

# Multiple Probe UV Light Meter

Model: LS135

User Manual V1.00

Please read this manual carefully before using and reserve it for reference.

## I. Product Introduction

Multi-Probe UV Light Meter, featuring digital probes with a plug-and-play design, allows one host unit to support multiple probes simultaneously and automatically detects the probe model. The host unit operates via a touchscreen with a color display. Based on differences in ultraviolet spectral range, measurement range, aperture size, application industries, etc., 12 different UV probes have currently been developed.

No.	Probe Model	Spectral response	Test Hole Diameter	Application Industry
1	UVC-X0	230nm-280nm	Φ10mm	Intensity and energy measurement of 254nm UV sterilization mercury lamp
2	UVCWP-X1	230nm-280nm	Φ10mm	Intensity and energy measurement of 254nm UV sterilization mercury lamp, waterproof
3	UVC-X2	210nm-250nm	Φ10mm	Intensity and energy measurement of 222nm UV germicidal lamps
4	UVCLED-X0	230nm-315nm	Φ10mm	Intensity and energy of 260nm-285nm UV LED sterilization lamp
5	UVB-X0	280nm-315nm	Φ10mm	General UVB intensity and energy measurement
6	UVA-X0	315nm-400nm	Φ10mm	Intensity and energy measurement of light source of high-pressure mercury lamp in UV curing industry
7	UVA-X1	315nm-400nm	Φ10mm	Generally low power UVA intensity and energy measurement
8	UVA-X2	315nm-365nm	Φ10mm	Intensity and energy measurements of 340nm aging lamps
9	UVALED-X0	340nm-420nm	Φ10mm	Intensity and energy measurement of area light source of UV LED in UV curing industry
10	UVALED-X1	340nm-420nm	Φ1mm	Intensity and energy measurement of point light source of UV LED in UV curing industry
11	UVALED-X3	340nm-420nm	Φ10mm	General UVA+UVV LED intensity and energy measurement, low power measuring range
12	BL-X0	410nm-490nm	Φ10mm	Intensity and energy measurements of 450nm blue light

## Standards for the product

*JJG 879-2015 Verification Regulation of Ultraviolet Radiometers*

*WST 367-2012 Regulation of disinfection technique in healthcare settings*

*QB/T 2826-2017 Ultraviolet curing offset ink*

## II. Probe Parameters

### 1. UVC-X0 probe

1. Spectral response: 230nm-280nm,  $\lambda_p = 254\text{nm}$
2. Power measuring range: 0 - 200000 $\mu\text{W}/\text{cm}^2$
3. Resolution: 0.1 $\mu\text{W}/\text{cm}^2$
4. Energy measuring range: 0-9999999 $\mu\text{J}/\text{cm}^2$
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \mu\text{W}/\text{cm}^2$ :  $\pm 5 \mu\text{W}/\text{cm}^2$ ,  $H \geq 50 \mu\text{W}/\text{cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 6 times/second
8. Optional unit: $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: diameter 39mm \* thickness 15mm

### 2. UVCWP-X1 probe

1. Spectral response: 230nm-280nm,  $\lambda_p = 254\text{nm}$
2. Power measuring range: 0 - 200000 $\mu\text{W}/\text{cm}^2$
3. Resolution: 0.1 $\mu\text{W}/\text{cm}^2$
4. Energy measuring range: 0-9999999 $\mu\text{J}/\text{cm}^2$
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \mu\text{W}/\text{cm}^2$ :  $\pm 5 \mu\text{W}/\text{cm}^2$ ,  $H \geq 50 \mu\text{W}/\text{cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 6 times/second
8. Optional unit: $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$

10. Probe size: diameter 50mm \* thickness 20mm

11. Waterproof depth: 1m

### 3. UVC-X2 probe

1. Spectral response: 210nm-250nm,  $\lambda_p = 222\text{nm}$

2. Power measuring range: 0 - 200000 $\mu\text{W}/\text{cm}^2$

3. Resolution: 0.1 $\mu\text{W}/\text{cm}^2$

4. Energy measuring range: 0-9999999 $\mu\text{J}/\text{cm}^2$

5. Record time: 0-99999s

6. Measuring accuracy(H is the standard value):  $H < 50 \mu\text{W}/\text{cm}^2$ :  $\pm 5 \mu\text{W}/\text{cm}^2$ ,  $H \geq 50 \mu\text{W}/\text{cm}^2$ :  $\pm 10\%H$

