Detachable Full-Spectrum
PAR Meter

860054

Instruction Manual

PREPARATION
1. Install 2pcs AAA batteries
2. Using enclosed suitable RJ11 cable to connect PAR sensor with meter

POWER UP / OFF
1. Press orange power key on the right side of meter to turn the meter on.
2. Press orange power key more than 3 seconds to turn off

HOLD
Press **HOLD** key to freeze reading.
Press again to release.

LOG
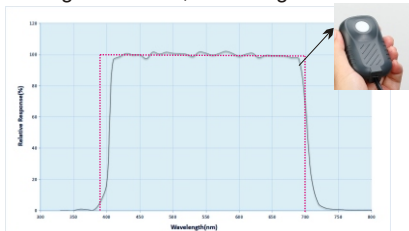Press **LOG** key to memorize reading.
Max. 99 points

MODE
Press **MODE** key to choose calibration or LOG recall or factory reset.
Press Enter key to enter the mode you want.

INTRODUCTION

Thank you for purchasing this accurate full-spectrum PAR meter. It is designed to measure Photo synthetically Active Radiation, PAR) flux in wavelengths ranging from 400 to 700nm. There is a proportional relationship between the number of photons absorbed in 400 to 700nm and the rate of photosynthesis in plants, which is important for horticultural studies and monitoring plant physiology.

Features :

- Stable measurement of PAR (PPFD Photosynthetic Photon Flux Density) in unit of μmol/m^2/second.
- Provided with 2 high quality RJ11 ethernet cables. Probe is replaceable.
- Hold function to freeze data in dark place and then check later on.
- 99 points manual log and recall to skip note and pencil.
- Low power indicator for battery change
- Auto power off to save battery power.
- Tripod mount hole is on the rear side of PAR sensor.
- Provided with selfie stick to extend the measurable range of sensor.
- High accuracy for 400 to 700nm under all light sources, including LEDs.
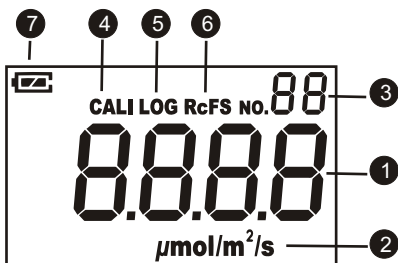

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MATERIAL SUPPLIED

This package contains:

- ✓ The meter x 1
- ✓ PAR sensor x 1
- ✓ Straight RJ11 cable x 1
- ✓ Coiled RJ 11 cable x 1
- ✓ Selfie stick x 1
- ✓ Battery x 2 (AAA size)
- ✓ Operation manual x1
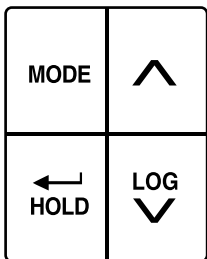- ✓ Hard carry case x1

Optional accessory:

Spare PAR sensor with coil cable & straight cable.

LCD DISPLAY

1. PAR value
2. PAR unit
3. Memory points & Hold icon
4. Zero calibration icon
5. Log recall icon
6. Restore to factory setting icon
7. Battery low voltage indicator

KEYPAD

POWER

⏻ -Press to turn the meter on.
POWER -Press >3 seconds to turn off.
  -Auto power off while keypad is idle
  for 5 minutes.

LOG -Press to memorize reading.
  Maximum 99 points.

HOLD -Press to freeze reading.
  -Press again to release.

MODE -Press **MODE** key to choose
  calibration or LOG recall or factory
  reset.

∧ -Scroll up or down to check the
∨ logged record while in log recall
  mode.
  -Change setting YES or NO while
  in reset mode.

← -Press to enter the mode you want.
  -Long press > 3 seconds in zero
  calibration and factory reset mode
  to confirm the execution.

MEASUREMENT

1. Using enclosed suitable RJ11 cable to connect PAR sensor with meter

2. Face the white PAR sensor detection area to the light source that you want to measure.

3. If the place you stand is too dim to check reading, press HOLD key to freeze reading and check in brighter place.

4. If you have more than one space to measure, press LOG key to record and then review in recall mode later on. Free your hands from pencil and note.

5. To review logged data one by one. First, press MODE key to find "LOG". Press " ← " to get in. Then press " ∧ or ∨ " to review one by one. Press " ← " to quit review.

6. To delete all logged data, please see restore to factory setting section for the operation details.

CALIBRATION (ZERO)

After certain time of usage, such as one year time, you can do zero function if the measured value is not zero while in completely dark place.

1. Make sure the PAR sensor is fully covered while you plan to execute zero function.

Fully covered

2. Press MODE key to find "CALI". Press " ↵ " to get in. Then press "↵" more then 3 seconds to execute. It will show "PASS" while zero function is done. Finally, press "↵" to quit.

FACTORY SETTING

1. This allows you to erase all logged data and restore to factory setting if you do zero function improperly.

2. Press MODE key to find "RcFS". Press " ↵ " to get in. Then press " ∧ or ∨ " to choose Yes or No. To confirm it, press "↵" more then 3 seconds to execute. It will beep once while reset function is done and quit to normal status automatically.

MAINTENANCE

While doing measuring, make sure the white PAR sensing area is uncovered and face to light source.

After usage, clean the surface by soft tissue and keep it dry for storage. You may store it in the hard carry case we provide to avoid scratch and dust.

WARNING: Don't immerse sensor or meter into water. This is not a waterproof device.

LOW-BATTERY

The battery icon shows the battery power status in three levels: Good, Middle and Low.

When the battery icon starts to flash, it means the battery power status is low, please replace with 2 fresh batteries to ensure accurate measurements.

Before long term storage, please be sure to remove batteries to avoid liquid leakage risk.

TROUBLESHOOTING

1. Power on but no display
   1) Make sure the time of pressing **power** key is more than 0.2 second.
   2) Check the batteries are in good contact with correct polarity.
   3) Replace new batteries and try again.

2. Display shows " - - - "
   PAR sensor isn't connected. Please re-connect and also check the cable and connector. Should be no object attached to RJ11 connector.

SPECIFICATION

Model	8583
Spectral Range	400±10nm ~ 700±10nm
Measurement Range	0~4000μmol/m²/sec
Display resolution	0.1μmol/m²/sec for 0~999 , 1μmol/m²/sec for 1000~4000
Accuracy	±5 or ± 5% of reading, whichever is greater
Repeatability & Non-linearity	±1 μmol/m²/sec Less than 3 % (up to 4000 μmol/m²/sec)
Long-term Drift per Year	Less than 2 % per year
LCD update time	0.5 second
Field of View	180°
Directional (Cosine) Response	± 5 % at 75° zenith angle
Calibration Uncertainty	±5%
Temperature Response	±0.02%per °C
ZERO function	YES
RESET function	YES
LCD size	25(H)x40(W)mm
Operating temp.	0~50°C
Operating RH%	Humidity<80%
Storage temp.	-10~50°C
Storage RH%	Humidity < 90%, no condensation
Dimension	Meter:115(L)x60(W)x24(H)mm PAR sensor:80(L)x45.6(W)x26(H) mm
Cable	12 ft straight RJ11 cable , 4.9 ft coiled Rj11cable
Selfie stick	22 cm storage , 100cm extended
Weight	~115g (w/o battery and cable)
Power Supply/Consumption	AAA battery x 2pcs, less than 10mA
Standard Package	Meter/PAR sensor/Straight cable/Coiled cable/ Selfie stick/Battery/Manual/Hard carry case

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **one (1) year** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will void the warranty.

To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC
8281 East Evans Road, Suite #103
Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.