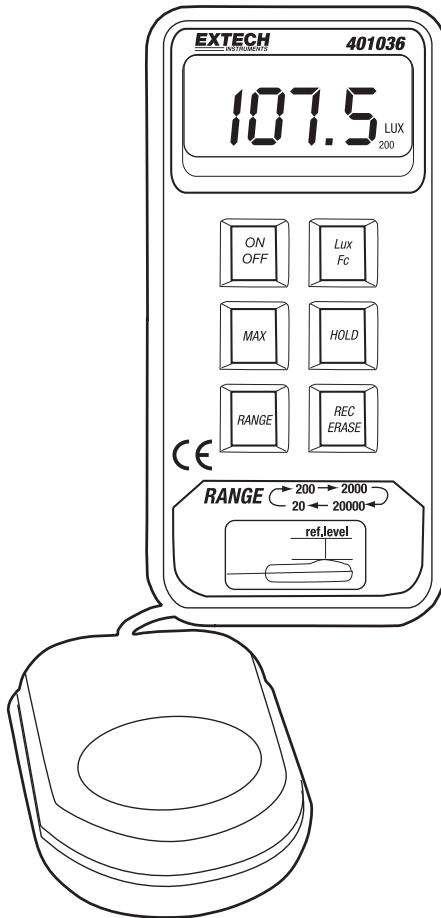


User's Guide



Datalogging Light Meter with PC Interface

Model 401036



Warranty

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Introduction

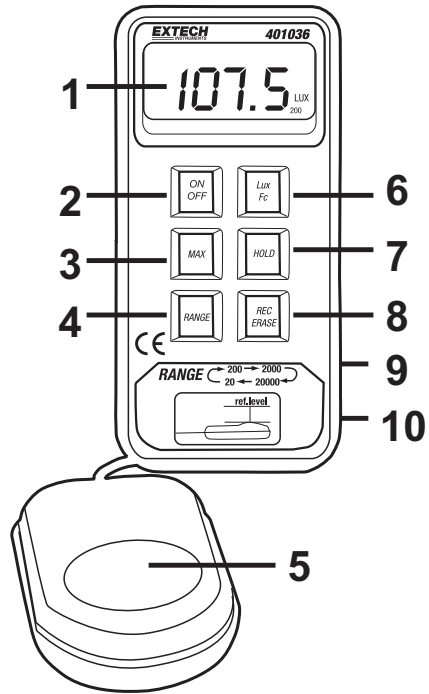
Congratulations on your purchase of the Extech 401036 Datalogging Light Meter. This device measures light intensity to 20,000 Foot-candles (Fc) or Lux. 16,000 measurement readings can be logged by the meter and later transferred to PC using the RS-232 interface. Real-time meter/PC logging is also supported. Careful use of this meter will provide years of reliable service.

Specifications

Display	3 ½ digit (2000 count) multifunction LCD display
Sensor	Silicon Photo-diode meets C.I.E. photopic curve V (λ)
Ranges / Resolution	19.99, 199.9, 1999, and 1999 x 10 Fc and Lux
Accuracy	± (3% reading + 5 digits)
Repeatability	± 2%
Datalogger memory	16,000 readings max.
PC Interface	RS-232C Serial Communications at 9600 bps
Range status indication	'OL' is displayed for measurement exceeding published limits
Sampling time	2.5 readings per second
Power Supply	9V battery (display includes low battery indicator); 50 hour typical battery life
Operating temperature	32 to 104°F (0 to 40°C)
Operating Humidity	< 80% RH
Weight	9.6 oz. (300g)
Dimensions	Meter: 5.7 x 2.8 x 1.5" (146 x 70 x 39mm); Probe: 3.4 x 2.4 x 1.1" (87.5 x 60 x 29mm)
Accessories	Carrying case, Windows™ software, PC Interface cable, & 9V battery