7. Sampling speed: 6 times/second

8. Optional unit:  $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$

9. Test Hole Diameter:  $\Phi=10\text{mm}$

10. Probe size: diameter 39mm \* thickness 15mm

### 4. UVCLED-X0 probe

1. Spectral response: 230nm-315nm, suitable for testing 260nm-285nm sterilization UV LED (wide spectral response range, avoid using in strong ambient light)

2. Power measuring range: 0 - 200000 $\mu\text{W}/\text{cm}^2$

3. Resolution: 0.1 $\mu\text{W}/\text{cm}^2$

4. Energy measuring range: 0-9999999 $\mu\text{J}/\text{cm}^2$

5. Record time: 0-99999s

6. Measuring accuracy(H is the standard value):  $H < 50 \mu\text{W}/\text{cm}^2$ :  $\pm 5 \mu\text{W}/\text{cm}^2$ ,  $H \geq 50 \mu\text{W}/\text{cm}^2$ :  $\pm 10\%H$  %

7. Sampling speed: 6 times/second

8. Optional unit: $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$

9. Test Hole Diameter:  $\Phi=10\text{mm}$

10. Probe size: diameter 39mm \* thickness 15mm

### 5. UVB-X0 probe

1. Spectral response: 280nm-315nm,  $\lambda_p = 310\text{nm}$ , suitable for measuring UVB light source that peak

wavelength at 297nm, 308nm, 313nm etc.

2. Power measuring range: 0 - 200000 $\mu$ W/cm<sup>2</sup>
3. Resolution: 0.1 $\mu$ W/cm<sup>2</sup>
4. Energy measuring range: 0-9999999 $\mu$ J/cm<sup>2</sup>
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \mu W/cm^2$ :  $\pm 5 \mu W/cm^2$ ,  $H \geq 50 \mu W/cm^2$ :  $\pm 10\%H$
7. Sampling speed: 6 times/second
8. Optional unit: $\mu$ W/cm<sup>2</sup> (default), mW/cm<sup>2</sup>, W/m<sup>2</sup>
9. Test Hole Diameter:  $\Phi=10$ mm
10. Probe size: diameter 39mm \* thickness 15mm

## 6. UVA-X0 probe

1. Spectral response: 315nm-400nm,  $\lambda_p = 365$ nm
2. Power measuring range: 0 - 2000mW/cm<sup>2</sup>
3. Resolution: 0.1mW/cm<sup>2</sup>
4. Energy measuring range: 0-9999999mJ/cm<sup>2</sup>
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 5mW/cm^2$ :  $\pm 0.5mW/cm^2$ ,  $H \geq 5mW/cm^2$ :  $\pm 10\%H$
7. Sampling speed: 2048 times/second
8. Optional unit: mW/cm<sup>2</sup> (default), W/m<sup>2</sup>
9. Test Hole Diameter:  $\Phi=10$ mm
10. Probe size: length 39mm \* width 32mm \* thickness 15mm

## 7. UVA-X1 probe

1. Spectral response: 315nm-400nm,  $\lambda_p = 365$ nm
2. Power measuring range: 0 - 200000 $\mu$ W/cm<sup>2</sup>
3. Resolution: 0.1 $\mu$ W/cm<sup>2</sup>
4. Energy measuring range: 0-9999999 $\mu$ J/cm<sup>2</sup>
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \mu W/cm^2$ :  $\pm 5 \mu W/cm^2$ ,  $H \geq 50 \mu W/cm^2$ :  $\pm 10\%H$

7. Sampling speed: 6 times/second
8. Optional unit:  $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: length 39mm \* width 32mm \* thickness 15mm

