INSTRUCTION MANUAL

MT942

LED LIGHT METER

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1. DESCRIPTION

Measures light from visible luminaries equipped with white light LED, fluorescent, metal halide, high-pressure sodium and incandescent sources.

2. SAFETY PRECAUTION

- Do not operate the meter under the environment with explosive gas (material), combustible gas (material) steam or filled with dust.
- In order to avoid reading incorrect data, please replace the battery immediately when the symbol "▭" appears on the LCD.
- In order to avoid the damage caused by contamination or static electricity, do not touch the circuit board before you take any adequate action.
- Operating Environment: Indoors use, This instrument has been designed for being used in an environment of pollution degree 2.
- Operation Altitude : Up to 2000 M.
- Operating Temperature & Humidity: 5°C - 40°C, 0% - 70%RH.
- Storage Temperature & Humidity :-10°C - 60°C, 0% - 70%RH.
- EMC:EN61326-1 (2006) . IEC61000-4-2 (2006). IEC61000-4-3 (2006) + (2007).

3. PREFACE

The flux of light received in a unit area of a certain side being shown is popularly known as illumination. The measuring unit in both United Kingdom and America is known as foot-candles light, but in Europe It is also known as meter candlelight. One foot-candles light is the illumination of light that falls on one side which is one foot away from a one foot-candlelight and exactly intersecting with the light.
Its abbreviated form is written as 1 Fc= I Lm/ft, similarly, one-meter candlelight is the illumination of light that falls on a side which is one meter away from a one meter candlelight and exactly intersecting the light. It is also called Lux i.e. the flux of light being received in each sq. meter is called the illumination of one lumen. 1 FC=10.764 LUX, 1 LUX= 0.09290 FC.

therefore, Nbr. of foot (meter) candlelight =

$$\frac{\text{Nbr .of Lumen}}{\text{Area (sq .foot or sq .meter)}}$$

4. FEATURES

- Overload Indication: LCD screen will show "OL" on the upper left-hand corner
- Low battery indication "  "
- Sampling Rate : 2.5 times per second for digital display
- Spectral response close to CIE luminous spectral efficiency
- Cosine Angular corrected
- According to JIS C1609 : 1993 and CNS 5519 general A class Specifications
- Measuring lights source : LEO white light and all visible light
- Measuring intensities of illumination in Lux or footcandles
- Many application include : Warehouses , factories, office buildings, restaurants, schools, library, hospitals, photographic, video, parking garages, museums, art galleries, stadiums, building security
- Data hold
- Maximum/ Average/ Minimum Hold
- Zero adjustment
- Auto power off and disable function
- Auto ranging

5. SPECIFICATIONS

Function	Range	
Display	4000 count, maximum display 3999	
Sensor	Silicon photodiode with filter	
Measuring Range	40, 400, 4000,40000, 400000 Lux 40, 400, 4000, 40000 Footcandles	
Accuracy	±3% (Calibrated to standard Incandescent lamp 2856°K and Corrected LED day while light Spectrum). 6% other visible light source	
Angle deviation from cosine characteristics	30°	±2%
	60°	±6%
	80°	±25%
Power Supply	1.5V AAA x3 alkaline battery	
Dimensions	162(L) x 63(W) x 28(H)	
Weight about	250g	
Accessories	user manual	
Length of wring for light sensor : Approx. 1.5M		

6. OPERATION

1. Press the " ⏻ " button to turn power on or off.
2. Remove sensor cap and place the sensor perpendicular to the light.
3. Select LUX or FC.
4. If you want to keep the reading value on the LCD screen permanently after testing, Press the " HOLD " button.
5. When done testing, replace the sensor cover to protect the filter and sensor.

6.1. Data Hold

Freezes the reading present on the LCD screen at the moment the button is pressed.

6.2. ZERO

Press the" ZERO " button for the zero adjustment if any digits appear on the LCD screen, when the light sensor cap is not attached "CAP" will be shown on the screen. make sure that it is Attached to the light sensor.

6.3. MAX/AVG/MIN

Press " ▲ " button simultaneously Lockup data maximum and average and minimum value of measure data. Press the " ▲ " button for more than 1 seconds to disable this feature.

6.4. LX/FC/CD

Illuminance LUX or Foot candle and luminous intensity measuring unit button.

6.5. Light Source

Light source selection 1 - 9 features, each light source can set correction parameters, default as 1.000.calibration parameters can be set to 0.001 to 1.999, when the L. S. button is pressed for more than 1 second, the digits of 1.000 on the lower right-hand corner of the screen will be flashing, press ▲ or ▼, you can change the calibration parameters as to 1.002, the display changes immediately, set 200.0x1 .008= 201 .6, press L .S button for less than 1 second, LCD Light source below the LN flashing, press ▲ or ▼ to change L 1 to L9 . Setup complete press " HOLD " for more than 1 second .

6.6. Light Source factor

L 1→LED white day light: 0.99.
L2~L9→Default standard light source A: 1.00.

6.7. Auto-Power Off

Power off automatically after approx. 3 to 5 minutes without using the meter.

6.8. Disable Auto Power Off

When the power is on, press the ⏻ button for more than 1 second, to cancel automatic shutdown. Automatic shutdown feature is enabled if "↺" shows on the screen.

6.9. MEM (memory)

Press button for one second to store the data, the LCD screen will display M and NO. 01~NO. 99.

6.10. READ (read memory)

Press the MEM READ button for more than one second to display the store values, the LCD will display R and MEM and NO. 01~NO. 99, press ▲ or ▼ Keys to review all the stored values, for example, N0.1→N0.2 until N0.99. Press the MEM READ button for more one second to disable this feature.

