

# Instruction manual

## APM092



Product may vary from picture.

- To ensure safety, please read this manual carefully before installation and follow the instructions herein.
- Store this manual in a secure place for future reference
- WARNING: CHOKING HAZARD - Accessories contain small parts
- Printed by color ink, water will smudge

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## Preparation for use

Please ensure that you are familiar with the operation of your measuring device and do some test measurements to ensure the proper function of the device. If you are using it for quality inspections or for expertise please check if the instrument is calibrated and it is within the defined calibration interval. Our company assumes no liability for consequential damages.

## Safety Precautions

Please read these safety precautions carefully before using your measuring device. This will help you to avoid damaging the product and prevent personal injury.



This icon identifies important warnings which should be read in any case before the initial start-up of your GOSSEN product.

## Warnings



**Store the measuring device at a location which cannot be accessed by children.**

The measuring device and its accessories include parts which can be swallowed. Make sure that these parts (e.g. housing covers, battery etc.) do not fall into the hands of children who might swallow them. Otherwise, danger of suffocation prevails.



**Avoid any and all contact with liquid crystals.**

If the display is damaged (e.g. broken), danger of injury due to contact with glass shards or discharge of liquid crystals exists. Make sure that skin, eyes and mouth do not come into contact with the liquid crystals.



**Handle batteries with care.**

Rechargeable and normal batteries may leak or explode if handled incorrectly. Please adhere to the following safety precautions:

Only use the batteries which are recommended for this meter.

Make sure that the battery is inserted correctly.

Never short-circuit batteries, and never attempt to open a rechargeable or a normal battery.

Do not expose the batteries to excessive heat or open flames.

Do not expose the batteries to moisture; never immerse batteries in water.

If the meter is not used regularly, remove the battery and close the battery compartment cover

Never store batteries together with metallic objects which might cause short-circuiting.

Danger of leakage exists, especially in the case of empty batteries. In order to prevent damage to the measuring device, batteries should be removed when fully depleted or in case of lengthy periods of non-use.

When not in use, batteries should be stored in a cool place.

Batteries heat up during use and may become hot. Be careful not to burn yourself when removing batteries.

Switch the measuring device off or wait until it has shut itself down, and then wait a bit longer until the battery has cooled down.

Do not use batteries which show any signs of damage such as discoloration or deformation of the housing.



This icon indicates that this product must be disposed of separately.

## Getting Started

Hello there! Congratulations on your new APM092 product! Our products are packaged and shipped with the utmost care. In the unlikely event that your item is incorrect, incomplete, or unsatisfactory, please contact us and we will see to fix it immediately.

The Quantum meter is designed to measure PAR (Photo synthetically Active Radiation) flux in wavelengths ranging from 400 to 700nm. There is a proportional relationship between the number of photons absorbed in 400 to 700nm band and the rate of photosynthesis in plants, which is important for horticultural studies and monitoring plant physiology.

## Package Contents

1. PAR Meter Unit
2. User Manual
3. 2x AAA batteries

Main unit includes ¼" screw mount for tripod and selfie stick compatibility"

## Features at a Glance

**Convenient everyday use** – Easy operation, easy to read display, compact design.

**Record data** – 100 measured values can be recorded and retrieved.

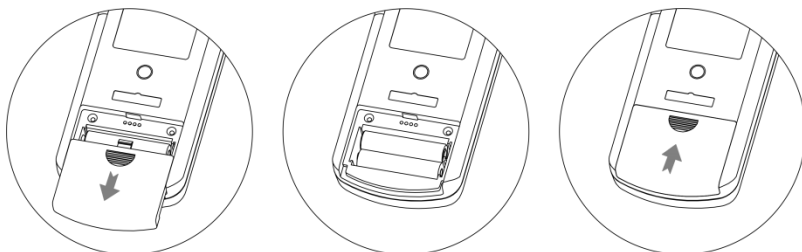
**The last 4 records Show** –Real-time display of the last four recorded data on LCD.

**"Hold" function** –Display HOLD Function.

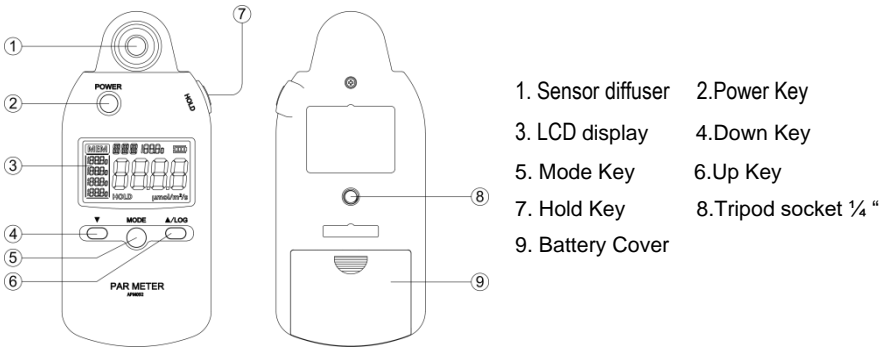
**MAX MIN AVERAGE** –MAX, MIN, AVERAGE data auto record after power on.