## 8. UVA-X2 probe

1. Spectral response: 315nm-365nm,  $\lambda_p = 340\text{nm}$
2. Power measuring range: 0 - 200000 $\mu\text{W}/\text{cm}^2$
3. Resolution: 0.1 $\mu\text{W}/\text{cm}^2$
4. Energy measuring range: 0-9999999 $\mu\text{J}/\text{cm}^2$
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \mu\text{W}/\text{cm}^2$ :  $\pm 5 \mu\text{W}/\text{cm}^2$ ,  $H \geq 50 \mu\text{W}/\text{cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 6 times/second
8. Optional unit:  $\mu\text{W}/\text{cm}^2$  (default),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: diameter 39mm \* thickness 15mm

## 9. UVALED-X0 probe

1. Spectral response: 340nm-420nm, calibrated with 395nm UV LED
2. Power measuring range: 0 - 200000 $\text{mW}/\text{cm}^2$
3. Resolution: 1 $\text{mW}/\text{cm}^2$
4. Energy measuring range: 0-9999999 $\text{mJ}/\text{cm}^2$
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50\text{mW}/\text{cm}^2$ :  $\pm 5\text{mW}/\text{cm}^2$ ,  $H \geq 50\text{mW}/\text{cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 2048 times/second
8. Optional unit:  $\text{mW}/\text{cm}^2$  (default),  $\text{W}/\text{cm}^2$ ,  $\text{W}/\text{m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: length 39mm \* width 32mm \* thickness 15mm

## 10. UVALED-X1 probe

1. Spectral response: 340nm-420nm, calibrated with 395nm UV LED
2. Power measuring range: 0 - 200000mW/cm<sup>2</sup>
3. Resolution: 1mW/cm<sup>2</sup>
4. Energy measuring range: 0-9999999mJ/cm<sup>2</sup>
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value): H<50mW/cm<sup>2</sup>:  $\pm 5\text{mW/cm}^2$ , H $\geq 50\text{mW/cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 2048 times/second
8. Optional unit: mW/cm<sup>2</sup> (default), W/cm<sup>2</sup>, W/m<sup>2</sup>
9. Test Hole Diameter:  $\Phi=1\text{mm}$
11. Probe size: length 39mm \* width 32mm \* thickness 15mm

## 11. UVALED-X3 probe

1. Spectral response: 340nm-420nm, calibrated with 395nm UV LED
2. Power measuring range: 0 - 200000 $\mu\text{W/cm}^2$
3. Resolution: 0.1 $\mu\text{W/cm}^2$
4. Energy measuring range: 0-9999999 $\mu\text{J/cm}^2$
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value): H<50  $\mu\text{W/cm}^2$ :  $\pm 5 \mu\text{W/cm}^2$ , H $\geq 50 \mu\text{W/cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 6 times/second
8. Optional unit:  $\mu\text{W/cm}^2$  (default), mW/cm<sup>2</sup>, W/m<sup>2</sup>
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: length 39mm \* width 32mm \* thickness 15mm

