

TIP SHEET – LUMEN METER

What is a lumen meter?

A light meter or lumen meter is a device used to measure the amount of light in a certain area. Lumen meters have many uses such as photography and cinematography, however for our purpose we want to help reduce the amount of wasted light which equals wasted electricity. If conducting an outdoor lighting audit the purpose of a lumen meter would be to reduce the amount of light pollution. Light output is typically measured in luxes or lumens. Sometimes you will hear the word footcandles. This is another standard unit of measure that is used interchangeably with the term lumen. Ehow.com defines a lux as a uniform standard by which the amount of visible light present in a given space can be described where as a lumen is a measure of just how much visible light is produced by an object such as, for example, a light bulb.

1 footcandle/lumens = 10.76 luxes and 1 lux = .093 footcandles or lumens

Where can I purchase a lumen meter?

Eco-Schools USA recommends the light meter from Mastech found on Amazon.com.

http://www.amazon.com/Mastech-Light-LX1010BS-display-Luxmeter/dp/B004KP8RE2/ref=sr_1_5?s=electronics&ie=UTF8&qid=1342571104&sr=1-5

Mastech Light Meter LX1010BS with LCD display, 100,000 Lux Luxmeter - \$20.17

Operating directions

Mastech Light Meter LX1010BS with LCD display, 100,000 Lux Luxmeter operating instructions are found on the next page. The unit of measure displays in luxes. This will be a great opportunity for your student to work on conversions. To see the print better please increase the font size of the document.

FAQ's

1. At what distance do you hold the lumen meter from the light source?

Generally, to measure one area, you hold a light meter at the point of use, for example, on a student's desk.

2. What is the average light meter reading we should expect from a typical classroom?

For schools, we target 50 footcandles in the classroom. Hallways can be less than that.

3. Do you add up the light meter readings for each light fixture point of use in the classroom?

No, measure between the light fixtures to get the lowest light level reading; this insures that even if a student's desk is in between fixtures they will have enough light. You do not add readings together. Another option is to take an average, but it is preferable to use the minimum reading.

OPERATION MANUAL DIGITAL LUX METER

Your purchase of this DIGITAL LUX METER marks a step forward for you into the field of precision measurements. Although this LUX METER is a complex and delicate instruments, its ruggedness will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

Attention: the coiled cable with a LIGHT SENSOR allows the user to take measurements at an optimum position, which also comes with a dust cover to keep the frosted light sensor cover from getting dirty or scratched when stored and to help keep calibration accurate.

1. FEATURES

- Precise and easy readout.
- High accuracy in measuring.
- LSI-circuit use provides high reliability and durability.
- Permits a wide range of light measurements.
- LOW BATTERY indicator.
- Auto zero adjust.
- LCD display provides low power consumption.
- Compact, light-weight, and excellent operation.
- LCD display can clearly read out even in high ambient light.
- Separate LIGHT SENSOR allows user take measurements at an optimum position.

2. GENERAL SPECIFICATIONS

Display	18mm (0.7") LCD (Liquid Crystal Display).
Ranges	0-50,000 Lux. 3 Ranges.
Over-input	Indication of "1"
Sampling Time	0.4 second.
Operating Temperature	0° to 50° C. (32° -122° F)
Operating Humidity	less than 80% R.H.

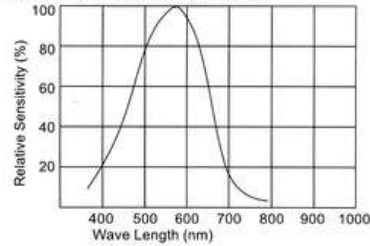
Dimension	118 x 70 x 29mm (4.6 x 2.7 x 1.1 inch).
Weight	200g / including battery.
Power Supply	006P DC9V battery, Consumption current approx. 2 mA.
Standard Accessories	Light Sensor 1 pc. Instruction manual 1 pc.

