

TENMARS

UVC Light Meter











TM-218

User's Manual



HB2TM2180001

Contents:

1.Application.....	1
2.Accessories	1
3.Safety Precaution	1
4.Instrument Description.....	2
4.1 Feature and function	2
4.2 Indication on the LCD display	3
5.Operation	4
5.1  ZERO	4
5.2  Data Hold:	4
5.3  The Max./Min. Values Hold:	5
5.4  Manual Record for One Log :	5
5.5  Auto Record	5
5.6  Read the record data	6
5.7  Backlight:	6
5.8  Disable or Enable Auto Power-off	6
5.9  Reset to factory settings	6
5.10  Settings: SET1~SET9	6
6.General Specifications	14
7.Electrical Specifications.....	15
8.Relative Spectral (Sensitivity).....	15
9.Maintenance or Repair	16
10. PRECAUTIONS	16
11. Battery Replacement	17
12. Product Disposal	17



1. Application

- Quickly determine the UV intensity of the factory's UV products
- UVC germicidal lamp intensity and aging measurement.

2. Accessories

- 1 Meter
- 1 UV sensor
- 1 User's Manual
- 1 9V alkaline battery
- 1 Carrying case

3. Safety Precaution

	<p>Caution! Please refer to this manual. Improper use may damage the meter and its components.</p>
	<p>Complies with European Directive.</p>

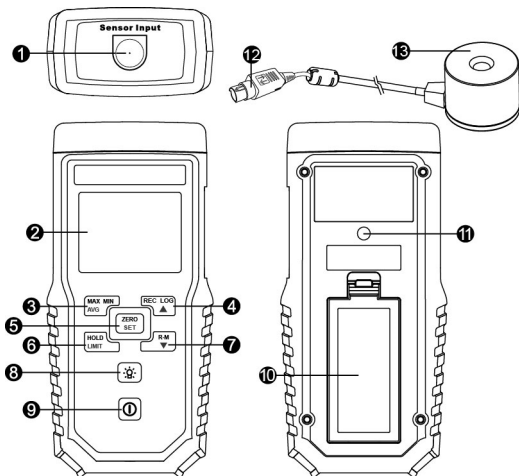
- Do not operate in environments with flammable gas or humid environments.
- Operating altitude: up to 2000M.
- Operating environment: Indoor use; Pollution degree 2.
- Clean with soft cloth when dirty, such as glasses cloth. Do not clean with chemicals and other solvents.

EMC: EN61326-1:CISPR 11:Group 1, Class B

- ✧ **Class B** – Equipment for use in all establishments other than domestic.
- ✧ **Group 1** – RF energy generated is needed for internal functioning.

4. Instrument Description

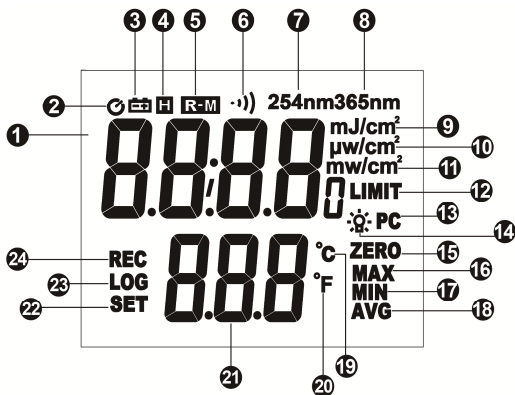
4.1 Feature and function



1. Sensor connecting jack
2. LCD display
3. Button for Maximum value /Minimum value / Average value
4. Button for Manual record data / Long-time record data /Up
5. Button for Reset / Setting

6. Button for Readings lock /Comparison
7. Button for Viewing record / Down
8. Backlight button
9. Power switch button
10. battery cover
11. Tripod nut
12. Sensor connecting plug
13. Sensing probe

