

# UV Energy Meter

Code: 86138

User Manual V1.07

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

## I. Product Introduction

UV energy meter can measure UV energy, UV intensity and temperature at the same time. It is suitable for UV energy, UV intensity and temperature detection of UV curing machines, UV dryers, mobile phone UV coating machines, exposure machines, printing machines and other equipment. This meter is suitable for measuring the UV intensity and UV energy of UV LED light sources.

### Standards for the product

*JJG 879-2015 Verification Regulation of Ultraviolet Radiometers*

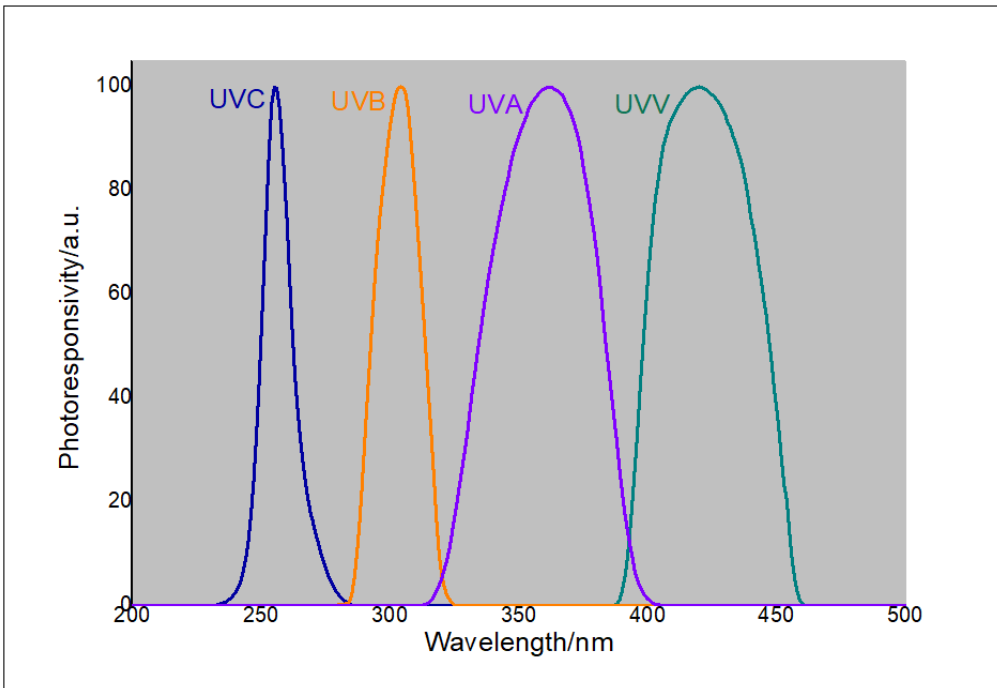
*QB/T 2826-2017 Ultraviolet curing offset ink*

## II. Parameters

Parameter	Specification
Spectral Range	UVC: 230nm-280nm ( $\lambda_p=254\text{nm}$ ); UVB: 280nm-315nm ( $\lambda_p=310\text{nm}$ ); UVA: 315nm-400nm ( $\lambda_p=365\text{nm}$ ); UVV: 395nm-445nm ( $\lambda_p=420\text{nm}$ );
Irradiance Measuring Range	0 ~ 2,000mW/cm <sup>2</sup>
Irradiance Resolution	0.01mW/cm <sup>2</sup>
Energy Measuring Range	0 ~ 999999mJ/cm <sup>2</sup>
Measuring Accuracy (H is the Standard Value)	H<5mW/cm <sup>2</sup> : $\pm 0.5\text{mW/cm}^2$ H $\geq 5\text{mW/cm}^2$ : $\pm 10\%H$ , $\pm 5\%$ (Typical)
Temperature Measuring Range	-55°C ~ +125°C
Sampling Speed	2048 times/second
Irradiance Data Storage Interval	32 times/second
Temperature Data Storage Interval	2 times/second
Recording Period	32 minutes
Power Supply	2 AAA alkaline dry batteries
Display	240×160 Dot matrix LCD
Dimension	Diameter 120mm x thickness 13mm
Weight	225g
Supply Voltage	DC3V

