UV Energy Meter

Code: 86136

User Manual V1.14

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 ultraviolet light in high-pressure mercury lamps, halogen lamps and other light sources.

Standards for the product

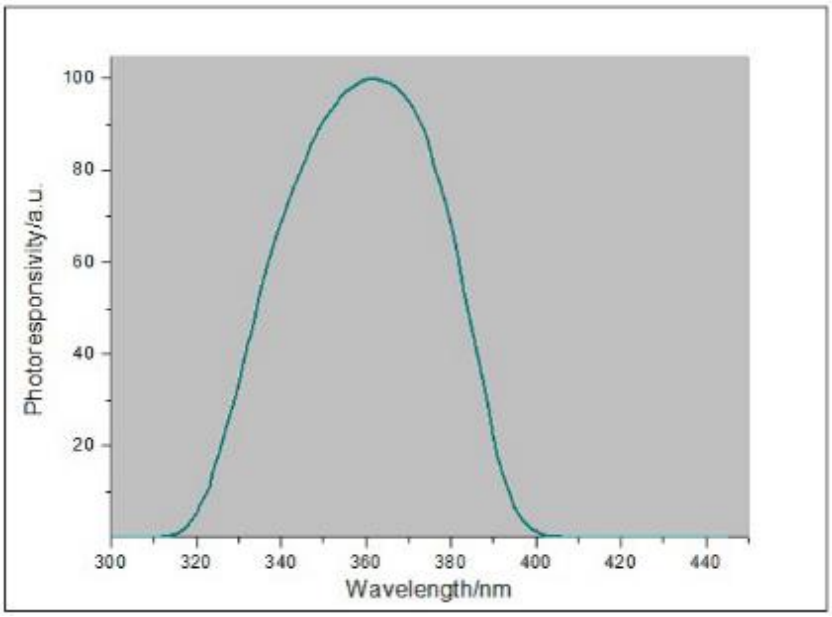
JJG 879-2015 Verification Regulation of Ultraviolet Radiometers

QB/T 2826-2017 Ultraviolet curing offset ink

II. Parameters

Parameter	**Specification**
Spectral range	315nm ~ 400nm, λp = 365nm
Irradiance measuring range	0 ~ 2000mW/cm²
Irradiance resolution	0.1mW/cm²
Energy measuring range	0 ~ 999999mJ/cm²
Measuring accuracy (H is the standard value)	H<5mW/cm²：±0.5mW/cm²， H>=5mW/cm²：±10%H, ±5% (typical)
Sampling speed	2048 times/second
Recording period	32 minutes
Temperature measuring range	-55°C ~ +125°C
Power supply	Rechargeable lithium batteries 3.7V@400mAh
Display	128*64 Dot matrix OLED
Dimension	Diameter 102mm * thickness 7.6mm
Weight	136g
Supply Voltage	DC5V
Operating Current	20mA
Operating Power Consumption	100mW

III. Spectral response curve



IV. Characteristics

1. High-precision and quick-response temperature detector, dynamically measuring the actual temperature in the UV curing machine.
2. Built-in timer, the meter can accurately record and display the UV curing time.
3. Metal shell, high temperature resistant design, the meter can run in an environment of 100℃ for a long time.
4. The stored data will not be lost when the power is off and the last test data will be displayed automatically after power on.
5. High accuracy, the meter can pass the inspection of China Institute of Metrology.

V. Operation

1. Parameter setting

In OFF mode, long press the “POWER” button for 3s and enter the parameter setting mode:

A. Trigger mode: Auto/Manual

Short press the “SELECT” button and select Auto/Manual

Select Auto, the automatic trigger mode, when the power value is greater than the selected trigger value, the measurement is automatically started.

Select Manual, short press the “POWER” button start a measurement and end a measurement.

Short press the “POWER” button to confirm and start another setting. Choose “Auto”, the meter enters the trigger power value setting interface; Select Manual, the meter enters the smooth setting interface.

