

BTMETER BT-881E

BTMETER BT-881E Digital Illuminance/Light Meter User Manual

MODEL: BT-881E

Brand: BTMETER

1. Introduction

The BTMETER BT-881E is a digital illuminance meter designed for precise measurement of light intensity. It provides accurate readings in both Lux and Foot Candles (FC) across a wide range, making it suitable for various applications including home, garden, aquarium, plant cultivation, schools, offices, and LED lighting assessments. Its user-friendly design features a rotatable sensor and data recording capabilities for enhanced convenience.

2. Key Features

- **High Accuracy:** Provides reliable measurements with an accuracy of +/- 4% readings +/- 0.5% f.s (at 10,000 Lux; 1,000 FC) and +/- 5% readings +/- 10 digits (at 300,000 Lux; 30,000 FC).
- **Fast Response:** Features a rapid sampling rate of 2-3 times per second, allowing for instant light measurements.
- **Wide Measurement Range:** Capable of measuring luminance from 0.01 to 300,000 Lux (0.01 to 30,000 Foot Candles) with a resolution of 0.01.
- **Easy to Use:** Equipped with a 270° rotatable light sensor, eliminating the need to reposition the entire meter for different measurement angles.
- **Data Recording:** Allows storage of up to 33 sets of readings for later review and analysis.
- **Temperature Testing:** Includes functionality for temperature measurement.
- **Relative Measuring Mode:** Displays the difference between current and recorded data, useful for comparative analysis.



Figure 1: Overview of BTMETER BT-881E features.

3. What's in the Box

- 1 x BTMETER Lux Meter (BT-881E)
- 1 x User Manual

4. Setup

4.1 Battery Installation

The BT-881E requires batteries for operation. To install or replace batteries:

1. Locate the battery compartment on the back of the device.
2. Use a small Phillips head screwdriver to open the battery cover.
3. Insert the required batteries, ensuring correct polarity.
4. Securely close the battery cover and tighten the screw.

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Video 1: Battery installation and basic operation demonstration for a similar BTMETER model (BT-881D). The process is identical for the BT-881E.

5. Operating Instructions

Familiarize yourself with the buttons and display for effective operation.



Figure 2: BTMETER BT-881E display with backlight on and off.

5.1 Power On/Off

Press the **Power** button (🔌) to turn the device on or off.

5.2 Unit Selection (Lux/FC)

Press the **Lux/Fc** button to switch between Lux and Foot Candle measurement units.

5.3 Backlight

Press the **LIGHT** button to toggle the display backlight on or off for visibility in different lighting conditions.

5.4 Data Hold

Press the **HOLD** button to freeze the current reading on the display. Press again to release.

5.5 Max/Min Measurement

Press the **MAX/MIN** button to cycle through maximum, minimum, and current readings. This allows you to track the highest and lowest light levels detected during a measurement session.

5.6 Relative Measurement

Press the **REL** button to enter relative measurement mode. This mode displays the difference between the current measurement and a previously recorded reference value.

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Video 2: Demonstration of the BTMETER Digital Light Meter in use, showing light level comparisons. Note: This video is from a third-party creator.

6. Measurement Modes

The BT-881E supports three primary measurement modes:

- **Min Mode:** Displays the lowest light intensity recorded since the mode was activated.
- **Max Mode:** Displays the highest light intensity recorded since the mode was activated.
- **Relative Mode:** Shows the difference between the current light reading and a set reference point.



Figure 3: Illustration of the three measurement modes.

7. Data Recording

The meter can record up to 33 sets of data. To record a reading, press the **REC** button. To recall recorded data,

press the **REC** button again and use the arrow keys (if available, or cycle through with repeated presses) to navigate through the stored values.