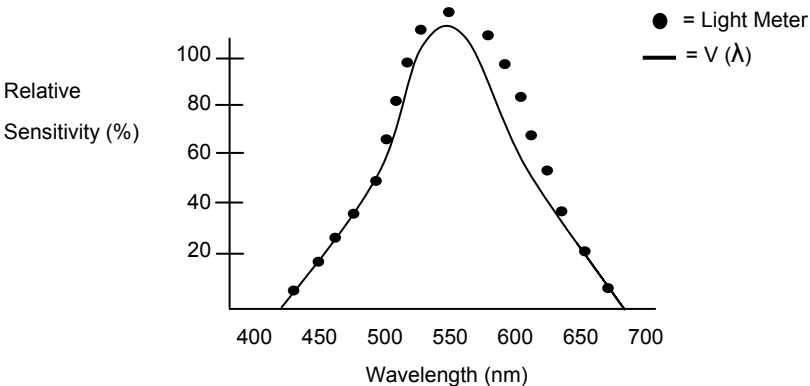
Meter Description

1. 2000 Count LCD includes LUX, Fc, low battery, MAX, H (hold), & x10 indicators
2. ON/OFF key Turns the meter on or off
3. Max. Hold key When pressed, the LCD displays only the maximum reading
4. Lux/Fc key Press to toggle the displayed unit of measure. The LCD shows the unit
5. Light Sensor (Lens cover not shown)
Collects light. Note that a tripod mount is located on the rear of the sensor
6. Range key Press repeatedly to select desired range: 20, 200, 2,000, 20,000
7. Data Hold key Press to freeze the displayed measurement
8. Record/Erase key Press momentarily to store one reading; Press and hold for 3 seconds to activate the continuous recording mode. Press again to end recording
9. RS-232 jack Stereo jack for PC to Meter connection cable
10. Zero adjust Cover the sensor with supplied lens cap and adjust the zero pot for a 0.0 Fc/LUX display



Note that the battery compartment, tilt stand, and hanging mount are located on the rear of the meter

Spectral Sensitivity Curve



Operation

1. Turn the meter ON or OFF with the ON/OFF key.
2. Press the Lux/Fc key to select the unit of measure for light intensity.
3. With the lens cap completely covering the light sensor, zero the meter by adjusting the screw on the right side of the meter for an LCD reading of 0.0.
4. Remove the lens cap to allow the sensor to collect light.
5. Read the light intensity measurement on the LCD.
6. For over-range conditions, the 'OL' icon will display. Select a higher range by pressing the Range key until a valid reading replaces the 'OL' display.
7. For the 20,000 range, multiply the displayed reading by a factor of 10.

Data Hold

Press the HOLD key to freeze the displayed reading. Press HOLD again to return to the normal operating mode.

Maximum (MAX) reading

Press the MAX key to display only the highest reading. As higher measurements are made the display updates accordingly. The 'MAX' icon appears on the LCD in this mode of operation. To return to normal operation, press the MAX key again and the MAX indicator will extinguish.

Range selection

Press the RANGE key to select the appropriate measurement range. Start with the lowest range (20) and work up to higher ranges as needed. If 'OL' (overload) is displayed, press the range key until a valid reading is displayed.

Datalogger

REC/ERASE Key

The REC/ERASE key is used to record and erase data. Press the REC/ERASE key once to log one reading (REC icon flashes once on the LCD). To automatically datalog readings at programmable intervals (continuous recording mode), press and hold the REC/ERASE key for 3 seconds (REC icon begins flashing repeatedly).

Press the REC/ERASE key any time while recording to exit the record mode. When the memory is full (16,000 readings or 255 sets), the LCD will display 'FULL' and recording ends. To download and view the stored data, connect the meter to a PC and perform the steps provided in the 'PC Interface' section of this manual.

To erase stored data, perform these steps:

1. With the meter turned off, press and *hold* the REC/ERASE key.
2. Turn the meter on by pressing the ON/OFF key and then immediately release the ON/OFF key.
3. Continue to hold the REC/ERASE key until 'del' flashes 3 times on the LCD. The meter automatically returns to normal operation after the data are erased.

Sampling Rate

The sampling rate is the interval of time between logged readings. Note that there are *two* sampling rate selections for two separate datalogging scenarios described below:

1. PC Sampling Rate

The PC sampling rate is the rate at which measurements are recorded by the PC *while the meter is connected to the PC*. This is known as real-time recording since the readings are being taken by the meter and recorded by the PC at the same time. Set the rate in the supplied software program as described in the PC SAMPLING paragraph on page 6.

2. Datalogger Sampling Rate

This is the meter's internal sampling rate used when the meter is logging readings remotely in continuous recording mode (disconnected from the PC). The default rate is 1 second. Change the rate in software by following the steps on page 6 for SAMPLING TIME with the meter connected to the PC.

PC Interface

Connect the supplied interface cable to the phono jack on the right side of the light meter and to the PC 9-pin COM port.

Windows™ Software

Refer to separate instructions supplied on the Software Program disk for the operation of the Windows™ Software.

Battery Replacement

The meter uses a 9V battery for its operational power and it has a 50 hour typical life span. Replace the battery when the low battery icon appears on the meter's LCD display.

1. Remove the three (3) Phillips screws on the rear of the meter.
2. Open the meter housing and replace the battery
3. Close the meter housing and secure the rear screws

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.



Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User's Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com
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