3. ELECTRICAL SPECIFICATIONS

Range	Resolution	Accuracy (23±5° C)
0-2,000 Lux	1 Lux	± (5%+2d)
2,000-19,990 Lux	10 Lux	± (5%+2d)
20,000-50,000 Lux	100 Lux	± (5%+2d)

NOTE Accuracy tested by a standard parallel light tungsten lamp of 2854° K temperature.

4. SPECTRUM FOR LIGHT SENSOR:



5. CORRECTION FACTOR:

Mercury Lamp	x 1.1
Fluorescent Lamp	x 1.0
Incandescent Light	x 1.0
Daylight	x 1.0

6. FRONT PANEL DESCRIPTION

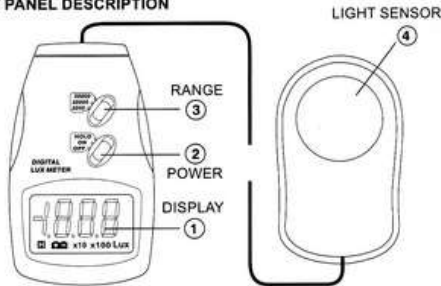


Fig. 1

7. MEASURING CONSIDERATION:

As the DIGITAL LUX METER is a high accurate & sensitive instrument and its PHOTO SENSOR has special feature for the curve on low display reading area. Therefore if display indicates one or more leading zeros, user has to shift Range switch to the next lower range scale to improve resolution and accuracy. For example.

Range	x 1	x 10	x 100
Display Reading	182	018	002

User should select Range Switch to "x 1" range., and the exact reading values is 182 Lux.

8. REPLACEMENT OF BATTERY

- (1) It is necessary to replace battery, when left corner of LCD display show " ".
- (2) Slide the battery cover.
- (3) Replace the battery (006P DC 9V).

Mastech Professional Luxmeter LX1010B

LOCATIONS	ADEQUATE LIGHT LEVELS FOR YOUR WORKING OR AT YOUR WORK AREAS																		
	10,000	5,000	3,000	2,000	1,500	1,000	750	500	300	200	150	100	75	50	30	20			
FACTORY			ELECTRONIC PARTS ASSEMBLY LINE - DRAFTING		TYPISTING AT PRINTING SHOP - INSPECTION WORK		TEXT WORK AT PRODUCTION LINE		PACKING WORK		LIFT ENTRANCE PASSAGE		INDOOR EMERGENCY STAIRS HALLWAY - LOADING OR UNLOADING WORK						
OFFICE				• TYPING • SHIFTING		CLERICAL WORK		CONFERENCE ROOM DINING ROOM RECEPTION ROOM		CORRIDOR STAIRS		ENTRANCE HALLWAY		INDOOR EMERGENCY STAIRS					
HOUSE				• SEWING		• READING • STUDY		• MAKE-UP • DINING TABLE		• RECREATION ACTIVITIES		WASHING							
STORE				• FRONT OF SHOW WINDOW		• SHOW WINDOW • PACKING TABLE		ELEVATOR		• DISPLAY STAND		RECEPTION ROOM		CORRIDOR STAIRS		INDOORS			
HOSPITAL		EYE EXAMINATION						OPERATING ROOM EMERGENCY TREATMENT				MEDICAL EXAMINATION ROOM DINING ROOM		WAITING ROOM		SOB ROOM HALLWAY		STAIRS EMERGENCY STAIRS	
SCHOOL								- DRAFTING ROOM - LABORATORY LIBRARY				CLASS ROOM		INDOOR GYMNASIUM AUDITORIUM HIGH SCHOOL				EMERGENCY STAIRS	
RESTAURANT								• SHOW WINDOW				COOKING ROOM DISHWASHER		ENTRANCE WASH-ROOM		CORRIDOR STAIRS			
BABER BEAUTY PARLOR								• HAIR DYEING • MAKE-UP • HAIR DRESSING											• SHIRING • HAIR WASHING • STYLING

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