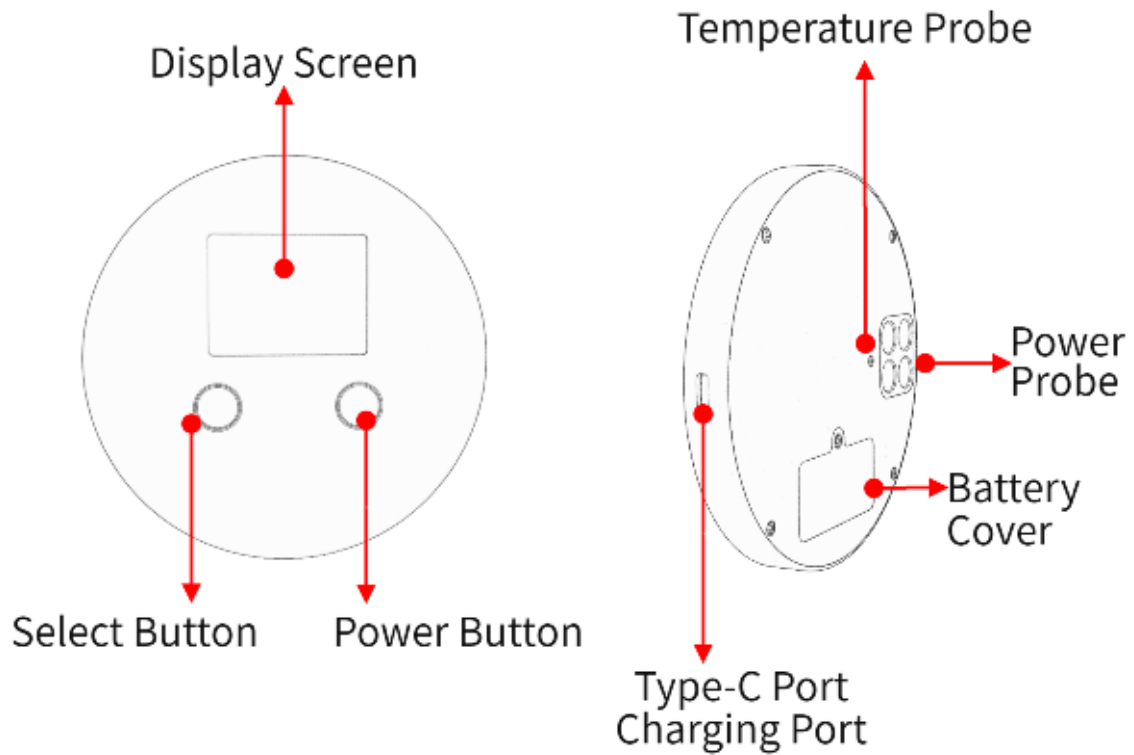
Operating Current	39mA
Operating Power Consumption	117mW
Working Temperature	0~100°C, 0~85%RH (no condensation)
Storage Temperature	-25~100°C, 0~85%RH (no condensation)