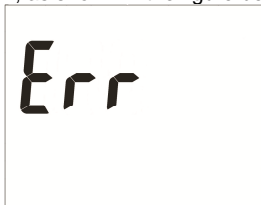
4.2 Indication on the LCD display





- | | |
|------------------------------------|---------------------------|
| 1. Primary display | 14. Backlight function |
| 2. Auto power-off | 15. Zeroing |
| 3. Battery low | 16. Maximum value locking |
| 4. Readings lock | 17. Minimum value locking |
| 5. Query memory data | 18. Average value |
| 6. Buzzer | 19.20. Temperature unit |
| 7.8. Calibration wavelength | 21. Secondary display |
| 9.10.11. Unit | 22. Setting |
| 12. Alarm | 23. Auto logging |
| 13. Connection to computer via USB | 24. Manual recording |


5. Operation

1. Firstly, insert the sensor connecting plug into the sensor connecting jack with the direction indicated on the meter's body (if not connected properly, the LCD will display Err when power-on, as shown in the figure below).




2. Press  to turn the power-on or off
3. When close to the front of the UV source and the readings not zeroed, press  to zero.
4. Align the sensor to the UV source to be tested, and read the measured value on the LCD.




5.1 ZERO

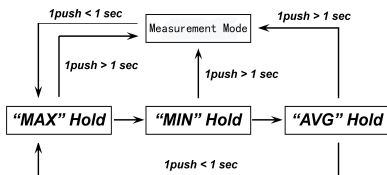
Before the light receiver close to the UV measurement and the previous readings displayed on the LCD, click  to clear off.

5.2 Data Hold:


Click  to enable or disable the readings lock.

5.3 The Max./Min. Values Hold:

Click  to activate the Min./Max./Avg. function, and then click  repeatedly, the max., min. and avg. value will appear in turn; press and hold  to quit. The max., min. and ave. values of all previous measurements can be locked and updated.




5.4 Manual Record for One Log :





Click  to store one log., the LCD will display "REC" symbol and the number of recorded logs simultaneously; for example: 10 logs will increase by 1 per click and up to 200 logs, and "FuLL" symbol appears if exceeding.

5.5 Auto Record


Pressed and held  for more than 2 seconds, the LCD displays **LOG** and auto-record starts. The record can be set according to the storage interval, up to 200 logs.

Again, press  to quit the auto recording.



5.6 Read the record data

Click  to enter the reading mode for recorded value, **R-M** symbol appears on the LCD simultaneously. Press  or  to read the logs. Press and hold  for more than 2 seconds to quit.




5.7 Backlight:

Press  to turn the backlight on or off. The backlight mode turns off automatically after 15 seconds.


5.8 Disable or Enable Auto Power-off


When power-on, press and hold  for more than 2 seconds to disable or enable auto power-off, followed by the automatic power-off symbol  disappears or displays accordingly.

5.9 Reset to factory settings


At power-off status, press  and then press , the LCD displays the boot screen and followed by  for 1 second, the factory settings restored and the memory cleared.


5.10 Settings: SET1~SET9

Press and hold  for more than 2 seconds to enter "SET", while "SET" flashes



Click  repeatedly to enter SET1~SET9 sequentially

※PS: Each setting will be stored instantly. If the setting period exceeds 15 seconds, it will be back to the measurement mode.

SET.1.  Set the buzzer to turn on or off the beep.


1. At the moment, LCD displays "SET1" and . As shown in the figure below:

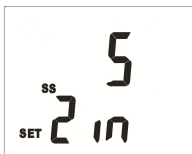





2. Press  or  to select **ON** (ON) or OFF.

3. Again, click  to enter "SET2".

SET.2. Auto Storage Interval Setting

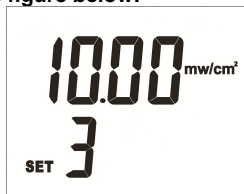
1. Followed by "SET1", the LCD displays " SET2" and  sequentially, as shown in the figure below:










- Press  or  to set the storage interval by 5 sec, 10 sec, 20 sec, 30 sec, 60 sec, 5 min, 10 min, 20 min, 30 min, and 60 min.
- Again, click  to enter "SET3".

