INSTRUCTION MANUAL
MT943
DATA LOGGING LIGHT METER

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1. INTRODUCTION

- The digital illuminance meter is a precision instrument used to measure illuminance (Lux, footcandle) in the field.
- It is meet CIE photopic spectral response.
- It is fully cosine corrected for the angular incidence of light.
- The illuminance meter is compact, tough and easy to handle owing to its construction.
- The light sensitive component used in the meter is a very stable, long-life silicon photo diode and spectral response filter.

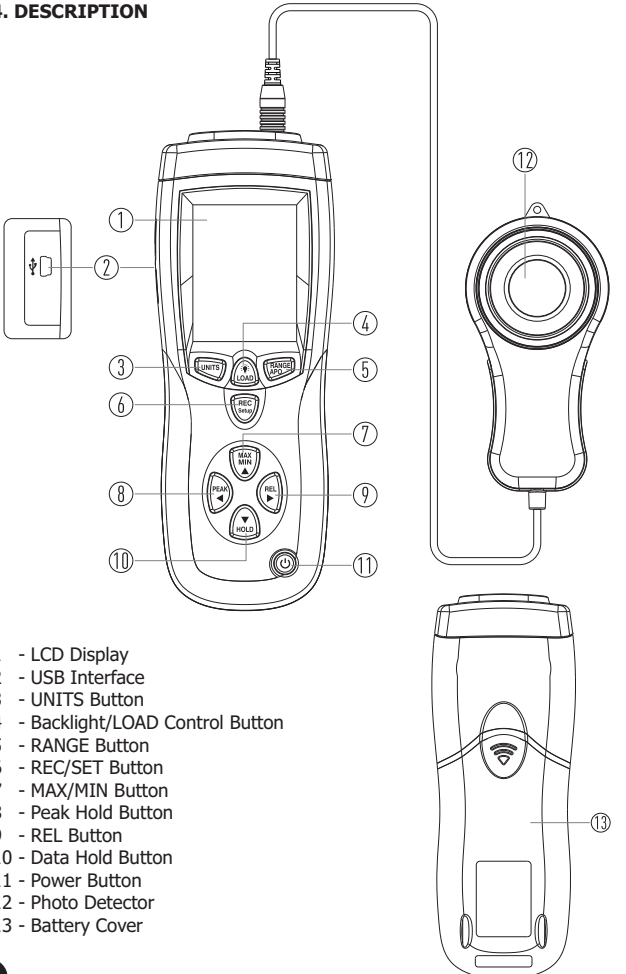
2. SAFETY

- Light-measuring levels ranging form 0.1Lux~0.1kLux/0.01FC~0.01kFC, repeatedly.
- High accuracy and rapid response.
- Data-hold function for holding measuring values.
- Unit and sign display for easy reading.
- Automatic zeroing.
- Meter corrected for spectral relative efficiency.
- Correction factor need not be manually calculated for non-standard light sources.
- Short rise and fall times.
- Peak-hold function for tracing the peak signal of light pulse with least duration 10μs and keep it.
- Capable of selecting measuring mode in Lux or FC scale alternatively.
- Auto power off 15minutes or disable Auto Power Off.
- Maximum and minimum measurements.
- Relative reading .
- Easy to read large backlit display.
- USB output connect with PC.
- 4 Level ranging.
- 99 values in memory ,that could be read on the meter.
- More than 16000 values records datalogger.

3.SPECIFICATIONS

Function	Range
Display	3-3/4 digit LCD with high speed 40 segment bar graph.
Measuring Range	400.0Lux, 4000Lux, 40.00kLux and 400.0kLux / 40.00FC, 400.0FC, 4000FC, 40.00kFC **Note:** 1FC=10.76Lux, 1kLux=1000Lux, 1kFC=1000FC
Over Range Display	LCD will show "OL" symbol.
Spectral Response	CIE Photopic (CIE human eye response curve).
Spectral Accuracy	CIE Vλ function f1′ ≤6%
Cosine Response	f2′ ≤2%
Accuracy	±3% rdg±0.5%f.s. (<10,000Lux); ±4%
	rdg±10d. (>10,000Lux)
Repeatability	±3%
Sampling Rate	1.3 times/sec of analog bar-graph indication; 1.3times/sec of digital display. Datalogger sampling could be setup.
Photo Detector	One silicon photo diode and spectral response filter.
Operating Temperature	0 to 40°C (32 to 104°F)
Operating Humidity	0% to 80%RH
Storage Temperature	-10 to 50°C (14 to 140°F)
Storage Humidity	0% to 70% RH
Power Source	1 piece 9V battery
Photo Detector Lead Length	150cm (approx.)
Photo Detector Dimensions	115 x 60 x 20mm (L x W x H)
Meter Dimensions	170 x 80 x 40mm (L x W x H)
Weight	390g
Accessories	Carry Case, Instruction Manual, Battery

4. DESCRIPTION



1 - LCD Display
2 - USB Interface
3 - UNITS Button
4 - Backlight/LOAD Control Button
5 - RANGE Button
6 - REC/SET Button
7 - MAX/MIN Button
8 - Peak Hold Button
9 - REL Button
10 - Data Hold Button
11 - Power Button
12 - Photo Detector
13 - Battery Cover

5. OPERATING INSTRUCTIONS

5.1. Power-Up

Press the **Power** Button to turn the meter ON or OFF.

5.2. Selecting the Lux or FC scale

Set the **RANGE** Button to desired Lux or FC range.

