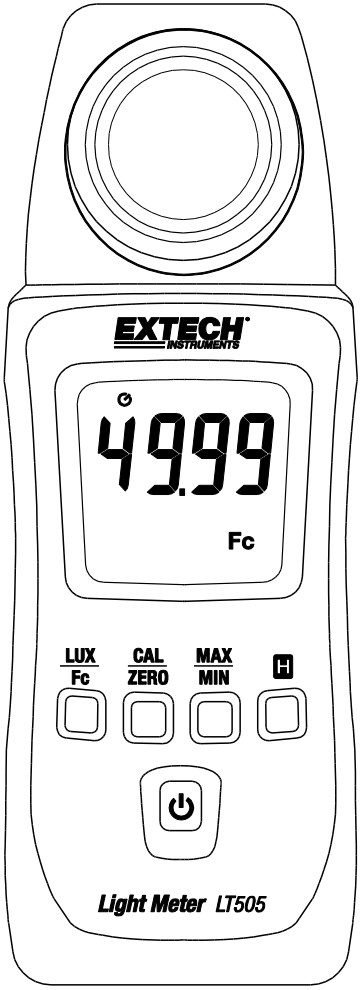
EXTECH INSTRUMENTS

USER MANUAL

LUX/FC Light Meter

Model LT505



Additional User Manual Translations available at www.extech.com

Introduction

Thank you for selecting the Extech Model LT505 LUX/FC Light Meter. The LT505 measures light from fluorescent, metal halide, high-pressure sodium and incandescent sources in lux and foot-candles. 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 and translations of this User Manual, Product Updates, Product Registration, and Customer Support.

Features

- Measure intensity of light (illuminance) in lux or foot-candles
- Light sensor with cosine correction
- Low battery indicator
- Data hold
- Auto-ranging
- Auto Power OFF (APO)
- Light weight, compact, design

Safety

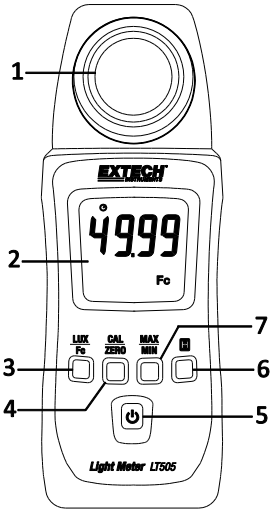
Please read the entire User Manual before operating this device. Use the meter only as specified and do not attempt to service or open the meter housing.

- Do not use the meter in the presence of explosive gas or vapor
- Do not expose the meter to extremes in temperature or to high humidity
- Please dispose of batteries and meter responsibly and in accordance with all applicable laws and regulations
- Do not allow children to handle the meter or the protective cover

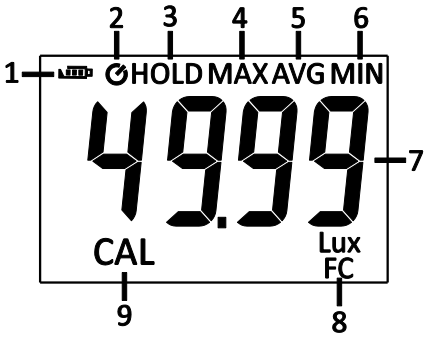
Meter and LCD Description

1. Light Sensor (protective sensor cover not shown)
2. LCD
3. LUX-FC button
4. CAL-ZERO button
5. Power button
6. Data Hold button
7. MAX-MIN Record button

Note: Battery compartment and Tripod mount on rear of meter



1. Battery status
2. Auto Power OFF (APO)
3. Data Hold
4. Maximum reading
5. Average reading
6. Minimum reading
7. Measurement
8. Units of measure
9. Calibration (ZERO)



Operation

Meter Power

Power the meter by long pressing the ⏻ button. The meter will begin displaying light intensity readings. If the LCD does not switch on, check the batteries located in the rear battery compartment. Short press power button to turn OFF the meter.