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 must be selected.*

B. Trigger power: 0.1-5.0mW/cm² can be set

Short press the “SELECT” button to set the trigger power value and you can long press the button for quick setting.

Short press the “POWER” button to confirm the setting and the meter enters the smooth interface.

C. Smooth: 50HZ/60HZ

If the UV light source uses AC power supply, the frequency of the AC power will affect the accuracy of the power measurement. Short press the "SELECT" button to select the power frequency of the light source (select 50HZ for DC power supply).

- **50HZ:** 50HZ AC.
- **60HZ:** 60HZ AC.

Short press the "POWER" button to confirm the setting and enter the “STOP” interface.

D. Factory default settings

Trigger mode: Manual

Smooth: 50HZ

2. ON/OFF

- In POWER OFF state, short press “POWER” button to power on the meter. After turning on the meter, the meter displays the calibration coefficient, version number, serial number, etc. and then enters the last measurement interface (STOP interface). As shown below:

In the “STOP” interface, long press the “POWER” button to power off the meter.

- In the “STOP” interface, the meter will automatically power off in 3 minutes without any operation.
- In the automatic trigger measurement “Ready” state, the longest waiting time is 50 minutes. If the measurement cannot be triggered within 50 minutes, it will automatically turn off.

3. Measurement

In the measurement mode, three operation states exist:

READY: Ready state; in the auto trigger mode, this means the meter is waiting for triggering to begin a measurement.

RUN: Measuring state; this means the meter is measuring data.

STOP: Measurement is over.

In measurement interface:

M: Manual measurement mode

A: Auto measurement mode

1) **Manual measurement mode:** in the STOP interface. Short press the "POWER" button and then short press the "SELECT" button to confirm the new measurement, clear the historical data (display "-----"), automatically enter the measurement interface (RUN state) after 1s. The interface dynamically displays energy E, real-time power value P, real-time temperature value T, measurement time. Short press the "POWER" button or after 32 minutes, the measurement is over and enter the STOP interface. The interface displays the measurement result energy E, maximum power value P_{MAX}, maximum temperature value T_{MAX} and measurement time.

2) **Automatic mode:** After pressing the button to confirm the new measurement, the meter enter the READY state to clear the historical data and wait for the trigger condition (Trigger power) to be met, the energy display "----" and flashing. When the power value is greater than the set trigger power, the trigger condition is met, enter the measurement interface (RUN state). The interface dynamically

displays energy E, real-time power value P, real-time temperature value T and measurement time. When the recording time reaches 32 minutes or the power value is less than the set trigger power, the measurement is automatically ended and enters the STOP interface. The interface displays the measurement result energy E, maximum power value PMAX, maximum temperature value TMAX and measurement time.

In the stop status, long press the "SELECT" key to clear the current test data.

4. Charging

This meter has a built-in lithium rechargeable battery. Please charge it in time when the battery symbol on the screen is empty during use. After plugging in the charger, the energy bar in the battery symbol increases, indicating that it is charging. Charging can be done in the following ways:

1. Use an USB data cable, plug it directly into the USB port of the computer.
2. Use the matching 5V switching power supply.
3. The mobile power supply for smart phones.

VI. Measurement and Notes

1. The sensor must face the UV light source.
2. When not in use, please long press the “POWER” button 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. (The previous calibration time “Calibration: year/month/day” will be displayed on the boot screen.)
6. 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. Heat Shield

Equipped with heat shield to avoid damage to the screen caused by high-power UV lamps irradiating the instrument at close range.

No Heat Shield

Using Heat Shield

VIII. Packing details

No.	Description	Quantity	Unit
1	UV Energy Meter	1	pcs
2	USB data cable	1	pcs
3	DC5V Power adapter	1	pcs
4	User Manual	1	pcs
5	Calibration Report	1	pcs
6	Plastic Case	1	pcs
7	Heat Shield	1	pcs

IX. 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.