5.3. Auto Power Off

Press the **REC/SET** Button and **RANGE/APO** Button, enable the Auto Power Off or disable this function.

5.4. Over Range

- If the instrument only displays "OL", the input signal is too strong, and a higher range should be selected.
- The range will show on the down of the LCD.
- LUX: 400->4k->40k->400k; FC: 40-> 400->4k->40k.

5.5. Data-Hold Mode

- Press the **Data Hold** Button to select Data-Hold mode.
- When Data-Hold mode is selected, the illuminance meter stops all further measurements.
- Press the **Data Hold** Button again to exit Data-Hold mode, then it resumes normal operation.

5.6. Peak-Hold Mode

- Press the **Peak Hold** Button to choose Pmax or Pmin recorder mode, and expose the photo detector to light pulse measuring field.
- Press the **Peak Hold** Button again to exit PEAK recorder mode, then the meter will resume normal operation.

5.7. Maximum and Minimum Mode

- Press the **MAX/MIN** Button to choose the Maximum (MAX) reading, Minimum (MIN) reading and current reading (MAX/MIN blink) recorder mode.
- Press the **MAX/MIN** Button again to exit this mode.

5.8. Relative Reading Mode

- Press the **REL** Button to enter Relative mode.
- The display shown zero value and the current reading will be stored as a zero-in value.
- Press the **REL** Button again to exit this mode.

5.9. USB Mode
Connect with PC with USB, the " ⇔ " will displays in the screen.

510. Back-Light Function
Press the **Backlight** Button to turn on; Press again to turn off.

5.11. Setup Time and Sampling Rate
- Press the **MEM/SETUP** Button and **UNITS** Button key to start to setup the time and sampling.
- The first setup target is the hour, press the **PEAK** or **REL** Button to choose the function of the setting
- Press the **REL** Button to choose function to repeat as below process: Hour->minter->second->sampling->month-> day->week->year->hour……
- Press the **PEAK** Button to choose the function and repeat as below process: Hour->year->week->day->month-> sampling->second->minter->hour->year……
- Press the **MAX/MIN** Button to add the function of setting, press the **HOLD** Button to reduce the function of setting.
- Hold the **MEM/SETUP** and **UNITS** Button to exit the setting time and sampling mode, and then confirm.

5.12. MEM Function
- Press the **MEM/SET** Button to save the present data.
- **HOLD** the **LOAD** Button for 5s to start to load the records.
- Press the **MAX/MIN** Button to add the number of records.
- Press the **HOLD** Button to reduce the number of records.
- After you do that you must hold the **LOAD** Button 5s to resume normal operation.

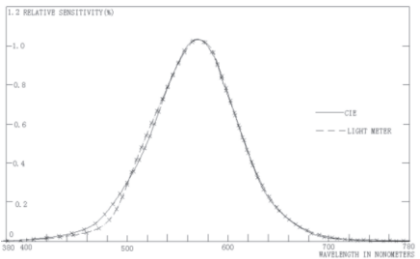
5.13. Datalogger Function
- Setup the time and sampling rate first, the default sampling rate is 1s.
- Hold the **MEM/SETUP** Button for 5s to start the datalogger function, the MEM on the screen will be flicker.
- If the memory IC is full ,the memory number will show 'OL'.
- Press the **MEM/SETUP** Button for 5s to stop the datalogger function, then the meter will resume normal operation.
- Then the datalogger number will return to 1, you could start your records again.
- **HOLD** the **MEM/SETUP** and LOAD Button for 5s to clear the 99 memory.

6. BATTERY CHECK-UP & REPLACEMENT

1. If the battery power is not sufficient, LCD will display low battery and replacement of one new battery is required.
2. After turning off the meter, disconnect the battery cover with a screwdriver.
3. Disconnect the battery from the instrument and replace it with a standard 9V battery and replace the cover.

7. SPECTRAL SENSITIVITY CHARACTERISTIC

On the detector, the applied photo diode with filters makes the spectral sensitivity characteristic meeting C.I.E.(INTERNATIONAL COMMISSION ON ILLUMINATION) Photo curve V (λ) as the following chart described.



8. CONNECTING TO PC

8.1. System requirements

Windows 10 or higher.

8.2. Connection

1. Switch the light meter on.
2. Plug the other end of the connecting cable to serial interface of the PC (USB).
3. Plug the USB line connecting cable 13.6mm jack plug into the meter socket
4. Start the light meter software.
5. Selecting the COM port 3, note select the 4 COM.

Note: You should switch the light meter on before you plug the USB line connecting cable 13.6mm jack plug into the meter.

9. INSTALLING THE SOFTWARE

1. Start windows
2. Insert the USB into the PC or Laptop and download the software.
3. Now follow the installation program instructions.
4. Once the software is installed, switch on the meter.
5. Start the software.
8. Selected the COM port 3, note is 4.
9. If the connection is not in order, the message "NO CONNECTION" appears on the screen.

10. MAINTENANCE

- The white plastic disc on the top of the detector should be cleaned with a damp cloth when necessary.
- Do not store the instrument where temperature or humidity is excessively high.
- The reference level, as marker on the face plate, is the tip of the photo detector globe.
- The calibration interval for the photo detector will vary according to operational conditions, but generally the sensitivity decreases in direct proportion to the product of luminous intensity by the operational time.
- In order to maintain the basic accuracy of the instrument, periodic calibration is recommended.

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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