

AEMC Lightmeter Model 810

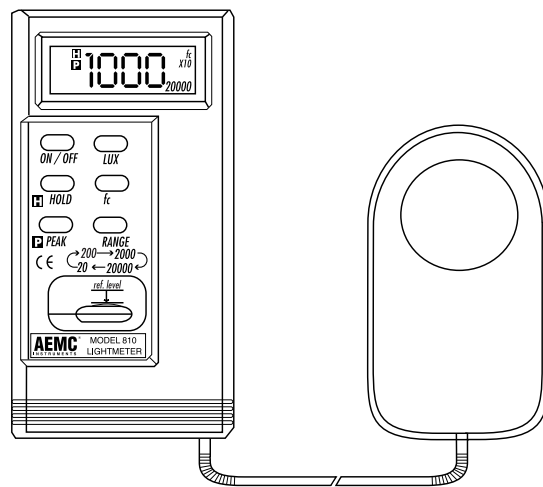


Chauvin Arnoux, Inc. d.b.a. AEMC® Instruments

99 MAN-100102 Rev 03 08/18

AEMC Lightmeter Model 810

USER MANUAL



Owner's Record

The serial number for Lightmeter Model 810 is located on the back of your instrument. Please record this number and purchase date for your records.

LIGHTMETER MODEL 810

CATALOG #2111.76

SERIAL #: _____

PURCHASE DATE: _____

DISTRIBUTOR: _____

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Receiving Your Shipment

Upon receiving your shipment, check to be sure that the contents agree with the packing slip. Notify your distributor at once of any shortages. If the equipment appears to be damaged, file a claim immediately with your carrier, and notify your distributor at once, giving a detailed description of the damages. Save the damaged packing container to substantiate your claims.

Packaging

AEMC Lightmeter Model 810 (Cat. #2111.76) is shipped with a carrying case, one 9 V alkaline battery (not installed), and an instruction manual.

Description

Digital Lightmeter Model 810 is an accurate, fast-responding instrument for in-field illumination measurements. This compact, rugged, economical meter measures illumination on four ranges in either lux or footcandles, from 0.01 to 20,000 lux/ftc.

The Model 810 response is color corrected (see p.10). The light-sensitive component used in the meter is a very stable, long-life, silicon diode with a filter. A 5-foot lead allows for easy positioning of the photo detector.

The Model 810 features a display hold for temporarily locking a

reading on the LCD, and a Peak-Hold function, which locks in the peak signal of a light pulse. The Model 810 also features an mV output for logging on a recording device.

The 3-1/2 digit LCD displays the numeric readout along with function (fc or lux) indications for easy direct readings.

Features

- Measurement mode in fc or lux (metric) scale
- Measures from 0.01 to 20,000 lux
- Measures from 0.01 to 20,000 footcandles
- Display hold locks measured value
- Automatic zero
- Spectral sensitivity adjusted to CIE photopic curve
- Peak-hold function
- Chart or recorder or data logger output

Specifications

ELECTRICAL SPECIFICATIONS

Display: 3-1/2 digit LCD

Measuring Range: 20, 200, 2,000 and 20,000 lux/fc
(20,000 lux/fc range reading x10)

Overrange Display: Most significant digit of
"1" is displayed (only).

Accuracy:

< 10,000 lux/fc range: $\pm 3\%$ reading $\pm 0.5\%$ FS;

> 10,000 lux/fc range: $\pm 4\%$ reading ± 10 digits

Repeatability: $\pm 2\%$

Sampling Rate: Approximately 2.0 time/sec.

Photo Detector: One silicon photo diode with filter

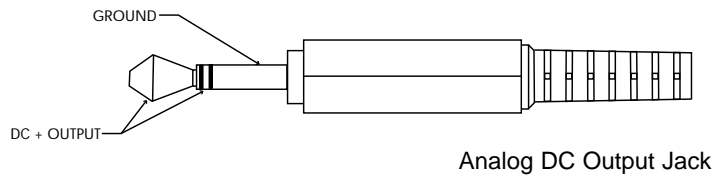
Analog Output: standard jack output
(3.5mm-3pole-coaxial)

Load Impedance: $\geq 10\text{ M}\Omega$

Accuracy: $\pm 0.5\%$ of reading

DC Output Ratio:

Range: 20 lux/fc:	10mV per lux/fc
200 lux/fc:	1mV per lux/fc
2,000 lux/fc:	0.1mV per lux/fc
20,000 lux/fc:	0.1mV per 10 lux/fc



GENERAL SPECIFICATIONS

Operating Temperature and Humidity

32°F to 104°F (0°C to 40°C)

0% to 80% RH

Storage Temperature and Humidity

14°F to 140°F (-10°C to 60°C)

0% to 70% RH

Power Source: One 9 V battery,
NEDA 1604 or IEC 6F22.