## 12. BL-X0 probe

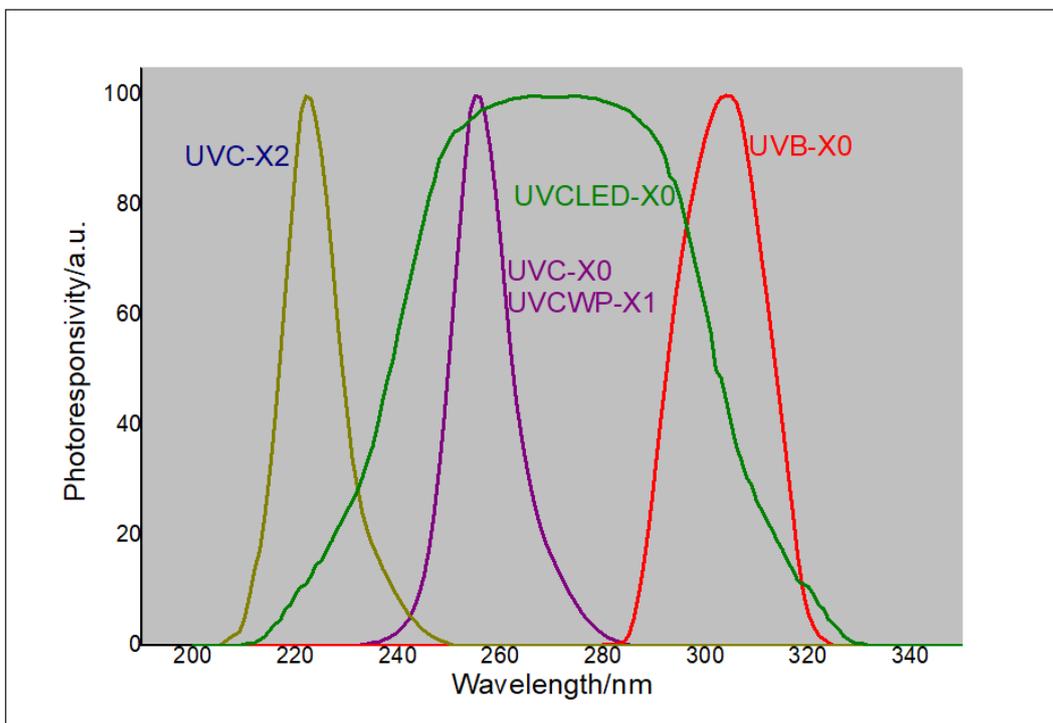
1. Spectral response: 410nm-490nm, calibrated with 450nm UV LED
2. Power measuring range: 0 - 2000 mW/cm<sup>2</sup>
3. Resolution: 0.1 mW /cm<sup>2</sup>
4. Energy measuring range: 0-9999999mJ/cm<sup>2</sup>

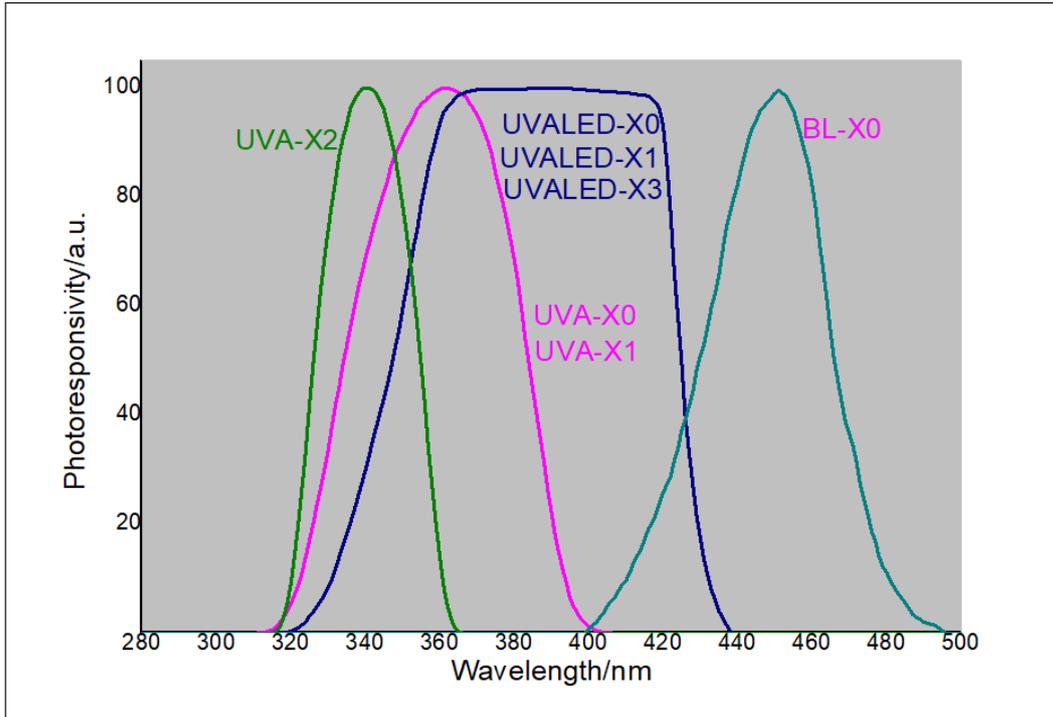
5. Record time: 0-99999s
6. Measuring accuracy(H is the standard value):  $H < 50 \text{mW/cm}^2$ :  $\pm 5 \text{mW/cm}^2$ ,  $H \geq 50 \text{mW/cm}^2$ :  $\pm 10\%H$
7. Sampling speed: 2048 times/second
8. Optional unit:  $\text{mW/cm}^2$  (default),  $\text{W/m}^2$
9. Test Hole Diameter:  $\Phi=10\text{mm}$
10. Probe size: diameter 39mm \* thickness 15mm

