Pocket Light Meter

Model LT10
Introduction

Thank you for selecting the Extech Instruments Model LT10 Pocket Light Meter. The LT10 measures and displays light intensity in foot candle and Lux units using a precision photo-diode sensor. This device is shipped fully tested and calibrated and, with proper use, will provide years of reliable service. Please visit our website (www.extech.com) to check for the latest version of this User Guide. The Extech Instruments brand, a wholly owned subsidiary of FLIR Systems, Inc., is ISO-9001 certified.

Safety

Use CAUTION when operating this device. The light sensor is sensitive and should be handled with great care.

Meter Description

1. **Photo detector** (Light Sensor): Sensor contains a long life silicon photo diode

2. **MAX-LUX/fc function button**: Press button momentarily to view the maximum (MAX) reading. Press the button momentarily again to release the MAX display and return to the normal operating mode. Press and hold this button for at least 2 seconds to switch between LUX and fc (foot candle) units of measure. Note that 1fc = 10.76 LUX).

3. **LCD Backlight Control Sensor**: The meter switches the LCD backlight ON and OFF automatically based on environmental lighting conditions.

4. **LCD display**: 1999 count, backlit LCD with LUX, fc, MAX, and low battery icons.

5. **Power button**: Press to switch the unit ON or OFF.

**Note**: Battery compartment and tripod mount are located on rear of instrument.
**Operation**

**Turn Power ON or OFF**
Press the \( \textcircled{O} \) button to turn power on or off. If the display does not switch on, check that a 9V battery is installed and is fresh.

**Selecting LUX or Foot candle (fc) units of measure**
Press and hold the MAX-LUX/fc button for at least 2 seconds to switch between LUX and Fc units.

**Measurement Procedure**
1. Switch the meter ON and position the light sensor to capture the light that is to be measured.
2. The display will indicate the light level in Fc or LUX units.
3. The meter automatically selects the correct range. If the ‘OL’ icon appears, the light measurement is out of range and cannot be measured accurately.
4. If the \( \times 10 \) or \( \times 100 \) indicator appears, multiply the displayed value by the corresponding multiplier to obtain the correct measurement value.

**Max Hold**
Momentarily press the MAX-LUX/fc button to view the highest reading (MAX) encountered since the meter was last switched ON. Press the button again to return to the normal operating mode. To reset the MAX reading, switch the meter OFF and then ON again.

**LCD Backlight**
The meter automatically controls the LCD backlighting (ON and OFF) to match the available ambient lighting.
**Battery Replacement**

When the battery power begins to fail, the low battery symbol will appear on the LCD. Replace the 9V battery by following these steps.

1. Open the rear battery compartment to access the battery
2. Replace the 9V battery, carefully securing the battery in the compartment
3. Securely fasten the compartment cover
4. Ensure that the compartment cover is securely fastened before using the meter

All EU users are legally bound by the Battery Ordinance to return all used batteries to community collection points or wherever batteries / accumulators are sold. Disposal in household trash or refuse is prohibited.

**Disposal:** Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

**Battery Safety Reminders**

- Please dispose of batteries responsibly; always observe local, state, and federal regulations with regard to battery disposal.
- Never dispose of batteries in a fire. Batteries may explode or leak.
- Never mix battery types or old and new batteries. Always install new batteries of the same type.
Specifications

General Specifications

Display
1999 Count Backlit LCD with LUX, fc, battery, and MAX indicators

Display Polarity
Automatically detects polarity; displays (‐) for negative polarity

Over range indication
LCD displays ‘OL’

Low Battery Indication
Battery icon appears when battery voltage is below operating level

Measurement rate
2.5 readings per second, nominal

Measurement Repeatability
±2%

MAX indication
Displays highest reading

Temperature coefficient
±0.1% per °C

Photo detector
Silicon photo-diode with spectral response filter

Sensor Calibration
Calibrated to standard incandescent lamp; color temperature 2856k

Spectral response
CIE photopic (CIE human eye response curve)

Power supply
9V battery

Auto Power Off
Meter automatically switches off after 17 minutes of inactivity

Operating conditions
Temperature: 0 to 40°C (32 to 104°F); Humidity: < 80% RH

Storage conditions
Temperature: -10 to 60°C (14 to 140°F); Humidity: < 80% RH

Dimensions
157 (H) x 54 (W) x 34 (D) mm (6.2 x 2.1 x 1.3 “)

Weight
170 g (6 oz.)