### III. Spectral response curve



### IV. Operation

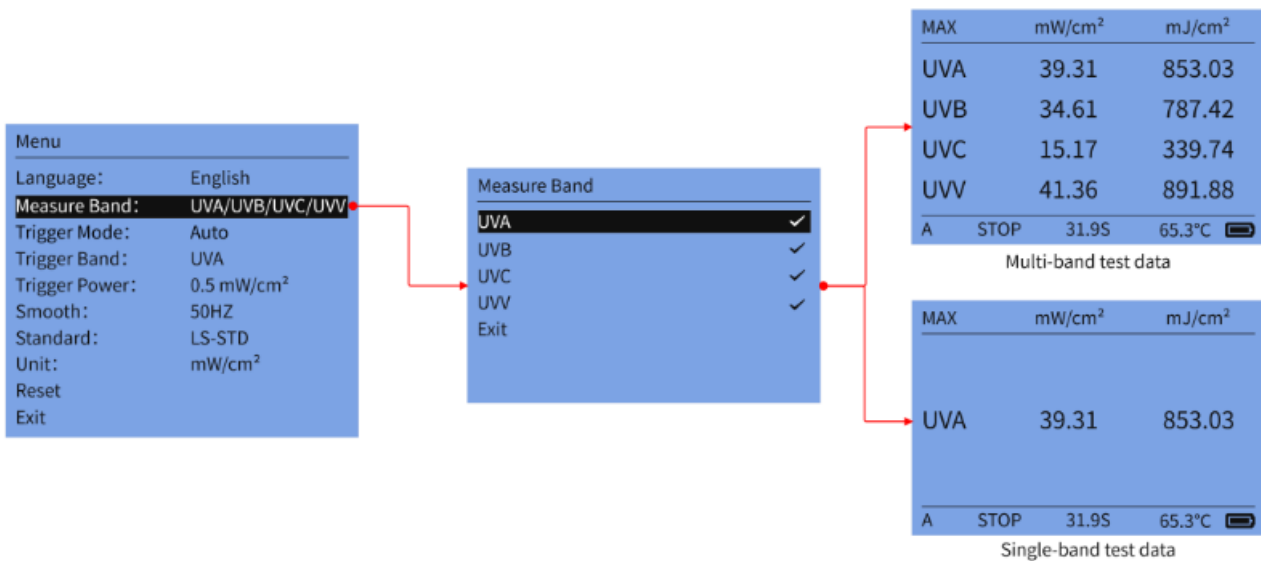
#### 1. Instrument structure



## 2. Parameter settings

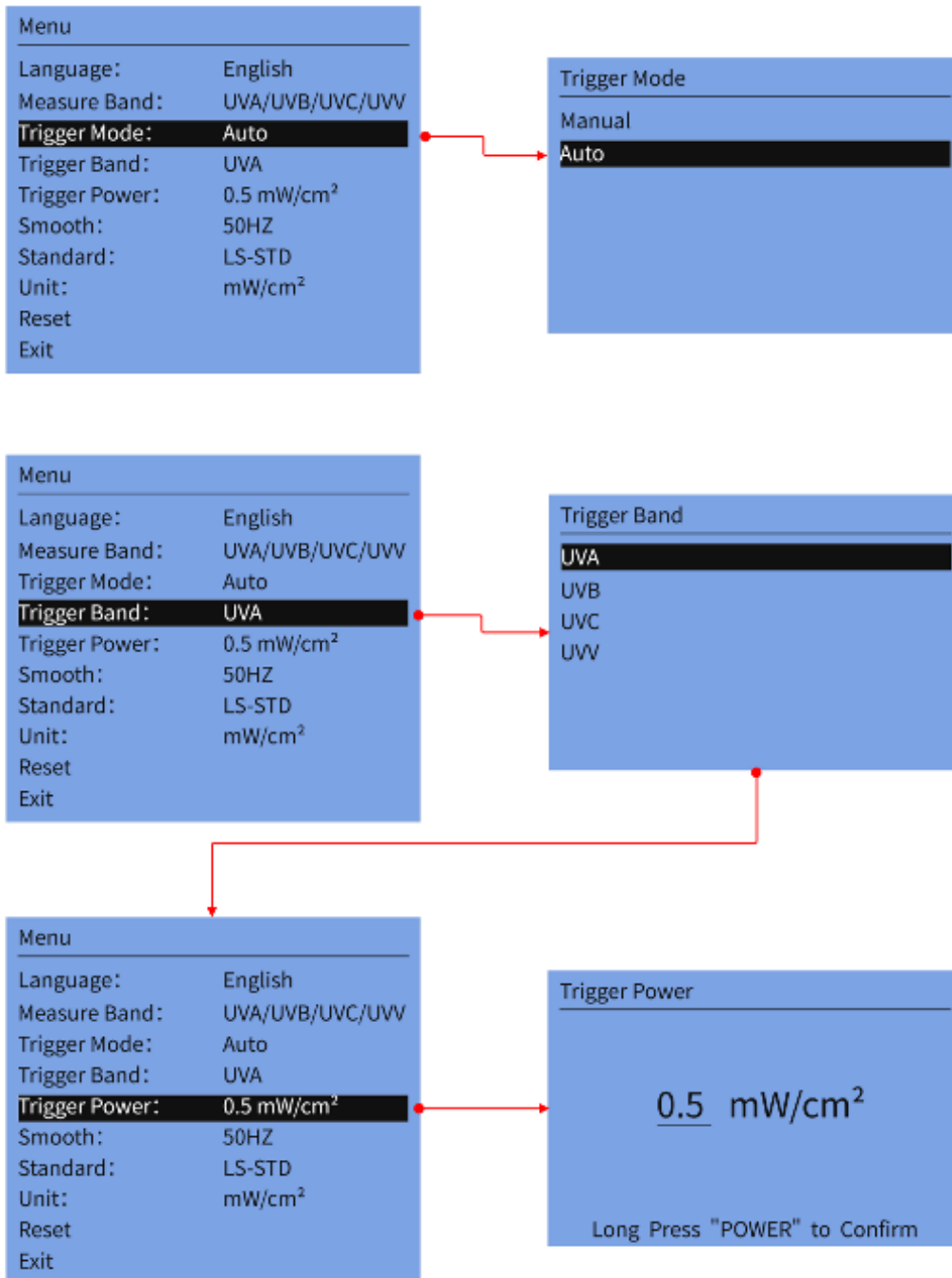
In OFF mode, long press the “POWER” button and go to the setting mode: In the setting mode, “SELECT” button is for selection and “POWER” button is for confirmation.