SET.3. Alarm setting (LIMIT)

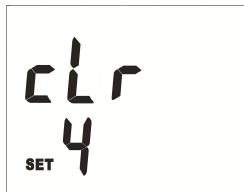
- Followed by "SET2", the LCD displays "SET3" LIMIT, as shown in the figure below:






- Press  to select mW/cm² or μW/cm².
- Press  to move the digit and select while the digit to be selected will flash.
- Press  or  to modify the settings. The default value of mW/cm² is 10.00mW/cm² and that of μW/cm² is 70μW/cm². Press  to switch between 10.00mw/cm² and 70uw/cm², press  to select the digit to be selected.
- Again, click  to enter "SET4".

SET.4. Memory Clear

1. Followed by "SET3", the LCD displays "SET4" and the symbol **CLr**, when **CLr** flashes. As shown in the figure below:







2. Click , while dFL flashes, click  again, dEL flashes for 4 times, and the memory is cleared.
3. Again, click  to enter SET5.

SET.5. Temperature Calibration

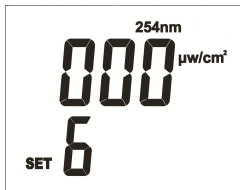
1. Followed by "SET4", the LCD displays "SET5" and the symbol °C or °F. As shown in the figure below:







- If to increase or decrease the displayed temperature value directly, press  to move the digit, while the digit to be selected flashes.
- Press  or  to modify the value.
- Again, click  to enter **SET6**.

SET.6. UV Light 254nm Calibration

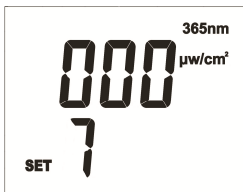
- Followed by "SET5", the LCD displays "SET6" and the symbol 254nm. **As shown in the figure below:**







- If to increase or decrease the value displayed at the 254nm calibration point directly, press  to move the digit, while the digit to be selected flashes.
- Press  or  to modify the value.
- Again, click  to enter " **SET7**"

SET.7. UV Light 365nm Calibration(TM-228)

1. Followed by "SET6" , the LCD displays "SET7" and the symbol 365nm. **As shown in the figure below:**





1. If to increase or decrease the value displayed at the 365nm calibration point directly, press  to move the digit, while the digit to be selected flashes.
2. Press  or  to modify the value.
3. Again, click  to enter "SET8".

SET.8. Switching °C°F

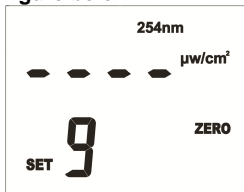
Followed by "SET7", the LCD displays "SET8" and the symbol °C or °F (the default is °C). As shown in the figure below:




1. Click  to switch between °C and °F,
2. Again, click  to enter "SET9".

SET.9. Replace the sensor setting with a new one

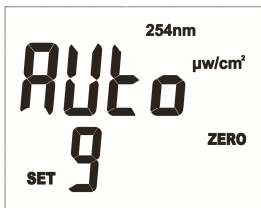
1. Followed by "SET8", the LCD displays "SET9", the symbols 254nm, ----, and ZERO, as shown in the figure below:




2. Press , the LCD displays AUTO.


3. Again, press  button again, the LCD , the LCD displays the word AUTO with flashing for 4 times, the sensor is calibrated automatically. (Require to execute one time only when replacing the sensor)

※As shown in the figure below:



4. Again, click  to quit the settings status.

6. General Specifications

- 4-digit LCD display, the max. value is up to 9999.
- UV intensity: 0~9999uw/cm², 10.00~40.00mw/cm².
- Locking for Max./Min./Ave. value
- Auto-switch band and locking data
- Display the UV intensity and temperature simultaneously
- Enable and disable auto-power-off
- Alarm setting LIMIT: The beep of auxiliary judgment for pass/fail from factory QC
- 200 logs for stored data with auto logging/manual record
- Sampling time: per 2 seconds.
- Battery low indicator 
- Weight: 320g (battery included)
- Power: 9V(NEDA 1604 IEC 6F22 JIS 006P)x 1
- Battery life: up to 100 hours (without alarm)
- Operation temperature and humidity: 0°C to +50°C, <80%RH (No condensation)
- Storage temperature and humidity: 0°C to +60°C, <70%RH (No condensation)
- Dimensions:

Meter	143(L) x 65(W) x 37.5(H) mm
Sensor	39.5 φ x 30.5(H) mm
- The line length of the light receiver: approximate 100 cm.

