



NIEUWKOOP

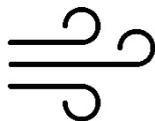
USER MANUAL



LX1015

LUX/°C METER

0-200.000 LUX



TO MEASURE  TO KNOW



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1. Product Introduction

Split type illuminometer is a professional instrument for measuring light intensity and brightness, which is used in light intensity measurement engineering, quality control, health care and light intensity measurement in various surroundings, such as factories, schools, offices, transportation and homes.

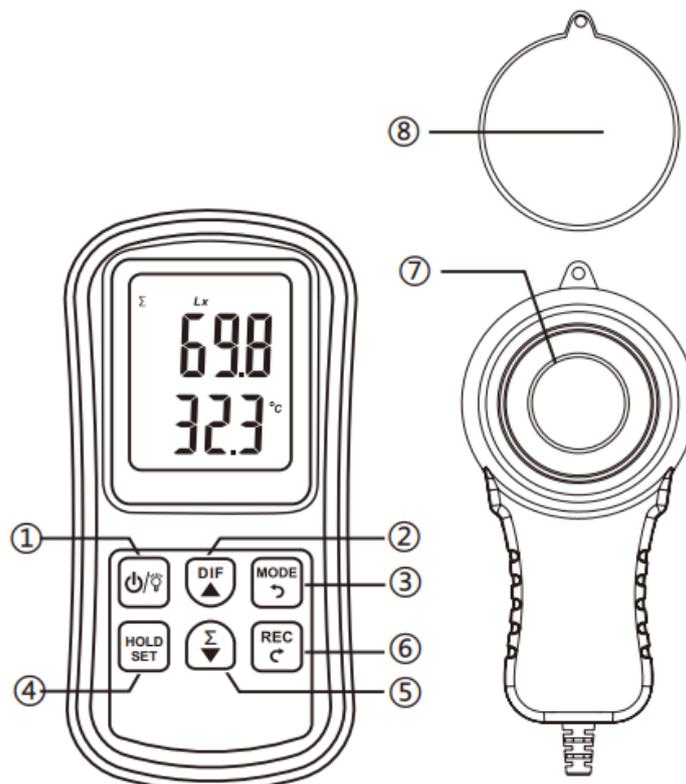
2. Product Features

This can split type illuminometer not only measure current value, maximum value, minimum value and difference value of illumination and temperature, but also hold illumination and temperature data, calculate illuminance integral and average integral averaging and record data.

1. Switch illumination unit (Lux/Fc) and temperature unit (°C/°F)
2. Two recording modes: automatic storage of illumination data (up to 2000 groups) and manual storage (up to 60 groups)
3. Automatic range and quick response, measurement in environment with insufficient light.
4. Screen backlight for darkroom operation.
5. Auto-off after no operation for a long time (the default span is 10 mins and can be reset)

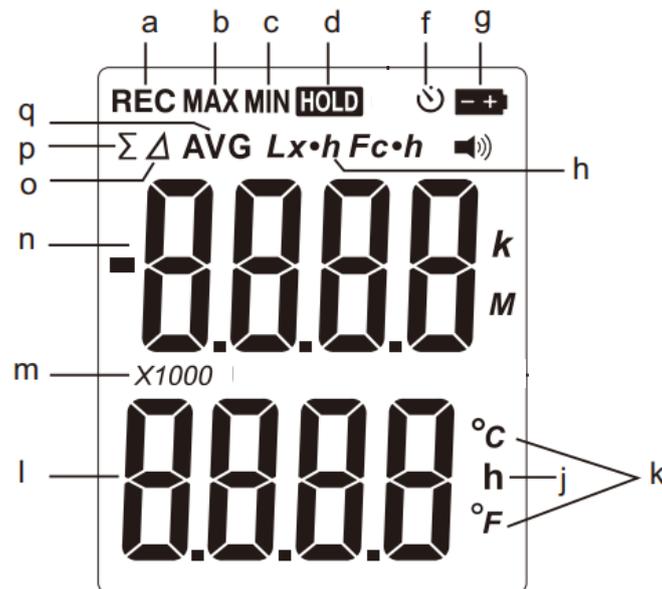
3. Names and functions of parts

1. Power/backlight
2. Back/difference value
3. Mode/return
4. Data holding/setting
5. Forward/integral
6. Record/confirm
7. Illumination head
8. Lens cover





4. LCD display



- | | |
|------------------------------------|---|
| a. Data recording | j. Hour |
| b. Max value/auto storage | k. Temperature unit |
| c. Min value/manual storage | l. Temperature value and measurement values |
| d. Data holding | m. Illumination value gear |
| f. Power off timing icon | n. Illumination value and parameter setting |
| g. Low battery indicator | o. Difference icon |
| h. Illumination unit—symbol of lux | p. Integral value symbol |
| | q. Average value symbol |

Note: When the indicator **-+** flashes, please change batteries, or the measurement value may not be accurate.