### 13. Host Parameters

1. Host weight: about 277g
2. Host size: 141mm \* 70.4mm \* 22mm (L\*W\*H)
3. Display: 480\*320 dot IPS
4. Power supply: rechargeable lithium-ion battery, 3.7V, 4000mAh
5. Probe connection: push pull (Snap-in style), Aviation socket.
6. Power supply voltage: DC 5V
7. Operating current: 133 mA
8. Operating power consumption: 665 mW

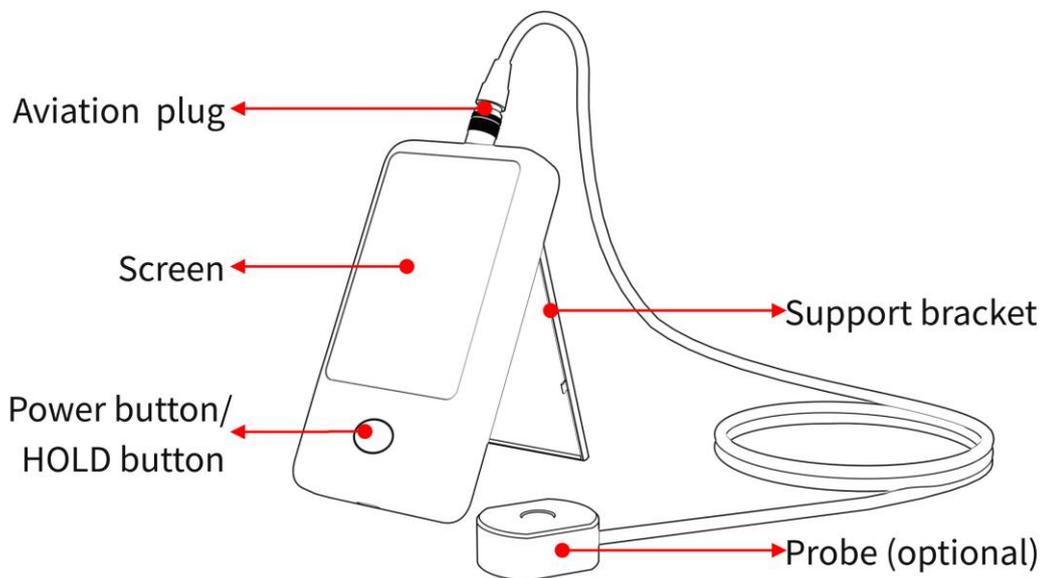
### III. The spectral response curves of probes