7. Electrical Specifications

Accuracy is indicated as [% reading + digital] Environmental conditions at $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ with $\text{RH} < 80\%$.

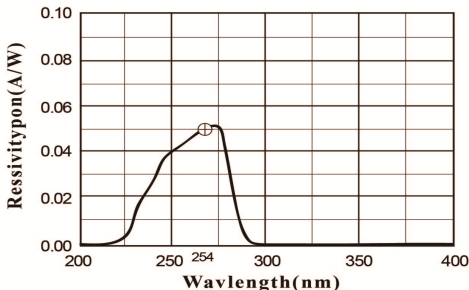
UV Irradiance Measurement Range

Model	TM-218(UVC)
Spectrum Range	220nm~280nm
Calibration Point	254nm
Range	$1\mu\text{W}/\text{cm}^2 \sim 40.00\text{m W}/\text{cm}^2$
Accuracy	$\pm 4\% + 1\text{digit}$
Resolution	$1\mu\text{W}/\text{cm}^2, 0.01\text{ m W}/\text{cm}^2$


Temperature:

Range	$0.0^{\circ}\text{C} \sim 70.0^{\circ}\text{C} (32.0^{\circ}\text{F} \sim 158.0^{\circ}\text{F})$
Accuracy	$\pm 1.0^{\circ}\text{C} (\pm 2.0^{\circ}\text{F})$
Resolution	$0.1^{\circ}\text{C}/0.1^{\circ}\text{F}$

8. Relative Spectral (Sensitivity)

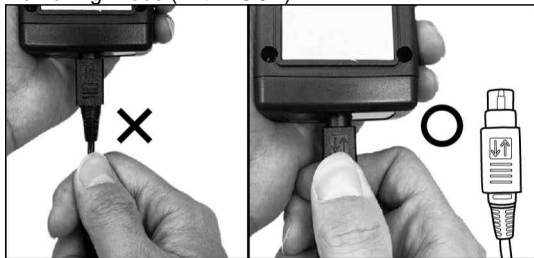


9. Maintenance or Repair

1.  appearing on the LCD display indicates the battery low. Please replace the battery immediately to ensure the accuracy.
2. Please use a soft cloth, such as glasses cloth, to wipe the meter for the dirt and not use chemical solvents.
3. If not using for a long time, please remove the battery to prevent the leakage of battery fluid which may corrode the internal components.
4. In case of malfunction, the meter can only be sent to the authorized service suppliers or back to the original factory for maintenance.

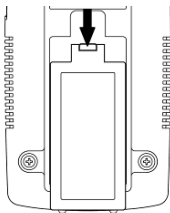
10. PRECAUTIONS

Removing Probe (With LOCK) :




11. Battery Replacement

1. Turn off the power.
2. Open the battery cover at the back of the meter, remove the batteries.
3. Please insert new 9V batteries according to the polarities.
4. Put the battery cover back in place.



Warning

As battery low icon  appears on the LCD display, please replace the battery immediately by the correct steps.

12. Product Disposal



Note: This symbol indicates that the meter and its accessories must be separated and processed properly.



TENMARS



Professional Electrical and Environment Test & Measurement Instruments:

LED light meter, Temperature & Humidity
meter, Infrared Thermometer, Sound level meter,
Light meter, EMF meter, UV Light meter, RF
meter, Hot wire Anemometer, Co
meter, Anemometer, Lan cable tester, Co2 meter,
Solar power meter, Radiation meter,
Clamp meter, Multimeter, Phase Rotation test,
Digital Insulation tester

**Our products of high quality are selling well
all over the world**

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