### A. Measure Band: UVA/UVB/UVC/UVV



**Note:** Select up to four measurement bands, and at least one band must be selected.

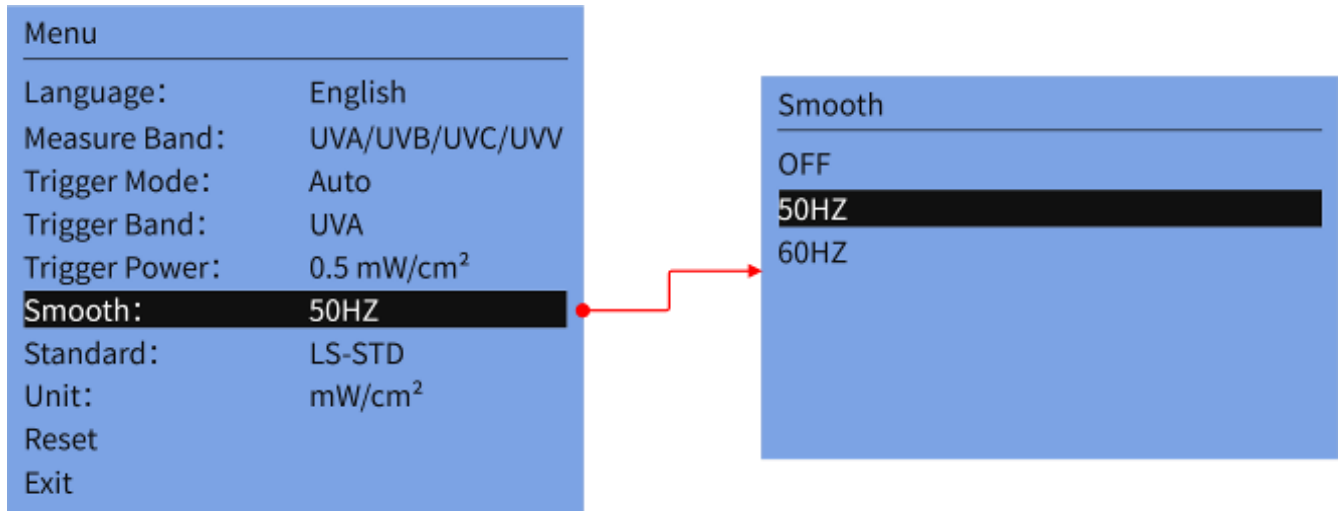
### B. Trigger Mode: Manual/Auto



### C. Smooth: OFF/50HZ/60HZ

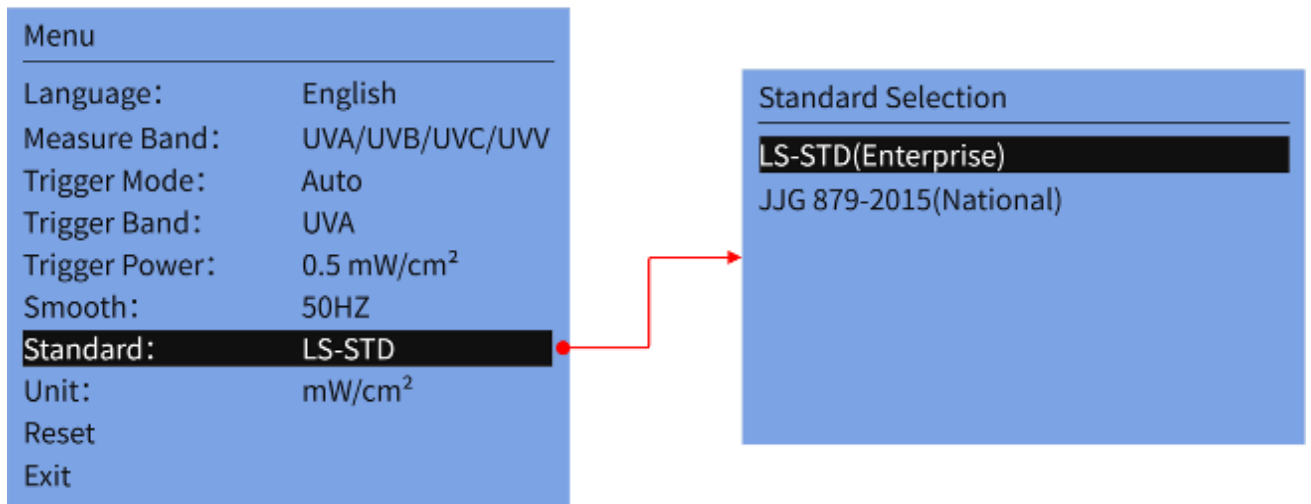
- **OFF:** this option can be selected if no smooth processing will be performed and the UV lamp is powered with direct current.

- **50HZ:** this option must be selected if frequency of the alternating current is 50HZ.
- **60HZ:** this option must be selected if frequency the alternating current is 60HZ.

