UV Light Meter

Model: LS127C

User Manual V1.34

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

I. Product introduction

The UVC is also known as short-wave sterilization ultraviolet light. 253.7nm wavelength ultraviolet radiation from low pressure mercury lamp is widely used in ultraviolet sterilization industry. The UV light meter is specially designed to measure UVC intensity and energy values, which is widely applied in hospitals, CDC, pharmaceutical companies, FDA, etc. for UV intensity and energy measurement.

Standards for the product

JJG 879-2015 Verification Regulation of Ultraviolet Radiometers

WST 367-2012 Regulation of disinfection technique in healthcare settings

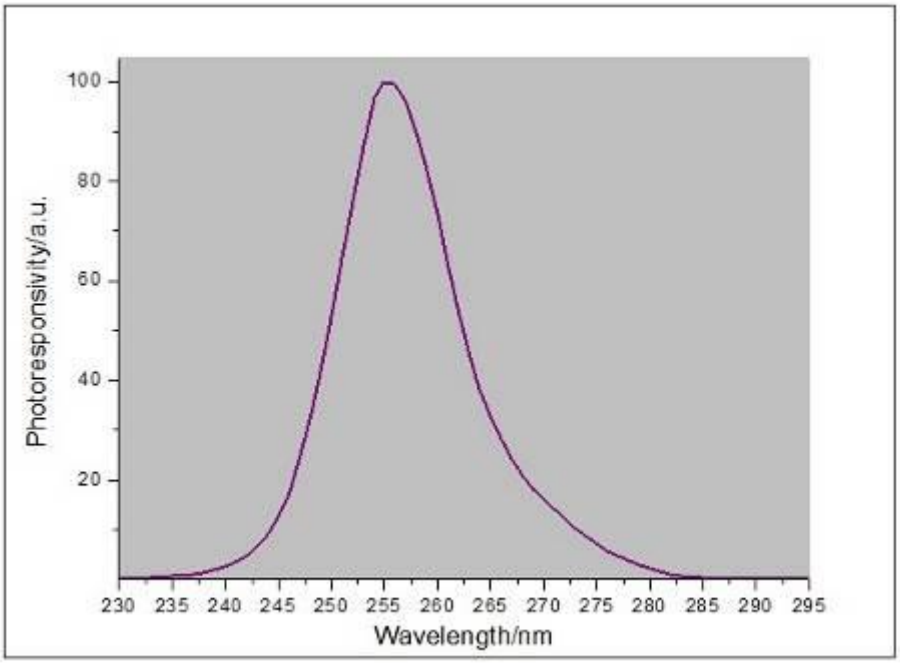
II. Technical Parameters

Spectral response	230nm-280nm, λp = 254nm
Power measuring range	0 - 20000 μW/cm^2
Power resolution	0.1μW/cm^2
Energy measuring range	0-9999999μJ/cm^2
Relative indication error (H is the standard value)	H<50μW/cm^2:±4μW/cm^2 H>=50μW/cm^2:±8%H (relative to NIM standard)
Long wave response error	<60%
Cosine characteristics (directional response) error	10%
Linearity error	±1%
Short-term instability	±1%(30min after startup)
Fatigue characteristics	Attenuation <2%
Error of zero	±0.1% of full scale
Response time	<0.5 seconds
Recording time	0~99999 seconds
Unit	μW/cm^2 (default)，mW/cm^2，W/m^2
Bluetooth transmission distance	50 meters (open area)
Instrument size	189mm * 76mm×31mm
Instrument weight	About 232 grams (including batteries)
Display	240*160 dot matrix LCD

Battery	2 AA alkaline dry batteries
Operating Temperature	0° to 40°C, <85% RH
Supply Voltage	DC5V
Operating Current	20mA
Operating Power Consumption	100mW

III. Spectral response curve

Use of high-precision UVC optical filters and professional UV sensor allows the instrument to almost give no response to UVA, UVB, visible light, etc.