Zero Calibrate the Sensor

1. Place the protective cover over the sensor and press the ⏻ button to power on the meter.
2. If the display does not read '0.0' short press the CAL/ZERO button.
3. The CAL icon will appear in the secondary display.
4. The CAL icon will switch OFF when the calibration has been completed.
5. If the protective cap is not covering the sensor when the CAL/ZERO button is pressed, the LCD display will read "CAP". In this case, please cover the sensor with the cap and restart this procedure.
6. It is recommended that the meter be switched off and then on again when repeating the zero calibration function.

Taking Measurements

Remove the sensor cover and aim the sensor toward the light source. View the measurement on the meter's display.

Selecting the Unit of Measure

Press the LUX/Fc button to toggle the units between Lux and Foot-candles. The units will indicate in the display.

Data Hold

Short press the H button to freeze or unfreeze a reading on the display.

MAX/MIN Button

The meter records the maximum, minimum, and average readings as described below:

1. Short press the MAX/MIN button and the meter will begin tracking the maximum, average, and minimum measurements. The MAX icon will display at the top of the LCD indicating the meter is now showing the maximum reading. The reading will not change until a higher reading is registered.
2. Short press the MAX/MIN button again to switch from MAX to AVG, where the meter will show the average measurement value. The AVG icon will display in the LCD indicating the meter is now showing the average reading.
3. Short press the MAX/MIN button again to change the mode from AVG to MIN, where the meter will show the minimum measurement value. The MIN icon will display in the LCD indicating the meter is now showing the minimum reading.
4. Short press the MAX/MIN button to step through MAX-AVG-MIN readings.
5. To exit this mode, long press the MAX/MIN button. The MAX/AVG/MIN display icons will switch off, and the meter will return to normal operating mode.

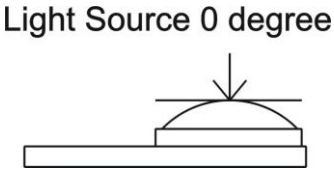
Auto Power OFF (APO)

In order to conserve battery life, the meter will automatically shut off after approximately 12 minutes of inactivity. The icon will appear in the display when APO is enabled.

To turn APO on or off, with the meter powered ON, long press the button. The icon will appear in the upper LCD when APO is enabled and disappear when APO is disabled.

Measurement Considerations and User Tips

- For maximum accuracy allow the light being measured to fall directly on the sensor as perpendicular as possible with a minimal angle of incidence.



- When the meter is not in use, please keep the protective cap over the light sensor. This will prolong the life of the sensor.
- When the meter is to be stored for long periods, please remove the batteries and store them separately. Batteries can leak and cause damage to the meter's components.
- Avoid areas of high temperature and humidity when using this instrument.

Maintenance

Battery Replacement

1. Power OFF the meter.
2. Press the button that secures the battery compartment at the back of the meter while sliding the battery compartment cover off in a downward motion.
3. Replace the two (2) 'AAA' batteries observing correct polarity.
4. Re-assemble the meter before use.

Safety: Please dispose of batteries responsibly; never dispose of batteries in a fire, batteries may explode or leak. If the meter is not to be used for 60 days or more, remove the battery and store separately.

Never dispose of used batteries or rechargeable batteries in household waste.
As consumers, users are legally required to take used batteries to appropriate collection sites, the retail store where the batteries were purchased, or wherever batteries are sold.

Disposal: Do not dispose of this instrument in household waste. The user is obligated to take end-of-life devices to a designated collection point for the disposal of electrical and electronic equipment.

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents.

