harm from unprotected sun exposure	Extreme risk of harm from unprotected sun exposure

## SPECTRAL RESPONSE



The peak point (calibration point) of spectral response is at 352 nm.

## SPECIFICATIONS

### UV Specification

UVA+UVB Measurement Range	0 to 35000 $\mu\text{W}/\text{cm}^2$ (35 $\text{mW}/\text{cm}^2$ )
Spectral Detection Range	240 to 370 nm
Peak point	352 nm
Measurement accuracy	$\pm 4\%$ or $\pm 1$ digits
Resolution	1.0 $\mu\text{W}/\text{cm}^2$
Temperature Range	-10 to 50°C (14 to 122°F)
Humidity Range	0 to 90%RH

### Temperature Specification

Temperature Range	-10.0~60.0°C (14~140°F) display
Display Resolution	0.1°C (0.1°F)
Display Options	°C/°F switchable
Accuracy	$\pm 0.5^\circ\text{C}$ ( $\pm 0.9^\circ\text{F}$ )
Response Time	5~30 seconds (device must equilibrate with environment)

### RH Specification

Measurement Range	0.0~99.9%RH
Display Resolution	1%RH
Accuracy	$\pm 4.5\%$ RH
Response Time	<8 seconds for 63% of step change

### General

Operating	-10°C to 50°C (14°F to 122°F), 0~90% RH non-condensing
Storage	-10°C to 60°C (14°F to 140°F), <99% RH non-condensing
Power Supply	Four AA Alkaline Batteries
Dimensions	75x165x25 mm (2.95x6.49x0.98")
Weight	118 grams (4.16 oz.) without batteries

## **MATERIALS SUPPLIED**

- ✧ Santacary XAR-UAB UV AB Light Meter
- ✧ Protector Bag
- ✧ English User Manual

## **CLEANING AND STORAGE**

The front panel and case can be cleaned carefully with a soft wet cloth. Allow drying completely before using. Do not use aromatic hydrocarbons or chlorinated solvents for cleaning.

## **WARRANTY**

The XAR-UAB is warranted to be free from defects in material and workmanship for a period of two year from the date of purchase. This warranty covers normal operation and does not cover misuse, abuse, alteration, neglect, improper maintenance.

## **CONTACT US**

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