## IV. Operations

### 1. Structure



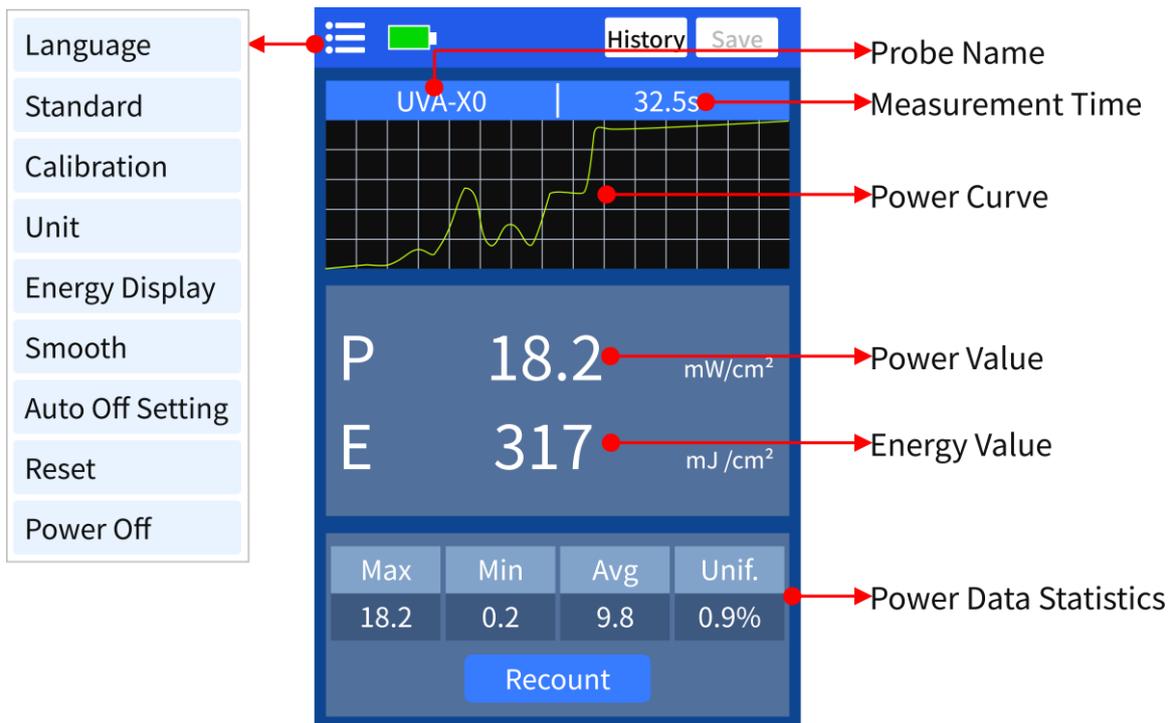
### 2. Power on/off

- **Power on:** Press  to power on the instrument. After powering on, the instrument displays the instrument parameters and probe parameters, and enter the measuring interface.

- **Power off:** Press and hold the "U" key or select the "Shutdown" option in the menu bar to power off the instrument. If the auto-shutdown function is enabled, the instrument will automatically turn off after being idle for longer than the set auto-shutdown period.

### 3. Parameter settings mode

In the measurement interface, clicking the icon  in the upper left corner will bring up the menu bar, which includes the following options: Language, Standard, Calibration, Unit, Energy Display, Smooth (available only for high-speed acquisition probes), Auto Off Settings, Restore, and Power Off.



The screenshot shows the measurement interface with a menu overlay on the left. The interface displays the following information:

- Menu Options:** Language, Standard, Calibration, Unit, Energy Display, Smooth, Auto Off Setting, Reset, Power Off.
- Probe Name:** UVA-X0
- Measurement Time:** 32.5s
- Power Curve:** A line graph showing power fluctuations over time.
- Power Value:** P 18.2 mW/cm<sup>2</sup>
- Energy Value:** E 317 mJ/cm<sup>2</sup>
- Power Data Statistics:**

Max	Min	Avg	Unif.
18.2	0.2	9.8	0.9%
- Buttons:** History, Save, Recount.

The image shows a settings menu on the left with options: Language, Standard, Calibration, Unit, Energy Display, Smooth, Auto Off Setting, Reset, and Power Off. Red arrows point from these options to three sub-menus on the right:

- Language**: 中文 (selected), English
- Standard Setting**: LS-STD (selected), JJG879-2015
- Unit Setting**:  $\mu\text{W}/\text{cm}^2$  (selected),  $\text{mW}/\text{cm}^2$ ,  $\text{W}/\text{cm}^2$

(Selectable units vary for different probes)

### Calibration:

Access the instrument calibration interface to perform calibration operations. (This function is reserved for use by metrology institutes only and is strictly prohibited for non-professionals.)

The image shows the Calibration interface on the right, with a red arrow pointing from the 'Calibration' option in the settings menu on the left. The Calibration screen displays:

Calibration	
Measure Value	0.0
Standard Value	<input type="text" value="0.0"/>
New Coef	----
Old Coef	1.000

Below the table are two buttons: **Calibrate** and **Reset**. At the bottom, a text box reads: "Align Probe to Standard Light Source, Input Standard Value, Click to Calibrate."

