LED Light Meter with Color Temperature Correction

850006
Instruction Maual

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INTRODUCTION

This Sper Scientific LED light meter with color temperature correction (model 850006) is specifically designed to measure modern LED bulbs over the wide range of color-temperature varieties commercially available in today's lighting industry. This unique meter includes all the features of a standard LED light meter and also has individual channels specifically designed to measure different color-temperatures of LED light bulbs. A simple intuitive keypad allows you to begin using the device immediately in Foot Candles (FC), Lux (Lx), or Luminous Intensity (CD). The user can preset the source distance for an even more thorough analysis, showing readings on the large LCD display. With a Min/Max/Average, Auto-Ranging Intensity, 99-point internal memory, Hold function, and a single-button zero calibration, this meter covers every available feature of competitive light meters. Comes with a universal tripod screw in a compact carrying case with 9V battery, lens cover, and instructions.

FEATURES

- Min/Max/Average

- 7 pre-programmed LED channels

- Hold Function

- 1 Adjustable channel

- 99-point internal memory

- 1 standard non-LED channel

- Luminous Intensity (CD)

- Reads Foot Candle (FC) and Lux (Lx)

- Distance-to-source feature

- Tripod mountable

MATERIALS SUPPLIED

- LED Light meter

- Carrying Case

- Lens cover

- 9V Battery

- Instruction manual

CARE AND MAINTENANCE

- Store the meter in its protective case with the lens cover closed to protect the sensor.

- Do not use abrasives, solvents or cleaning agents containing carbon, alcohol or benzenes on the meter.

- Repairs or services not covered in this manual should be performed by qualified personnel only. Please contact Sper Scientific to speak with a technician.

FRONT PANEL DESCRIPTION
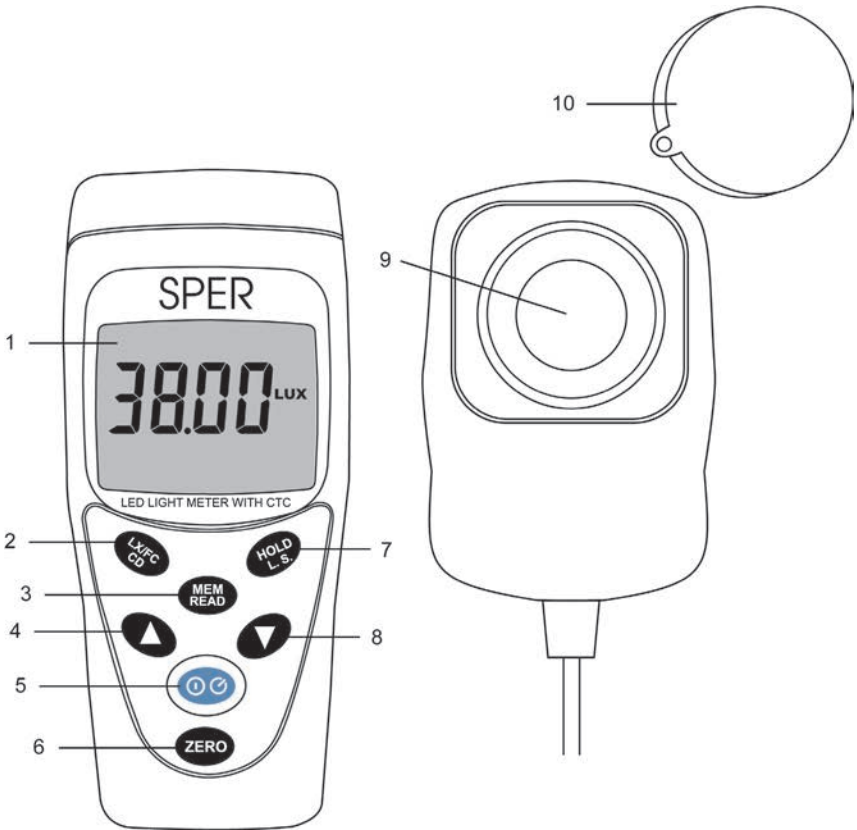
1. LCD Screen
2. Light Units
3. Memory/Recall
4. UP Arrow
5. Power Button
6. Auto Zero Button
7. HOLD / Channel Selector
8. DOWN Arrow
9. Photosensor
10. Lens Cap