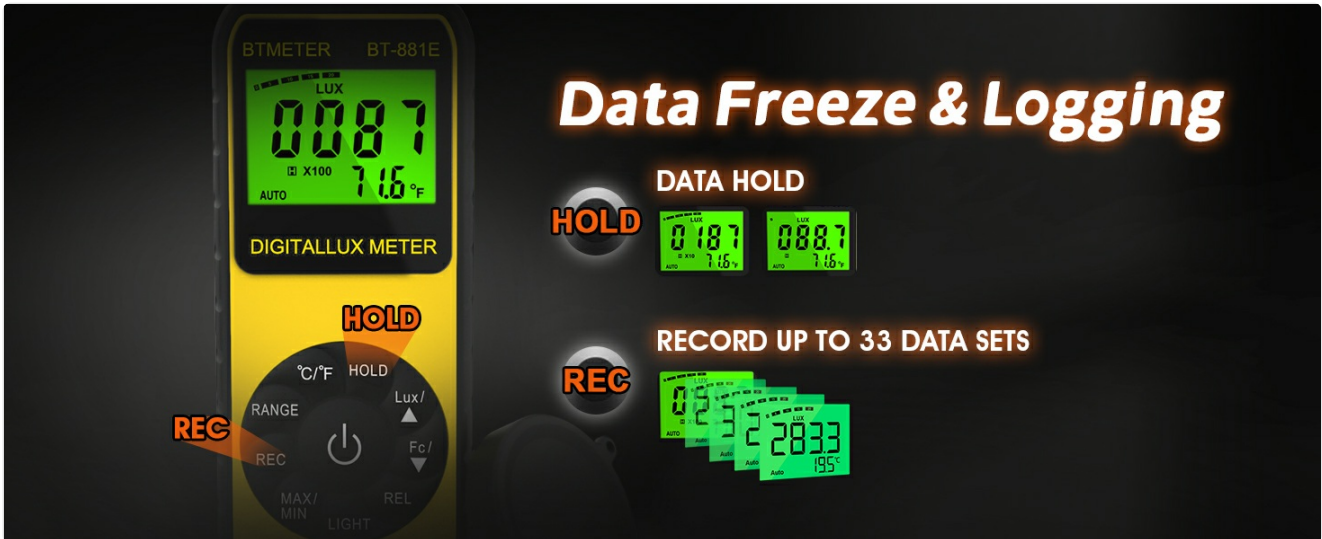


Figure 4: Data recording and hold functions.

8. Accuracy

The BT-881E is equipped with a high-precision photometric sensor for accurate light measurement. It is calibrated to a standard incandescent lamp at a color temperature of 2556K.

- **Accuracy ($\leq 10,000$ Lux; 1,000 FC):** $\pm 4\%$ readings $\pm 0.5\%$ f.s
- **Accuracy ($> 10,000$ Lux; 1,000 FC):** $\pm 5\%$ readings ± 10 digits
- **Resolution:** 0.01 Lux / FC



Figure 5: High-precision photometric sensor and accuracy details.

9. Specifications

| Feature | Specification |
|--------------------|------------------------|
| Product Dimensions | 6.4 x 2.6 x 1.2 inches |
| Item Weight | 5.5 ounces |

| | |
|-------------------|-----------------------------------|
| Item Model Number | CA-BT-881 C/D/E (BT-881E variant) |
| Manufacturer | BTMETER |
| Measurement Range | 0.01~300,000 Lux (0.01~30,000 FC) |
| Resolution | 0.01 Lux / FC |
| Sensor Rotation | 270° |
| Data Storage | Up to 33 sets |



Figure 6: Product dimensions.

10. Troubleshooting

If you encounter issues with your BTMETER BT-881E, consider the following common solutions:

- **No Display/Power Issues:** Check battery installation and ensure batteries are not depleted. Replace if necessary.
- **Inaccurate Readings:** Ensure the sensor is clean and unobstructed. Verify that the correct measurement unit (Lux/FC) is selected. Avoid measuring in rapidly changing light conditions if stable readings are required.

- **Display Not Responding:** Try turning the device off and on again. If the issue persists, remove and reinsert the batteries.

For persistent problems, contact BTMETER customer support.

11. Maintenance

To ensure the longevity and accuracy of your BTMETER BT-881E:

- **Cleaning:** Gently wipe the device, especially the light sensor, with a soft, dry cloth. Do not use abrasive cleaners or solvents.
- **Storage:** Store the meter in its protective carrying case in a cool, dry place away from direct sunlight and extreme temperatures. Remove batteries if the device will not be used for an extended period to prevent leakage.
- **Sensor Protection:** Always keep the sensor cap on when the device is not in use to protect the photometric sensor from dust and damage.

12. Warranty and Support

For information regarding product warranty, technical support, or service, please refer to the official BTMETER website or contact their customer service department. Keep your purchase receipt as proof of purchase for warranty claims.