6.11. CLEAR (clear memory)

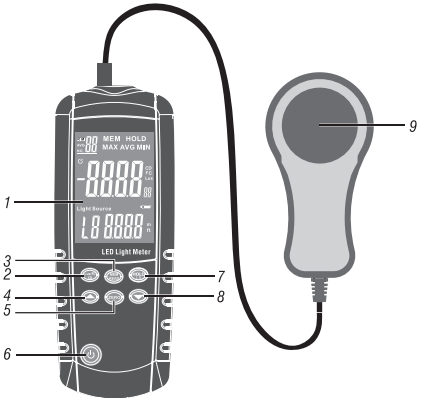
When power is off, press MEM READ and ⏻ buttons together, then the screen will display "Clr " which means the memorized data is erased.

7. LUMINOUS INTENSITY MEASUREMENT

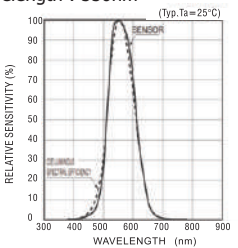
1. Press the "⏻ " button to turn power on or off .
2. Remove sensor cap and place the sensor perpendicular to the light .
3. Press " LUX/FC " button for more than one second .
4. Press ▲ or ▼ button to select ft(feet) or (meter).
5. Press " LUX/FC " button for less than one second.
6. Press ▲ or ▼ button to set the distance between the light center of lamp and measurement base level.
7. Press " LUX/FC " button for less than one second.
8. Read the display.
9. Press " LUX/FC " button for more than one second to disable the feature .
   - The luminous intensity is calculated using the following formula: Luminous intensity (cd) =illumination (LUX) x distance (m2)
   - The preset maximum distance is 0.01 - 30.47 m or 0.01 -99.99 ft.
   - If a single light source is used and is regarded as a single-point light source, the luminous intensity of the light source can be calculated and displayed, by setting the distance from the light source to the measuring point.

8. INSTRUMENT DESCRIPTION

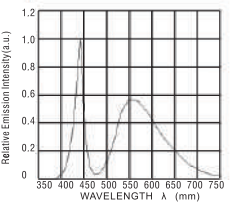
1 - Display (LCD)
2 - LUX/FC/CD button
3 - MEM/READ
4 - MAX/AVG/MIN and setup upward
5 - Real time auto zero
6 - Power ON/OFF and disable auto power off
7 - Setup downward
8 - DATA HOLD and light source select (LS.)
9 - Photo detector



- Relative Spectral (Sensitivity)
  The deviation from the comparative standards for luminosity is determined by JIS standard C 1609-1993.
  Peak sensitivity wavelength : 550nm

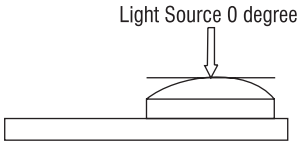


- Corrected LED day white light Spectrum



9. ATTENTION

- Set for referring the testing of source of light is located at the right top end (0 degree) of the light sensor ball plane.
- When the meter is not in use, please keep the cap of the light sensor in its place to avoid the photo diode from wearing out.



- When it is not in use for a long time, please remove the batteries and avoid keeping it in a place of high temperature and humidity.

10. RECOMMENDED LEVELS OF ILLUMINATION

Suitable levels of illuminance (According to the JIS standard Z 9110-1979)

Offices

Illuminance (LUX)	Place
1500 to 750	Offices, designing, drawing rooms
750 to 300	Offices, conference rooms, computer rooms
300 to 100	Workrooms, corridors, stairways, restrooms
75 to 30	Indoor emergency stairways

Factories

Illuminance (LUX)	Place
3000 to 1500	Where such work as assembling, inspecting testing, selecting, extremely precision Visual work
1500 to 750	Assembling, inspecting, testing, selecting, precision visual work
750 to 300	Assembling, inspecting, testing, selecting and visual ordinary work
300 to 150	Wrapping and packing
75 to 30	Indoor emergency stairways

Schools

Illuminance (LUX)	Place
1500 to 300	Precision drawing or drafting, precision experimenting, library
750 to 200	Classrooms, library reading rooms, staff rooms, gymnasium
300 to 75	Lecture halls, assembly room corridors, locker rooms, stairways, restrooms
75 to 30	Warehouses and emergency stairways
10 to 2	School passages

11. BATTERY REPLACEMENT

1. Remove the battery cover
2. Replace the battery
3. Replace the battery cover

12. END OF LIFE

Caution:
this symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal

11. RECOMMENDED ILLUMINATION

Locations		Lux	FC
Office	Conference, Reception Room	200~750	18~70
	Clerical Work	700~1,500	65~140
	Typing Drafting	1,000~2,000	93~186
Factory	Visual Work At Production Line	300~750	28~70
	Inspection Work	750~1,500	70~140
	Electronic Parts Assembly Line	1,500~3,000	140~279
	Packing Work, Entrance Passage	150~300	14~28
Hotel	Public Room, Cloakroom	100~200	9~18
	Reception	200~500	18~47
	Cashier	750~1,000	70~93
Store	Indoors Stairs Corridor	150~200	14~18
	Show Window, Packing Table	750~1,500	70~140
	Forefront of Show Window	1,500~3,000	140~279
Hospital	Sickroom, Warehouse	100~200	9~18
	Medical Examination Room	300~750	28~70
	Operating Room, Emergency Treatment	750~1,500	70~140
School	Auditorium, Indoor Gymnasium	100~300	9~28
	Class Room	200~750	18~70
	Laboratory, Library, Drafting, Room	500~1,500	47~140

1FC=10.76Lux

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