

USER MANUAL

UV ENERGY METER

PCE-UV 50

ENGLISH



User manuals in various languages (français, italiano, español, português, nederlands, türk, polski) can be found via our product search on:
www.pce-instruments.com

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

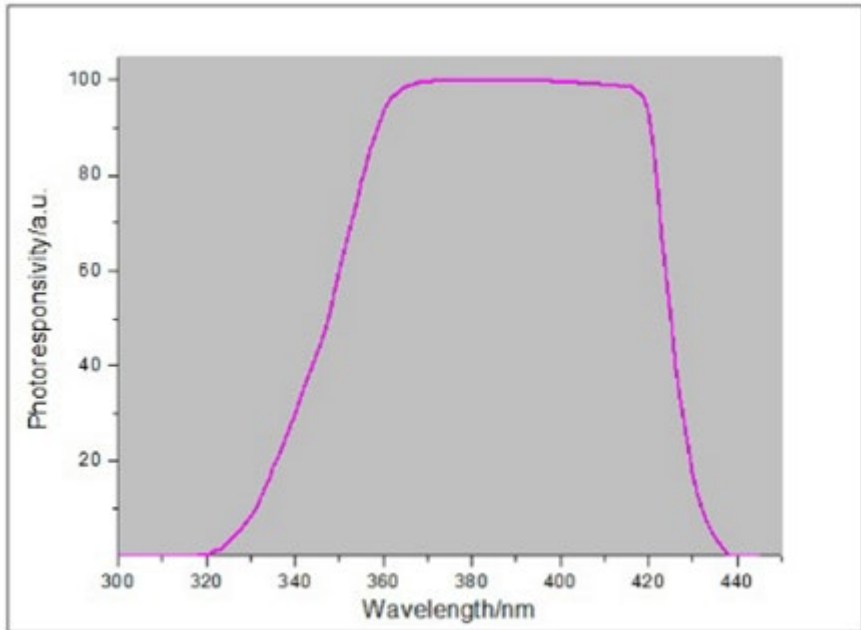
PARAMETERS

Spectral range	340nm ... 420nm, calibrated at 395nm
Irradiance measuring range:	0 ... 40000mW/cm2
Irradiance resolution	1mW/cm2
Energy measuring range:	0 ... 999999mJ/cm2
Measuring accuracy (H is the standard value):	H<50mW/cm2: $\pm 5\text{mW/cm2}$, H $\geq 50\text{mW/cm2}$: $\pm 10\%H, \pm 5\%H$ (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:	128x64 Dot matrix OLED
Dimension:	Diameter 102mm Thickness 7.6 mm
Weight:	136g

HEAT SHIELD

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

SPECTRAL RESPONSE CURVE



CHARACTERISTICS

- » Adopt ultra-small size design, the thickness is 7.6mm and the width is 44mm.
- » High-precision and quick-response temperature detector, dynamically measuring the actual temperature in the UV curing machine.
- » Built-in timer, the meter can accurately record and display the UV curing time.
- » Metal shell, high temperature resistant design, the meter can run in an environment of 100°C for a long time.
- » The stored data will not be lost when the power is off and the last test data will be displayed automatically after power on.
- » The meter provide two standard data, users can use Linshang standard and Chinese national standard.

OPERATION

Parameter setting

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

» 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.

» 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.

» 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.

» Standard Selection

Short press the POWER button to select the standard.

LS-STD: The meter is calibrated according to Enterprise standard

JJG 879-2015: The meter is calibrated according to Chinese national standard.

Short press the POWER button to confirm the setting, the meter enters the STOP interface.

» Factory default settings:

Trigger mode: Manual

Smooth: 50HZ

Standard Selection: LS-STD (Enterprise standard)

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:

E	3435	mJ/cm^2
P _{MAX}	305	mW/cm^2
T _{MAX}	38.3	°C
M	STOP	21 S

- » 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.

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

- » 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.



- » Automatic mode: After pressing the button to confirm the new measurement, the meter enters 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 P_{MAX}, maximum temperature value T_{MAX} and measurement time.



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

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:

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

MEASUREMENT AND NOTES

- » The sensor must face the UV light source.
- » When not in use, please long press the “POWER” button turn off the meter.
- » Avoid contact with corrosive materials and keep away from high humidity.
- » Please put it in the specialized package after power-off and keep properly.
- » 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.)
- » If the instrument needs to obtain the calibration certificate of the National Metrology Institute, it should be sent to the South China Institute of Metrology for testing, and before sending the instrument for testing, the „standard selection“ option is set to „JJG 879-2015“.
- » 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.

DISPOSAL

For the disposal of batteries in the EU, the (EU) 2023/1542 directive of the European Parliament applies. Due to the contained pollutants, batteries must not be disposed of as household waste. They must be given to collection points designed for that purpose. In order to comply with the EU directive 2012/19/EU we take our devices back. We either re-use them or give them to a recycling company which disposes of the devices in line with law. For countries outside the EU, batteries and devices should be disposed of in accordance with your local waste regulations. If you have any questions, please contact PCE Instruments.

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