IV. Product features

1. Specially designed for 253.7nm UV germicidal lamps (low-pressure mercury lamps).
2. Rich statistical functions, simultaneous display of current value, maximum value, minimum value, average value, measurement period, and energy value.
3. Data storage automatically before timing shutdown, which makes unattended measurements possible.
4. High-precision UVC optical filters and professional UV sensor, which allow the instrument to almost give no response to other wavebands.

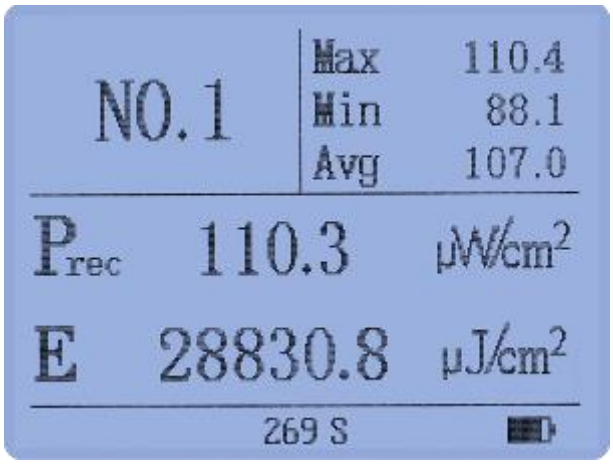
5. Equipped with USB interface and dedicated PC software featured with parameter configuration, data reading, exporting of UV power data to EXCEL, report generation functions.

6. Advanced digital probe technology, by which analog signal conversion to digital signal on the probe.

V. Operations

1. Power on/off

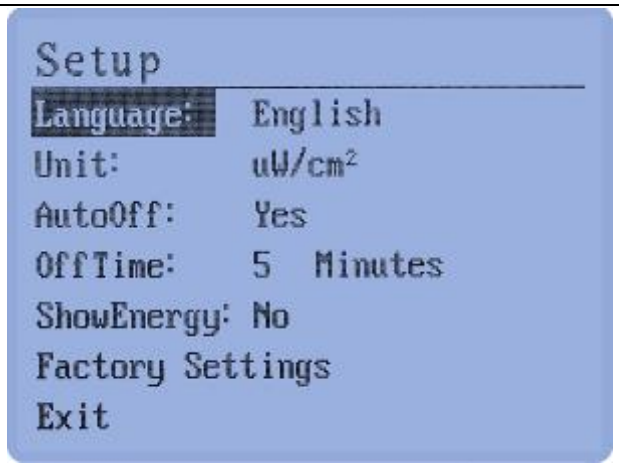
- **Power on**: Press Enter to power on the instrument. After powering on, the instrument displays the information of the version number, serial number and calibration coefficient. Then, the latest record is displayed, as shown below:



- **Power off:** Long press the Enter button to power off; or the instrument will automatically power off when "Auto Off" set to ON.
- The data recorded automatically before shutdown, when instrument power on, the latest recorded (No.1 record) displayed.

2. Parameter settings mode

In the off state, long press the Enter button 3s to enter the system setting mode. In the setting mode, there are seven sub-options, the ▲ and ▼ can select Language, Unit, AutoOff, OffTime, ShowEnergy, Factory Settings and Exit. Short press Enter to confirm selection.



A. Language

Short press Enter or Del to enter the language selection, ▼▲ button to select the language, short press Enter, and the setting is completed.

B. Unit

Short press Enter or Del to enter unit selection, ▼▲ button to select unit, short press Enter, and setting is finished.

C. AutoOff:

Short press the Enter or Del to enter auto power off selection, ▼▲ button to select [Yes/No] auto power off, short press Enter, then the setting is completed.

D. OffTime

Short press Enter or Del to select the shutdown time, ▼▲ to extend or shorten the shutdown time (long press to fast change the duration; may be set between 1-255 minutes), then short press Enter to finish the setting.

E. ShowEnergy

Short press Enter or Del to enter the shutdown time selection, short press ▼▲ to select [Yes/No] to display energy, and press Enter to end the setup.