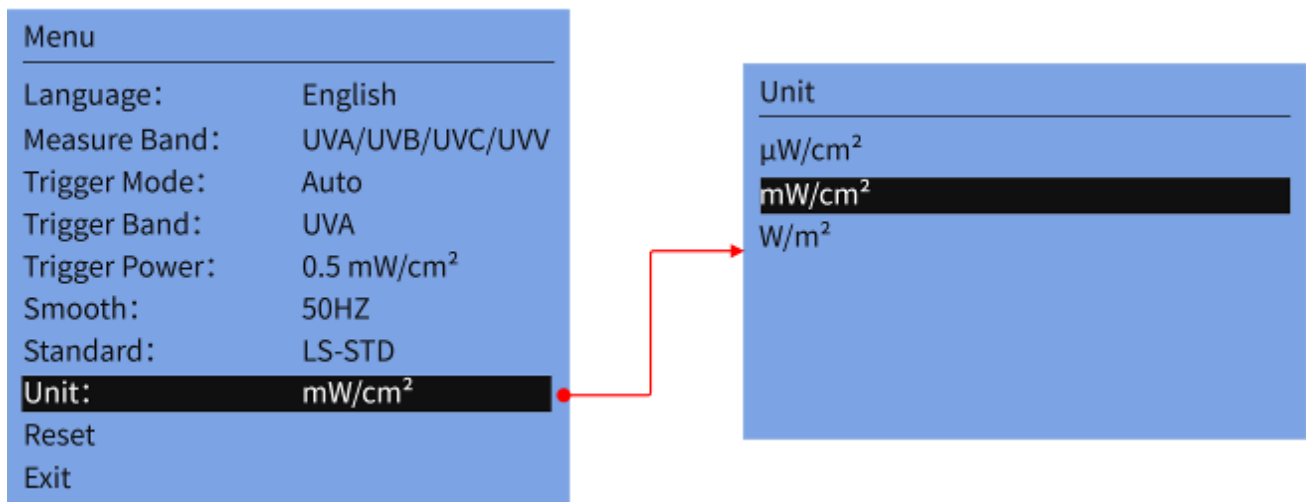


#### D. Standard: LS-STD (Enterprise), JJG 879-2015 (National)

- **LS-STD (Enterprise):** The instrument is calibrated according to the company standard.
- **JJG 879-2015 (National):** The instrument is calibrated according to the standards of the Institute of Metrology.



#### E. Unit: $\mu\text{W}/\text{cm}^2$ , $\text{mW}/\text{cm}^2$ , $\text{W}/\text{m}^2$



## F. Reset

Reset the factory default settings as follows:

Item	Language	Measure Band	Trigger Mode	Smooth	Standard	Unit
Reset	No Reset	UVA/UVB/UVC/UVV	Manual	50HZ	LS-STD	mW/cm <sup>2</sup>

## 3. Measurement

### A. Manual mode:

Short press the "POWER" button to follow the on-screen prompts and start a new measurement. The instrument will automatically enter the measurement (RUN) state. To end the measurement, short press the "POWER" button again or wait until the measurement duration reaches 32 minutes.

### B. Auto mode:

Short press the "POWER" button and follow the on-screen prompts to start a new measurement. The instrument will enter the READY state and automatically switch to the measurement (RUN) state once the trigger conditions are met. The measurement will end when the recording time reaches 32 minutes or if the trigger conditions are no longer met.

**Note:** For the recording time is only 32 minutes, if the production line is very long and need a long time to reach the UV Lamp position, the "AUTO" mode should be selected.