LCD DISPLAY
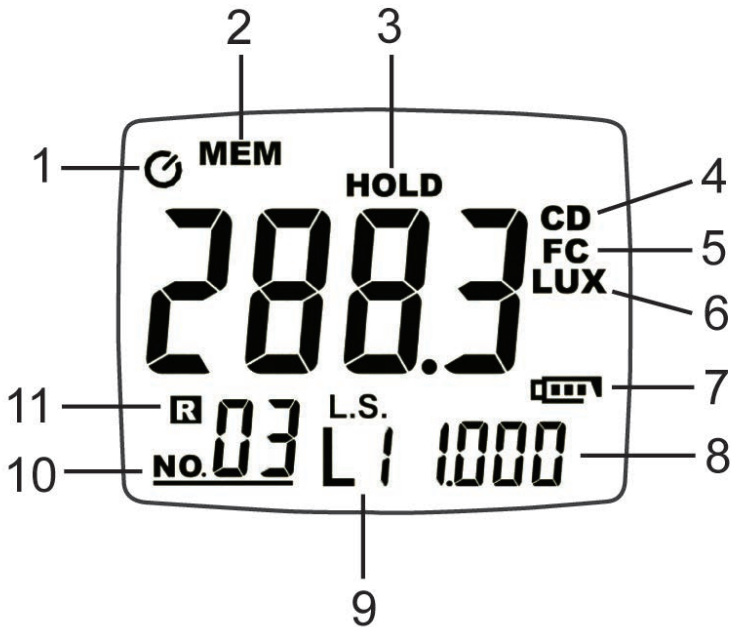
1. Automatic Power-off Enabled
2. Internal Memory Enabled
3. Hold Function Enabled
4. Luminous Intensity Activated
5. Foot Candle Reading
6. Lux Reading
7. Low Battery Indicator
8. Light Correction Factor (Channels 8 and 9 only)
9. Current Channel Indicator
10. Internal Memory Identifier
11. Memory Recall Mode Activated

SET UP

Battery Installation

1. This meter comes with a 9V battery.

2. Slide the rear cover down to expose the battery.

3. Gently pull out the 9V battery from the housing and install the 9V battery, ensuring correct polarity.

4. Place the installed battery back into the housing, being sure not to pinch the wires of the plug.

5. Replace the rear cover.

6. Repeat these steps when the low battery indicator shows on the LCD screen.

Power On and Off

1. Press the **POWER** button for less than one second to turn the meter **on** in auto shut-off mode.
   This will be evident by the power icon in the upper left corner of the screen. In this mode, the meter will power off after 5 minutes of inactivity.

2. To disable the auto power-off feature, turn the meter **on** by pressing the **POWER** button for more than 2 seconds and release. The meter will turn on and the power icon will NOT be present.

3. To turn the meter **off** at any time, press the **POWER** button once.

ZERO CALIBRATION

1. Turn the meter **on**.

2. Place the lens cap on the sensor.

3. Press **ZERO**.

4. The screen will momentarily display "Adj" to indicate your zero calibration was successful.

5. If the screen does not display "Adj", the calibration was not successful.

6. If the screen displays "CAP," please ensure the lens cap is tightly secured over the photosensor and try again.

ACCESSING THE INTERNAL MEMORY

1. Turn the meter **on**.

2. Hold **MEM** until the lower left corner of the screen displays "R".

3. Use the **UP** and **DOWN** arrows to scroll through the saved values. Note that the unit of measure stays with the measurement.

4. Press **MEM** once to exit memory recall mode.

5. To clear the internal memory at any time, first turn the meter **off**. Then, while holding the **MEM** key, turn the power **on**. "Clr" will display on the screen, indicating that you have cleared the memory.

MEASUREMENT PROCEDURES

1. Turn the meter **on**.

2. Select your desired units by pressing **LX/FC/CD** to toggle between Lux and Footcandles.**

   Note: If you want to activate the CD function, press **LX/FC/CD for more than 2 seconds to activate this mode, explained on page 12.

3. Select your desired channel by pressing **HOLD** for more than 2 seconds. The LS numerical value will blink at the bottom of the screen.

4. Use the **UP** and **DOWN** arrows to change the L-value to the desired channel. Use the Chart on the right as a guide.

5. To confirm your channel selection, press **HOLD** for more than 2 seconds again. The channel value will stop blinking and the meter returns to regular measuring mode.

6. Aim the photosensor at the light source. For best results, hold the sensor as close to perpendicular as possible.

7. To freeze the reading on-screen, press **HOLD**. The value will remain on the screen until you press **HOLD** again.

8. To view the **MIN/MAX/AVERAGE** over any interval, press the **UP** arrow to scroll through the minimum, maximum, and average values since the last time this feature was activated. Press the **UP** arrow for more than 2 seconds to exit this feature.

9. To store a reading in the meter's internal memory, press **MEM**. A numerical value will temporarily show in the lower left side of the LCD screen, indicating successful storage. You can also store an average value by pressing **MEM** during a min/max/average measurement.