Electrical Specifications

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<th>Accuracy</th>
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</thead>
<tbody>
<tr>
<td>LUX</td>
<td>± (5% reading + 10 digits (&lt;10000 LUX/fc)</td>
</tr>
<tr>
<td>200.0, 2000, 20000, 40000</td>
<td>± (10% reading + 10 digits (&gt;10000 LUX/fc)</td>
</tr>
<tr>
<td>Foot candles (Fc)</td>
<td>Note that readings over 1999 will show the x10 or x100 multiplier. In these cases, multiply the displayed value by the multiplier to obtain the correct reading.</td>
</tr>
<tr>
<td>20.0, 200.0, 2000, 4000</td>
<td></td>
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## Appendices

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<th>Lux</th>
<th>Foot Candles</th>
<th>Homes</th>
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<td>2-7</td>
<td>Emergency Stairs, Warehouse</td>
<td>100-150</td>
<td>10-15</td>
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<td>75-150</td>
<td>7-15</td>
<td>Exit/Entrance Passages</td>
<td>150-200</td>
<td>15-20</td>
<td>Recreational Activities</td>
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<tr>
<td>150-300</td>
<td>15-30</td>
<td>Packing Work</td>
<td>200-300</td>
<td>20-30</td>
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</tr>
<tr>
<td>300-750</td>
<td>30-75</td>
<td>Visual Work: Production Line</td>
<td>300-500</td>
<td>30-50</td>
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<tr>
<td>750-1,500</td>
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<td>Typesetting: Inspection Work</td>
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<td>50-150</td>
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</tr>
<tr>
<td>1,500-3,000</td>
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<td>Electronic Assembly, Drafting</td>
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</tr>
</tbody>
</table>

#### Office

<table>
<thead>
<tr>
<th>Lux</th>
<th>Foot Candles</th>
<th>Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-100</td>
<td>7-10</td>
<td>Indoor Emergency Stairs</td>
</tr>
<tr>
<td>100-200</td>
<td>10-20</td>
<td>Corridor Stairs</td>
</tr>
<tr>
<td>200-750</td>
<td>20-75</td>
<td>Conference, Reception Room</td>
</tr>
<tr>
<td>750-1,500</td>
<td>75-150</td>
<td>Clerical Work</td>
</tr>
<tr>
<td>1,500-2,000</td>
<td>150-2000</td>
<td>Typing, Drafting</td>
</tr>
</tbody>
</table>

#### Stores

<table>
<thead>
<tr>
<th>Lux</th>
<th>Foot Candles</th>
<th>Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-150</td>
<td>7-15</td>
<td>Indoors</td>
</tr>
<tr>
<td>150-200</td>
<td>15-20</td>
<td>Corridor/Stairs</td>
</tr>
<tr>
<td>200-300</td>
<td>20-30</td>
<td>Reception</td>
</tr>
<tr>
<td>300-500</td>
<td>30-50</td>
<td>Display Stand</td>
</tr>
<tr>
<td>500-750</td>
<td>50-75</td>
<td>Elevator</td>
</tr>
<tr>
<td>750-1,500</td>
<td>75-150</td>
<td>Show Window, Packing Table</td>
</tr>
<tr>
<td>1,500-3,000</td>
<td>150-300</td>
<td>Storefront, Show Window</td>
</tr>
</tbody>
</table>

#### Hospitals

<table>
<thead>
<tr>
<th>Lux</th>
<th>Foot Candles</th>
<th>Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>75-150</td>
<td>7-15</td>
<td>Emergency Stairs</td>
</tr>
<tr>
<td>150-200</td>
<td>15-20</td>
<td>Stairs</td>
</tr>
<tr>
<td>200-300</td>
<td>20-30</td>
<td>Sick Room, Warehouse</td>
</tr>
<tr>
<td>300-500</td>
<td>30-50</td>
<td>Waiting Room</td>
</tr>
<tr>
<td>500-750</td>
<td>50-75</td>
<td>Medical Exam Room</td>
</tr>
<tr>
<td>750-1,500</td>
<td>75-150</td>
<td>Operating Room</td>
</tr>
<tr>
<td>1,500-3,000</td>
<td>150-300</td>
<td>Eye Inspection</td>
</tr>
</tbody>
</table>

### Spectral Sensitivity

![Graph of Spectral Sensitivity](image)

- **Light Meter Response**
- **CIE Response**

### Table Notes

- **Lux**: Luxeins (lx) are the standard unit of measurement for light intensity.
- **Foot Candles**: The traditional unit for measurement of light intensity.
- **Factories**: Categories for different work environments typically found in factories.
- **Homes**: Categories for different work environments typically found in homes.
- **Office**: Categories for different work environments typically found in offices.
- **Restaurant**: Categories for different work environments typically found in restaurants.
- **Stores**: Categories for different work environments typically found in stores.
- **Hospitals**: Categories for different work environments typically found in hospitals.

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**Notes**

- **Spectral Sensitivity**: The graph illustrates the relative response of the human eye to different wavelengths of light, as measured by a light meter and calculated using the CIE (Commission Internationale de l’Éclairage) method.
- **Wavelength (nm)**: The x-axis represents the wavelength of light, ranging from 400 nm (ultraviolet) to 700 nm (red).
- **Relative Response**: The y-axis represents the relative response of the eye to the light at different wavelengths.

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**Appendix Details**

- **Page Dimensions**: 420.0x595.0
- **Text Location**: 28x554, 4/15

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**Technical Details**

- **LT10-en-GB_v1.1**: Version of the document.
- **4/15**: Date of the document.