### Smooth (available only for high-speed acquisition probes):

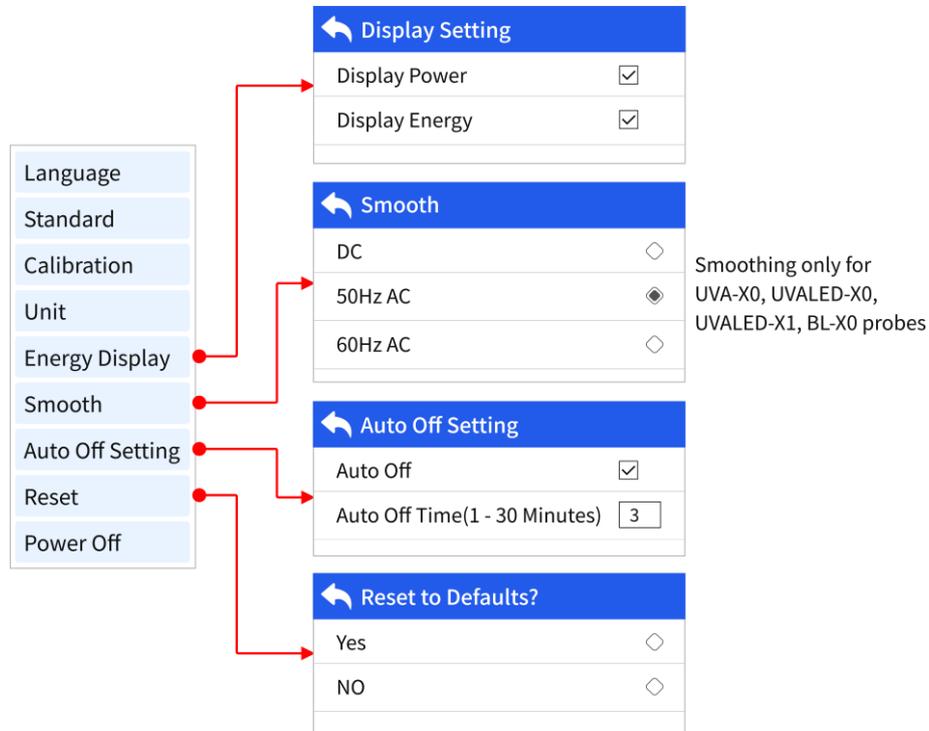
If the UV light source is powered by AC, the frequency of the AC power may affect power measurement. High-speed acquisition probes (2048 times/s) require smoothing. Enter the smoothing settings interface

and select OFF/50Hz/60Hz:

**OFF:** No smoothing applied. Select this option for DC power supply.

**50Hz:** For 50Hz AC power supply.

**60Hz:** For 60Hz AC power supply.



#### 4. Measurement

- In measurement mode, the interface displays real-time power, maximum power, minimum power, average power, uniformity, measurement duration, and energy value (display of real-time power and energy depends on settings).
- In measurement mode, briefly press the HOLD key to lock the data; a "HOLD" indicator will appear at the top of the interface.
- In "HOLD" state, click the "Save" button in the upper right corner of the screen to save the current measurement results. The save name can be manually entered (up to 13 characters).

**Note:** The instrument can store up to 1000 data records. When 1000 records are saved, the instrument will prompt "1000 historical records are full." You can choose to delete all records or selectively delete specific ones in the history interface.