Available Channels and Light Source Identification Chart	
Channel ID	Light Source Identification
L0	Standard Light source (non-LED)
L1	LED with 2700K Color Temperature
L2	LED with 3000K Color Temperature
L3	LED with 3500K Color Temperature
L4	LED with 4000K Color Temperature
L5	LED with 4500K Color Temperature
L6	LED with 5000K Color Temperature
L7	LED with 6500K Color Temperature
L8	Adjustable to any light source with a known correction factor
L9	Adjustable to any light source with a known correction factor

LUMINOUS INTENSITY

The luminous intensity feature of this meter allows you to directly measure the intensity in Lux over distance. Please note that this feature is based on a Lux measurement. The formula for this calculation is as follows:

1. Luminous Intensity (CD) = (Illumination in Lux) x Distance squared

2. Press **POWER** to turn the meter **on**.

3. Select your desired channel before switching to Luminous Intensity mode (CD). You will not be able to change the channel after CD begins.

4. Press **LX/FC/CD** for more than two seconds.

5. Use the **UP** and **DOWN** arrows to scroll to your desired distance unit and press **LX/FC/CD** to confirm. You can select meters or feet.

6. A number will blink in the lower right corner of the screen. This is the distance to the light source. Use the **UP** and **DOWN** arrows to set the distance to the source. You can enter up to 30.4 meters or 99.9 feet.

7. Press **LX/FC/CD** to confirm. The meter will return to measuring mode and you will be able to see the CD result.

8. To exit CD mode at any time, press **LX/FC/CD** for more than 2 seconds.

***NOTE: Do not enter the area between the meter and the source. This is calculated for you based on the distance. Enter only the linear distance from the source to the meter.

SPECTRAL SENSITIVITY

Like any device that relies on the translation of a photosensor output to an electrical signal, there is an associated bandwidth. Please see the diagram below to see the spectral sensitivity of this LED light meter. The response is not the same at every wavelength and it is important to note that LED light covers many associated wavelengths.

-Relative Spectral Sensitivity

The deviation from the comparative standards for luminosity is determined by JIS standard C 1609-1993.

Peak sensitivity wavelength: 550 nm

Typ. Ta+23°C

WAVELENGTH (nm)
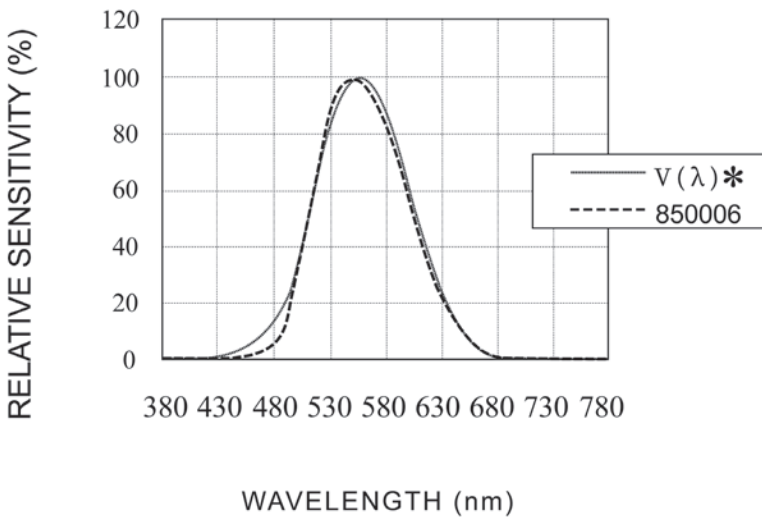
＊CIE spectral luminous efficiency

SPECIFICATIONS

Unit	Range	Resolution	Accuracy
Lux, Auto-Ranging	0 to 40 Lux	0.01 Lux	±3%FS for all color temp. LED light sources and all other standard bulbs.
	40 to 400 Lux	0.1 Lux	
	400 to 4000 Lux	1 Lux	
	4,000 to 40,000 Lux	10 Lux	
	40,000 to 400,000 Lux	100 Lux	
Foot Candle, Auto-Ranging	0 to 40 FC	0.01 FC	
	40 to 400 FC	0.1 FC	
	400 to 4000 FC	1 FC	
	4,000 to 40,000 FC	10 FC	
Additional Angle deviations from Perpendicular	10° to 20°	± 1.5%	
	20° to 30°	± 3%	
	30° to 60°	± 10%	
	60° to 80°	± 30%	
Battery Life	200 hours		
Weight	250g		
Dimensions	Meter: 5"x 2 ¼" x 1 ½" (130 x 55 x 38 mm) Cord length: 1.5 meters when extended Probe housing: 3" x 2" x 1" Photosensor: 19.5 mm dome		

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **five (5) years** 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 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 LTD.
8281 East Evans Road, Suite #103
Scottsdale, AZ 85260
(480) 948-4448

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.

Please note: The most current version of the manual can always be found at www.sperdirect.com

CE RoHS Compliant

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