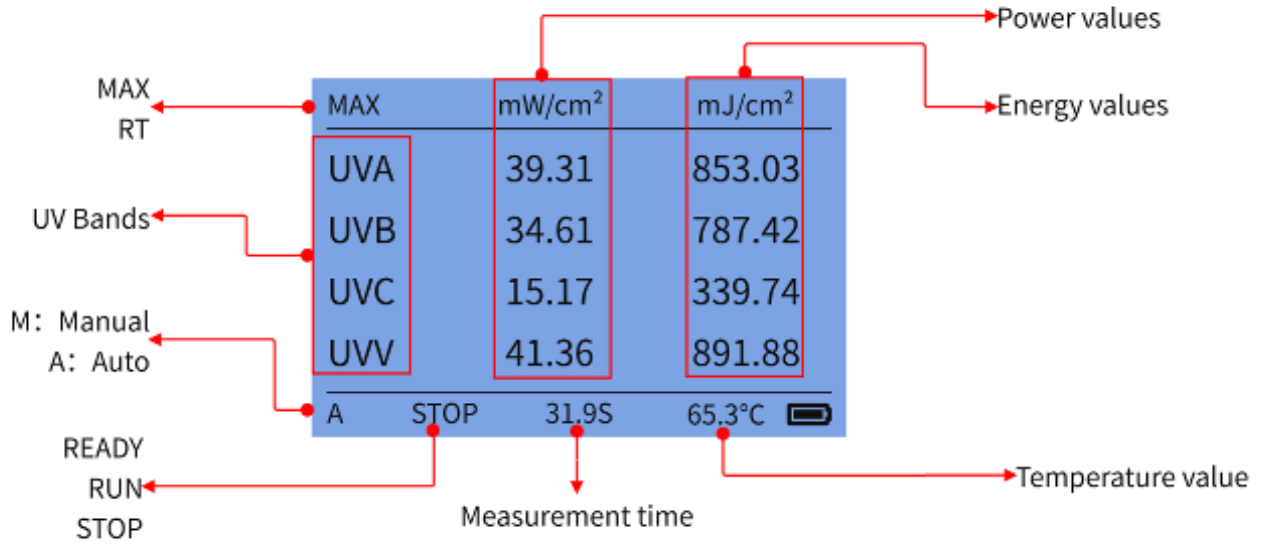
In the "READY" state, the maximum waiting time is 50 minutes. If the measurement is not triggered within this period, the device will automatically shut down.

### C. View data:

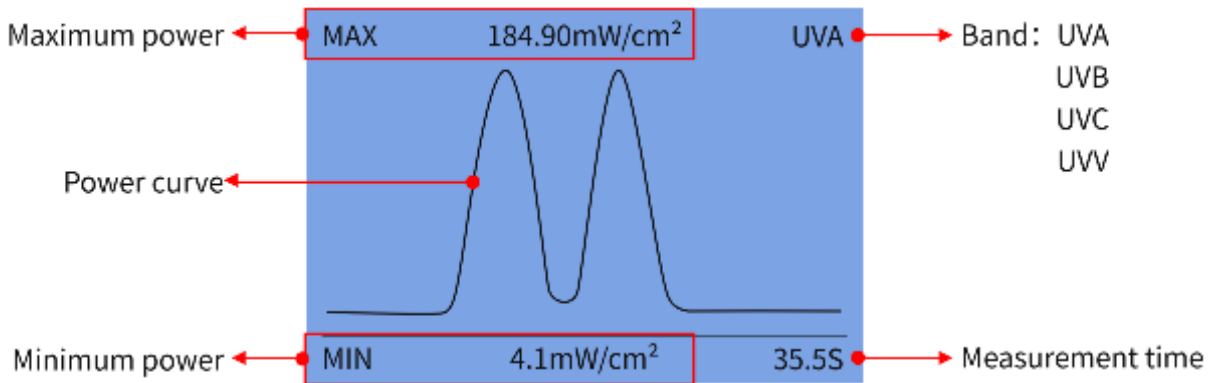
- Short press the "SELECT" button to switch to the maximum value interface, UVA/UVB/UVC/UVV

power curve interface, and temperature curve interface.