## Operating Instructions

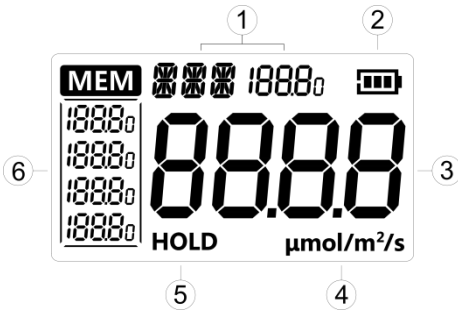
Initial Setup: When first unboxing, please open the battery cover, and pull out the battery insulator. All the LCD segments will be on. Then the quantum meter beginning measurement. Usually, your product is ready, no need to initial setup or calibration.



1. Open the battery cover
2. Insert two AAA batteries into the battery compartment.
3. Close the battery cover



- 1. Sensor diffuser
- 2. Power Key
- 3. LCD display
- 4. Down Key
- 5. Mode Key
- 6. Up Key
- 7. Hold Key
- 8. Tripod socket ¼ "
- 9. Battery Cover



- 1. Menu or MAX, MIN, AVERAGE data
- 2. Battery indication
- 3. Display of measuring value
- 4. Measuring Unit
- 5. Display „HOLD„ indication / Buffer Storage
- 6. The last 4 records Show

## Power on/off

Press the Power Key on the right side of the main unit to turn on the quantum PAR meter. Press and hold the Power Key for 3 seconds to turn off the quantum PAR meter. If for approx. 3 minutes none of the keys of the PAR Meter is pressed down, the instrument will be turned off automatically.

## Hold function

Press Hold Key to hold the measurement value, Press Hold Key again to exit hold function. This function in order to enable you to make measurements in very low light conditions and to read them out later in brighter light conditions.

## Record function

Press UP Key to record the measurement data. The PAR Meter has been provided with a memory space for up to 100 measured values. This function allows the user to make several measurements in the field and then to view them later. The data stored in the memory will be maintained, even if the meter is turned off or if the battery is changed. And the last four recorded data real time display on LCD for quickly view. Read more record data please check the Mode functions of "REC" option.

## MAX/MIN/AVE/REC indication

Press DOWN Key to switch the display of the maximum, minimum, average values and logger data index.

## MODE Functions

Press MODE Key to switch the Menu

### REC Read record data

When "REC" is flashing, Press Hold Key to entry, LCD will display the record data of the current index, press Up/Down Key to check the history data, press Hold Key or Mode key to exit this mode

### CAL ZERO point calibration

When "CAL" is flashing, Press Hold Key to entry, the LCD display "no" with a flashing, press Up/Down Key to change. When the LCD display "Yes", press Hold Key to ZERO point calibration

(Note: the photosensitive portion must be completely covered during calibration)

### RES Restore factory setting

When "RES" is flashing, Press Hold Key to entry, the LCD display "no" with a flashing, press Up/Down Key to change. When the LCD display "Yes", press Hold Key to Restore factory setting

(Note: Restore factory setting will erase all stored record data, and clear ZERO point calibration parameters)

## Specifications

Typical test conditions, unless otherwise specified: Ambient Temp =23+/-3° C, RH=50%-70%, Altitude=0~100 meter

Measurement	Spec
Operating Temperature	32°F to 122°F (0°C to 50°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Operating & Storage RH	0-95%, non-condensing
<b>PPFD Measurement</b>	
Repeatability	+/-1 µmol/m <sup>2</sup> /sec
Measurement Range	0-5000 µmol/m <sup>2</sup> /sec
Display Resolution	0.01 µmol/m <sup>2</sup> /sec (0-99.99); 0.1 µmol/m <sup>2</sup> /sec (100-999); 1 µmol/m <sup>2</sup> /sec (1000-5000)
Measuring Rate	1 measurements per second
Cut-On Wavelength	400+/-10nm
Cut-Off Wavelength	700+/-10nm
Power Requirements	2 x 1.5 V size AAA alkaline manganese cell or suitable rechargeable battery
Dimension	115 x 60 x 24mm
Weight	115g (without batteries )