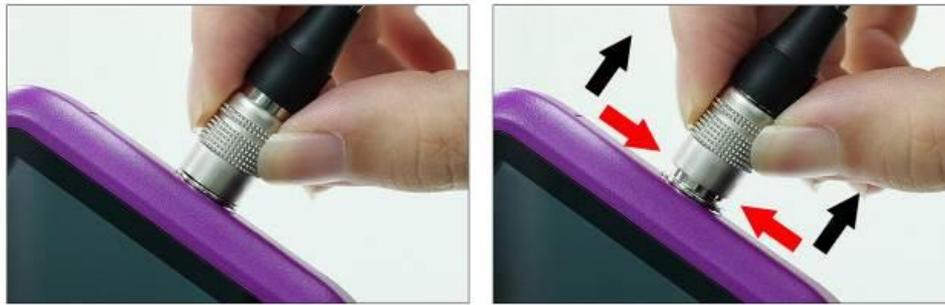
#### 5. Record data query mode

To view saved measurement results, click the "History" button at the top of the screen to access measurement records.

#### 6. Aviation plug connection

When plugging out the probe, make sure not to violently rotate and pull the connector, but plug out the

plug by the way as shown in the following diagram.



Locked state

Use fingers to pinch and pull up the "Plug-in", the plug will be pulled out

## V. Mini Program

The instrument features Bluetooth transmission capability, allowing users to remotely view measurement data via a WeChat mini-program. Please ensure Bluetooth and location services are enabled during use. Scan the QR code on the back of the instrument using the WeChat "Scan" function to directly open the "UV Radiometer" mini-program.

## VI. PC Software

The instrument is equipped with a USB interface and includes PC software. Using this software, users can read all recorded data from the instrument, display measurement curves, export data to Excel, generate printed reports, and perform other related operations.

Test Name	Probe	Power RT (mW/cm <sup>2</sup> )	Power MAX (mW/cm <sup>2</sup> )	Power MIN (mW/cm <sup>2</sup> )	Power AVG (mW/cm <sup>2</sup> )	Power UE (%)	Energy (mJ/cm <sup>2</sup> )	Time (s)	Operation	
1	2601	UVALED-X1	516	535	63	407	11.8	4487	11.0	Delete
2	2602	UVALED-X1	804	807	0	410	0.0	5146	12.5	Delete
3	Data1	UVALED-X1	945	945	239	701	25.4	8783	12.5	Delete
4	Data2	UVALED-X1	1877	1929	212	1430	11.0	14352	10.0	Delete
5	2603	UVALED-X1	1481	4109	0	2492	0.0	34973	14.0	Delete
6	2604	UVALED-X1	2906	4774	405	2905	8.5	77076	26.5	Delete

## VII. Precautions

1. When not in use, please long press the  to power off the instrument.
2. Avoid contacting with corrosive materials and keep away from high humidity.
3. After shutdown, store it in a special packing box and keep it in a safe place. Protect the photosensitive part of the probe from polluting.
4. The recommended period of calibration is one year.
5. When the instrument is equipped with UVLED-X0, UVB-X0, UVALED-X0, UVALED-X1 and UVALED-X3 probes, if it is necessary to obtain the calibration certificate of the National Institute of Metrology, it is necessary to send it to the South China Institute of Metrology for testing. Before sending the UVALED-X0, UVALED-X1, and UVALED-X3 probes for testing, set the instrument's 'Standard Selection' option to 'JJG 879-2015 (国标)'. When sending the UVB-X0 probe to the metrology institute for testing, it is necessary to specify that the test should be conducted at the 310nm wavelength.
6. Because the UV probe is sensitive to humidity changes, the environment in which it is stored is important. When not in use for a long time, be sure to store the instrument in a low humidity environment.
7. If the instrument displays a low battery warning, it needs to be recharged.

## VIII. Packing list

No.	Description	Quantity	Unit
1	UV Light Meter	1	pcs
2	Probe	According to the numbers of probe ordered	
3	User manual	1	pcs
4	Calibration Report	1	pcs
5	Plastic box	1	pcs

## IX. Service

1. The instrument has one-year warranty. If the instrument works abnormally, please send the whole instrument to our company for maintenance
2. Provide users with spare parts and lifelong maintenance services
3. Provide the users with the meter calibration service
4. Free technical support for long term



Manufacturer: Shenzhen Linshang Technology Co., Ltd.

Website: [www.linshangtech.com](http://www.linshangtech.com)

Service hotline: 086-755-86263411

Email: [sales21@linshangtech.com](mailto:sales21@linshangtech.com)