Battery Life (typical): 200 hours (Alkaline Battery)

Photo Detector Lead Length: 5 feet (150 cm)

Photo Detector Dimensions:

3.94 x 2.36 X 1.06"

10 x 6 x 2.7cm

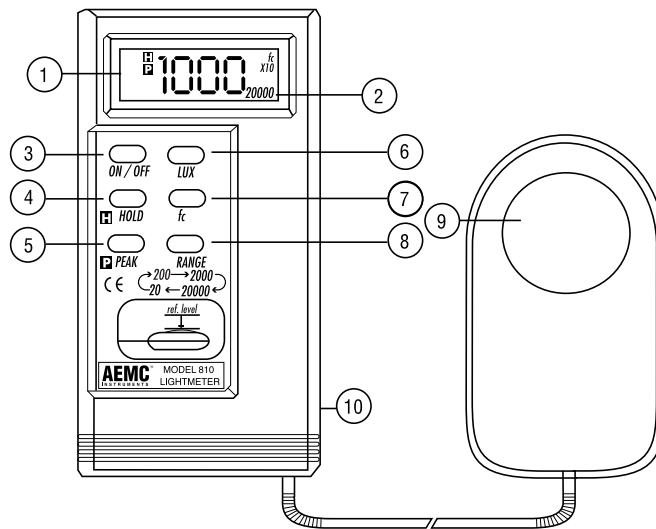
Case Dimensions:

5.31 x 2.83 x 1.3"

13.5 x 7.2 x 3.3cm

Weight: 8.8oz (250g)

Controls



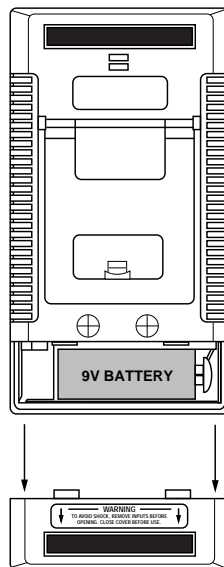
1. LCD Display: 3-1/2 digit displays with a maximum reading of 1999, plus indicating symbols "lux", "fc", "P" (Peak- Hold), "H" Data-Hold , "20,000" (Range), "x10" (reading x 10), "BT" (Low Battery), etc.
2. Range Indicator: Indicates 20, 200, 2,000 and 20,000 lux/fc ranges, respectively.
3. Power Switch: Turns the lightmeter ON or OFF
4. Data-Hold Switch: Selects HOLD mode. When HOLD mode is selected, the lightmeter stops all further measurements. Press the HOLD key again to cancel HOLD mode, and resume taking measurements.
5. Peak-Hold switch: Selects PEAK-HOLD mode, the meter will track the peak light signal hold it. Press PEAK-HOLD key again to return to general measurement mode.
6. lux: Selects light measurements in the lux scale (lux = 0.0929 fc).
7. fc: Selects light measurements in the footcandle scale; (1 footcandle = 10.76 lux).
8. Range Switch: Selects 20, 200, 2,000 and 20,000 lux or fc ranges, sequentially.
9. Photo Cell
10. DC mV output: jack input

Operating Instructions:

1. Power-up: Press the power switch to turn the meter ON or OFF.
2. Selecting the lux or fc scale: Set the range selection switch to desired lux or fc range.
3. Remove the photo cell cap and face the light source in a horizontal position.
4. Read the illuminance from the LCD display.
5. Overrange: If the instrument only displays a one "1" in the M.S.D. (Most Significant Digit), the input signal is too strong and a higher range should be selected.
6. Data-Hold mode: Press the hold key to select HOLD mode. When HOLD mode is selected, the lightmeter stops all further measurements. Press the HOLD key again to cancel HOLD mode. Then it resumes normal operation.
7. Peak mode: Press the PEAK key to select PEAK mode, and expose the photo cell to light pulse measuring field. Press the PEAK key again to cancel PEAK mode, then the meter will resume normal operation.
8. When the measurement is completed, replace the photo cell cap and turn the power selector OFF.