Specifications

Display	9999 count LCD Sampling rate 2.5 times per second
Light sensor	Silicone photodiode with cosine correction filter
Measurement Units	LUX and FC (Foot candles)
Lighting source types	Fluorescent, metal halide, high-pressure sodium, and incandescent
Input Overload Display	'OL'
Tripod mount	On back of meter
Power	2 x 1.5V AAA batteries Low battery indicator included
Automatic power off	After approx. 12 minutes of inactivity
Operating Temp/Humidity	5°C to 40°C (40°F to 104°F); <80%RH Max
Operating Altitude	2000 meters (7000ft) maximum
Storage Temp/Humidity	-10°C to 60°C (14°F to 140°F); <70%RH Max
Dimensions/Weight	133 x 48 x 23mm (5.3 x 1.9 x 0.9") /250g (8.8oz)
Safety	For indoor use only. EMC: EN61326-1 (2006), IEC 61000-4-2 (2008, IEC 61000-4-3 (2006) + (2007); Pollution Degree 2.

Electrical Specifications (23±5°C)			
Lux (autorange)			
Unit	Range	Resolution	Accuracy
Lux	999.9	0.1	±3%rdg + 3 dgts
	9 999	1	±3%rdg +10 dgts
	99 990	10	
	400 000	100	
Foot-candle (autorange)			
Unit	Range	Resolution	Accuracy
fc	99.99	0.01	±3%rdg + 3 dgts
	999.9	0.1	±3%rdg +10 dgts
	9 999	1	
	40 000	10	

Note: All ranges calibrated to a standard incandescent lamp at color temperature of 2856°K

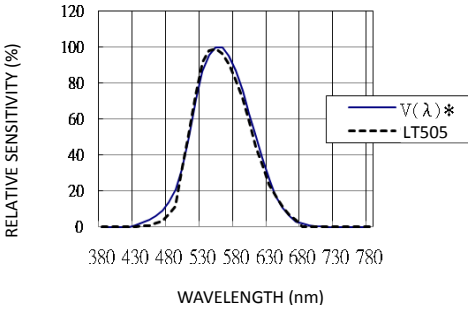
Appendices

Typical Light Levels (1 Fc = 10.76 Lux)

Lux	Foot Candles		Lux	Foot Candles	
		Factories			**Home**
20-75	2-7	Emergency Stairs, Warehouse	100-150	10-15	Washing
75-150	7-15	Exit/Entrance Passages	150-200	15-20	Recreational Activities
150-300	15-30	Packing Work	200-300	20-30	Drawing Room, Table
300-750	30-75	Visual Work: Production Line	300-500	30-50	Makeup
750-1,500	75-150	Typesetting: Inspection Work	500-1,500	50-150	Reading, Study
1,500-3,000	150-300	Electronic Assembly, Drafting	1,000-2,000	100-200	Sewing
		Office			**Restaurant**
75-100	7-10	Indoor Emergency Stairs	75-150	7-15	Corridor Stairs
100-200	10-20	Corridor Stairs	150-300	15-30	Entrance, Wash Room
200-750	20-75	Conference, Reception Room	300-750	30-75	Cooking Room, Dining Table
750-1,500	75-150	Clerical Work	750-1,500	75-150	Show Window
1,500-2,000	150-2000	Typing, Drafting			
		Store			**Hospital**
75-150	7-15	Indoors	30-75	3-7	Emergency Stairs
150-200	15-20	Corridor/Stairs	75-100	7-10	Stairs
200-300	20-30	Reception	100-150	10-15	Sick Room, Warehouse
300-500	30-50	Display Stand	150-200	15-20	Waiting Room
500-750	50-75	Elevator	200-750	20-75	Medical Exam Room
750-1,500	75-150	Show Window, Packing Table	750-1,500	75-150	Operating Room
1,500-3,000	150-300	Storefront, Show Window	5,000-10,000	500-1000	Eye Inspection

Spectral Sensitivity

Peak sensitivity wavelength: 550nm;
Deviation from comparative luminosity standard: JIS standard C1609-1993.



Copyright © 2018 FLIR Systems, Inc.
All rights reserved including the right of reproduction in whole or in part in any form
ISO-9001 Certified
www.extech.com