F. Factory Settings

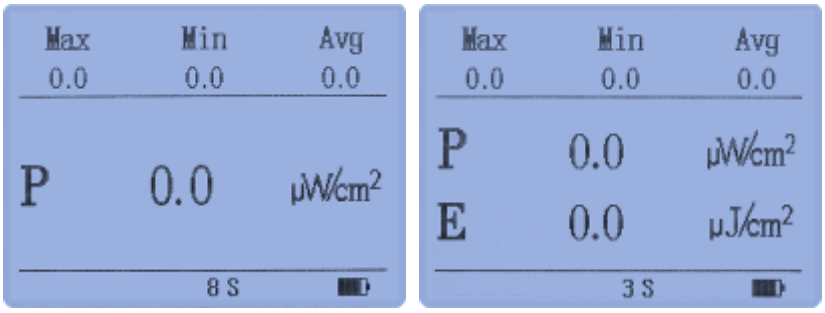
Short press Enter to enter the restore factory selection interface, Hold Del to switch the [Yes/No] option, short press Enter to confirm the option and return to the setting interface.

G. Exit

Press Enter briefly to exit the main menu and access the measuring interface.

3. Measurement mode

- In record data query mode, press the Enter button to enter the measurement mode. The system displays the real-time value of the power, maximum value, minimum value, average value, measurement duration, real-time clock and energy values (according to the setting whether to display).



- In the measurement mode, if the backlight is off, press the Hold button to light the backlight; if the backlight is already lit, short press the Hold button, and the “HOLD” icon will be displayed in the lower left corner of the interface. All data will be holding on the LCD, and the current data will be recorded.

- In the “HOLD” state, if the backlight is off, press the Hold button to light the backlight; if the backlight is already lit, short press the Hold button to cancel the HOLD state and start a new measurement.

- In the measurement mode, if the backlight is off, short press the Del button to light the backlight; if the backlight is already lit, press the Del button to clear up the current data and start a new measurement.

- In the measurement mode, short press ▲ or ▼ to enter the Record data query mode

4. Record data query mode

- After power on, enter the Record data query mode. The instrument will display the latest recorded data No.1 (up to 70 recorded data are stored in the instrument, and the oldest recorded data will be deleted automatically when exceed 9 recorded data).

- Short press ▲ or ▼ to scroll up or down a recorded data.

- Short press ▶ Del to display data deletion prompt interface, short press ◀ Hold ▶ Del to select [Yes/No], then short press ⏻ Enter to confirm.

- Short press the ⏻ Enter button to enter the measurement mode.

5. PC software operation

The instrument offers USB interface and the PC software. It provides multiple functions, such as reading of all the recorded data in the instrument on the PC software, exporting of the power data to EXCEL, printing of the report, etc. For details, please refer to the PC software and its user manual in the attached U disk.

VI. Measurement and precautions

1. When not in use, please long press the ⏻ Enter button to power off.
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. 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.
6. When the instrument displays Low Battery, replace the battery.

VII. China National Standard

1) WS/T 367-2012 "*Regulation of Disinfection Technique in Healthcare Settings*" Page 15, Appendix A.3 Effect monitoring of ultraviolet disinfection.
2) The 2009 version of "*Technical Specifications for Disinfection in Hospitals*" Page 9, 2.3 UV disinfection.
3) Ultraviolet germicidal lamp GB19258-2003 Page 4, rated value of ultraviolet radiation intensity.

The above three national standards stipulate the following:

1. The peak wavelength of the ultraviolet germicidal lamp (low-pressure mercury lamp) is 253.7nm, which has a germicidal function.
2. The radiation intensity of the new 30W straight tube ultraviolet lamp is greater than 100μW/cm^2 as

qualified.

3. The radiation intensity of the 30W straight tube ultraviolet lamp in use is greater than 70μW/cm^2 as qualified.
4. Different powers and different shapes of ultraviolet lamps have different radiation intensity values that are judged to be qualified.
5. The UV probe is placed at the center of the tested ultraviolet lamp at a vertical distance of 1 meter.