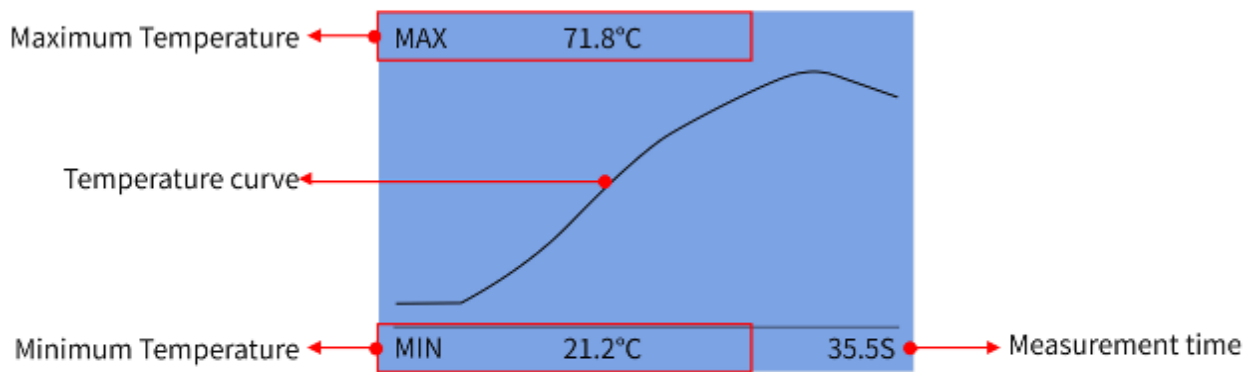
- In the STOP state, long press the "SELECT" button to clear the current test data.



Maximum value interface



Power curve interface



Temperature curve interface

## V. PC Software

The meter is equipped with a USB communication port and it can be connected to the computer with plugging in the USB cable and starting the special PC software, and the data in the meter can be read. The software has various functions, such as parameter configuration, data reading, each UV irradiance curve and temperature curve display, data irradiance export into EXCEL, temperature data export into EXCEL and report generation.

**Note:** The software is currently compatible with the Windows operating system.

The screenshot shows the 'UV Energy Meter V3.5' software interface. It features a top navigation bar with 'English' and '中文' buttons. The interface is divided into several sections:

- Device Information:** Contains input fields for 'SN: 138000105' and 'Firmware Version: 1.02'.
- Data:** Contains input fields for 'Energy mJ/cm<sup>2</sup>', 'Max Power mW/cm<sup>2</sup>', 'UVA', 'Max Temperature: °C', and 'Time: S'.
- Setup:**
  - General Setup:** Includes radio buttons for 'Language' (Chinese, English), checkboxes for 'Measure Band' (UVA, UVB, UVC, UVV), radio buttons for 'Smooth' (OFF, 50Hz, 60Hz), radio buttons for 'Standard Selection' (LS-STD(Enterprise), JIG 879-2015(National)), and radio buttons for 'Unit' (μW/cm<sup>2</sup>, mW/cm<sup>2</sup>, W/m<sup>2</sup>).
  - Trigger Setup:** Includes radio buttons for 'Trigger Mode' (Manual, Auto), radio buttons for 'Trigger Band' (UVA, UVB, UVC, UVV), and a 'Trigger Power' input field set to '0.3 mW/cm<sup>2</sup>'.
- Buttons:** A 'Read' button and a 'Setup' button are located below the setup section. At the bottom, there are buttons for 'Get Data', 'UV Power Curve', 'Temperature Curve', 'Report', 'Save UV Power', and 'Save Temperature'.

## VI. Notes

1. The meter sensor is at the back of meter
2. When not in use, please turn off the meter
3. Avoid contact with corrosive materials and keep away from high humidity
4. Please put it in the specialized package after power-off and keep properly
5. The suggested calibrating period is one year and our company has the standard light source and provides calibration service.
6. To obtain a calibration certificate from the national institute of metrology, the instrument must be sent to the south China institute of metrology for testing. Before sending, ensure that the instrument's "Standard" setting is configured to "JJG 879-2015 (National)".
7. For the UV sensor is very sensitive to humidity, the storage environment is very important. For a long time storage, please be sure to keep the meter in dry environment.

## VII. Packing list

No.	Description	Quantity	Unit
1	UV Energy Meter	1	pcs
2	USB Cable	1	pcs
3	Anti-static Gloves	1	pcs
4	Small Cross Screwdriver	1	pcs
5	User Manual	1	pcs
6	Calibration Report	1	pcs
7	Plastic Case	1	pcs

## VIII. Service

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