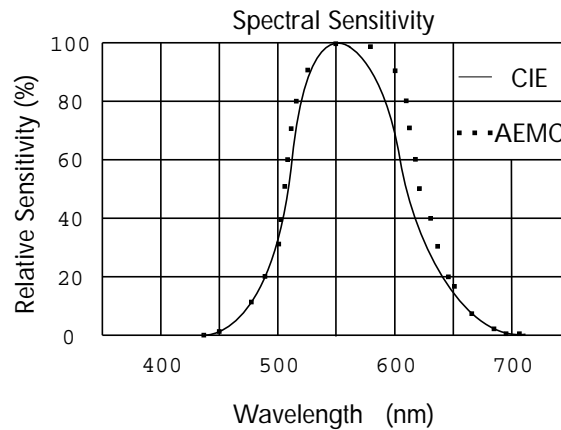
Battery Installment/Replacement:

1. After turning off the meter, press the battery cover and push in the direction of the arrow to open.
2. Disconnect the battery from the instrument and replace it with a standard 9 V alkaline battery and replace the cover.



Color Correction Characteristic:

“Color Correction“, or more properly “photoptic correction“ refers to the spectral match of a photometer to the CIE photoptic curve. The CIE photoptic curve is an internationally agreed upon representation of the color response of an average human eye. Individual eyes may deviate considerably from the curve, but at least it provides a common ground for making photometric measurements. The applied photo diode makes the spectral sensitivity characteristic almost meet CIE photoptic curve as the following chart describes.



Recommended Illumination:

Below are nominal lighting levels for your guidance in determining appropriate lighting levels. To obtain the ranges in lux, multiply the fc ranges by 10.76.

<u>LOCATIONS</u>	<u>fc</u>		
Office			
Conference, Reception Room	20	to	75
Clerical work	70	to	150
Drafting Room	100	to	200
Factory			
Visual work at production line	30	to	75
Inspection work	75	to	150
Electronic parts assembly line	150	to	300
Packing work, Entrance passage	15	to	30
Hotel			
Public Room	10	to	20
Reception	20	to	50
Cashier	75	to	100
Store			
Indoors Stairs Corridor	15	to	20
Front window, Packing table	75	to	150

<u>LOCATIONS</u>	<u>fc</u>		
Hospital			
Warehouse	10	to	20
Medical Examination Room	30	to	75
Operating Room			
Emergency Room	75	to	150
School			
Auditorium, Indoor Gymnasium	10	to	30
Classroom	20	to	75
Laboratory, Library	50	to	150

Maintenance

1. The white plastic disc on the top of the detector should be cleaned with a damp cloth when necessary.
2. Do not store the instrument where temperature or humidity is excessively high.

Repair and Calibration

To guarantee that your instrument complies with the factory specifications, we recommend that Model 810 be submitted to our factory service center at one-year intervals for recalibration, or as required by other standards.

For instrument repair and/or calibration, please call our factory, toll-free, at **(800) 945-AEMC** (800-945-2362).

CHAUVIN ARNOUX, Inc.
d.b.a. AEMC® Instruments
15 Faraday Drive
Dover, NH 03820, USA
(800) 945-2362 • Fax (603) 742-2346
(603) 749-6434

(Or contact your authorized distributor.)

Estimates for repair and calibration are available upon request. Overseas customers must receive written authorization before returning any instrument.

Technical and Sales Assistance

If you are experiencing any technical problems, or require any assistance with the proper use or application of this instrument, please call our technical hotline:

(800) 343-1391 • (508) 698-2115

CHAUVIN ARNOUX, Inc.

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200 Foxborough Blvd.

Foxborough, MA 02035 USA

Fax: (508) 698-2118

www.aemc.com

Limited Warranty

This AEMC Lightmeter Model 810 is warranted to the owner for a period of 2 years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the AEMC Lightmeter Model 810 has been tampered with, abused, or if the defect is related to service not performed by AEMC® Instruments.

What AEMC® Instruments Will Do: If a malfunction occurs within the 2 year period, you may return the AEMC Lightmeter Model 810 to us for repair or replacement free of charge, provided we have your REGISTRATION CARD on file. AEMC® Instruments will, at its option, repair or replace the faulty material.

Note: If a card is not on file, we will require a dated proof of purchase as well as your REGISTRATION CARD accompanied by the defective material.

Limited Warranty (cont.)

What You Must Do: First obtain a return authorization by phone or by fax from AEMC® Instruments, then return the AEMC Lightmeter Model 810, indicating place and date of purchase, with a written explanation of the reason for return. Return material, postage pre-paid to:

Chauvin Arnoux, Inc.
d.b.a. AEMC® Instruments
Service Department
15 Faraday Drive
Dover, NH 03820 USA
Tel: (800) 945-2362
(603) 749-6434
Fax: (603) 742-2346

Caution: To protect against in-transit loss, we recommend that you insure your returned material.

For full warranty coverage, please read the Warranty Card which is affixed to the Warranty Registration Card. Please keep the Warranty Card with your records.