VIII. UV scale hook

In order to comply with UV germicidal lamp national standards, the UV light meter must be located at a vertical one meter below the middle of a lamp tube to measurement. Our company also provides UV scale hooks, which is 1m long. Place the instrument as shown below and hang it directly onto the lamp to facilitate on-site measurement of UV intensity.

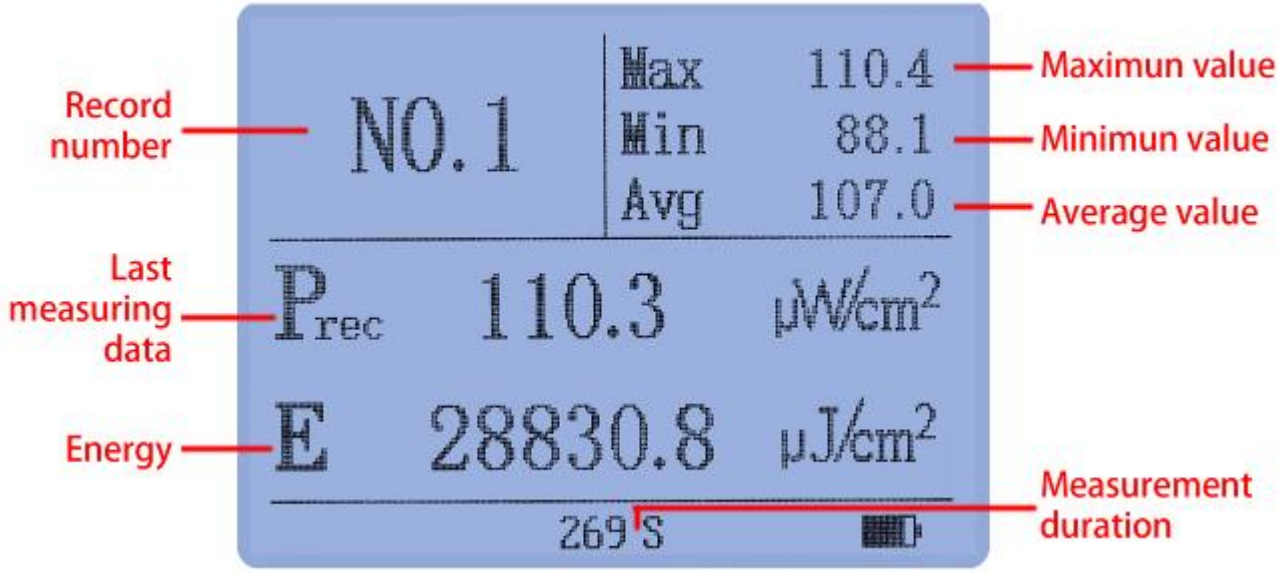
IX. Special instructions for germicidal lamp measurement

1. Determining whether UV lamp power is up to standard

In order to meet the requirements of disinfection regulations, the automatic shutdown time is not less than 5 minutes. It is recommended to set the automatic shutdown time to 10 minutes. The instrument can automatically power off (1 to 255 minutes optional), data recorded before automatic shutdown.

- No.1 recorded data is the latest recorded data. P_{REC} is the power value of the last shutdown time, which is used to determine whether the germicidal lamp is qualified.

- The tester places the instrument in the manner required by the test standard, turns on the instrument, and turns on the germicidal lamp before leaving the site. After the disinfection is completed, turn off the UV lamp (the disinfection time is generally much longer than 10 minutes, and the instrument has been automatically shut down at this time). The tester enters the site to turn on the instrument, and the data displayed on the instrument is the last measuring data.



X. Packing list

No.	Description	Quantity	Unit
1	UV Light Meter	1	pcs
2	USB cable	1	pcs
3	UV scale hook	1	pcs
4	Silicone Case	1	pcs
5	User manual	1	pcs
6	Calibration Report	1	pcs
7	Plastic box	1	pcs

XI. Service

1. The meter 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
Service hotline: 086-755-86263411
Email: sales21@linshangtech.com