5. Function description

There are two working modes of illuminometer, normal mode and setting mode. Each working mode has multiple interfaces:

(1) Normal mode:

1. Real-time interface: display current measured value of illumination and temperature.
2. Max value interface: record from startup, display maximum value of illumination and temperature.
3. Min value interface: record from startup, display minimum value of illumination and temperature.
4. Difference value interface: display the difference value between the latest measured value of illumination and enter the saved value when first entering the interface.
5. Holding interface: when the current measured value of illumination and temperature is no longer updated, the data remains unchanged.
6. Integral interface: the integral of the current illumination value against time (unit: hour).
7. Integral averaging interface: within the specified time (unit: hour), the average of illumination value integral against time.
8. Manual storage interface: you can manually save the current illumination value by pressing the button and can check the total groups of manually stored data (storage mode), with the maximum capacity of 60 groups. You can manually refer to certain illumination data or delete all manually stored data.
9. Automatic storage interface: you can set the timing period, and the illumination value will be automatically recorded; you can refer to the total groups of automatically stored data (storage mode), with the maximum capacity of 2000 groups; you can manually refer to certain illumination data or delete all auto-stored data.

Note: The integral operation and automatic storage operation can be turned on at the same time. If successful, "Σ" and "REC" at the top of the screen will flash.

(2) Setting mode:

1. Manual storage setting interface: set manual storage on and off.
2. Auto storage settings interface: set automatic storage on and off.
3. Display unit setting interface: set unit of illumination value (Lux/Fc) and temperature value unit (°C/°F)
4. Timing shutdown setting interface: set shutdown timing on and off without button operation



6. Function operations

1. Turn on/off

Install batteries for the instrument, long press  button for 2 seconds, and enter real-time interface after full-screen display for 1 second.

2. Backlight on/off

After startup, short press  button in any interface to turn on/off backlight. Backlight will add up power consumption, so it is set to be off since startup.

3. Max / min value of illumination and temperature

In the real-time interface, short press  button to switch max value interface and min value interface, the top of the screen displays "MAX" and "MIN" respectively; short press the button again in the minimum interface to return to real-time interface.

4. Difference value of illumination

In the real-time interface, short press  button to switch to difference value interface. Negative number indicates that the real-time value becomes smaller, positive number indicates that the real-time value becomes bigger. The top of the screen displays "Δ" in difference value interface; short press  again in the difference interface and return to real-time interface. You can also press the  button to return to the real-time interface in difference value interface.

5. Data holding

In real-time interface or difference value interface, short press  button to switch to holding interface, and the top of the screen displays "HOLD"; short press the  button again in holding interface to return to the interface before. You can also return to the real-time interface by short press  button in holding interface.



6. Integral operation

In real-time interface, press  button to switch integral interface and integral averaging interface in turn. "Σ" and "Σ AVG" are respectively displayed at the top of screen; short press  again in integral averaging interface to return to real-time interface. You can also short press  button to return to the real-time interface under integral interface or integral averaging interface. In Integral or Integral averages screen, start press  button to start or stop the integra. After the integration starts, it will keep running in the background, and the "Σ" at the top of the screen will start flashing, and the "Σ" will stop flashing when integration stops.



In integral interface, the upper half of the screen shows the integral of illumination in unit of $Lx \cdot h$ or $Fc \cdot h$, the lower part shows the time span for integral, in unit of hour(h).

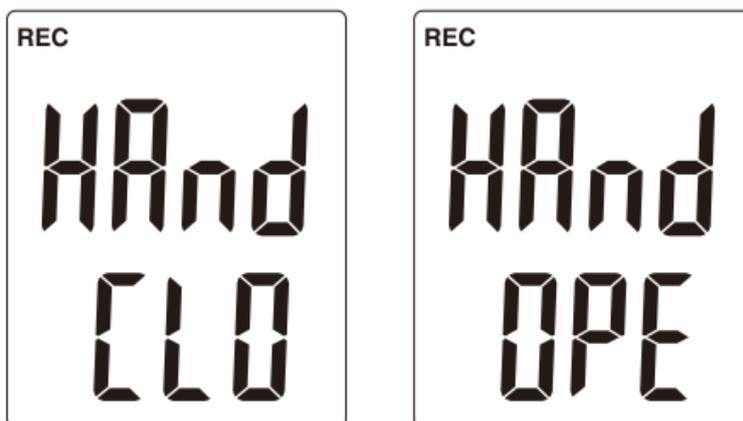


In average integral interface, the upper half of the screen shows the average illuminance in unit of Lx or Fc , the lower part shows the time for integration, in unit of hour (h).



7. Manual storage operations

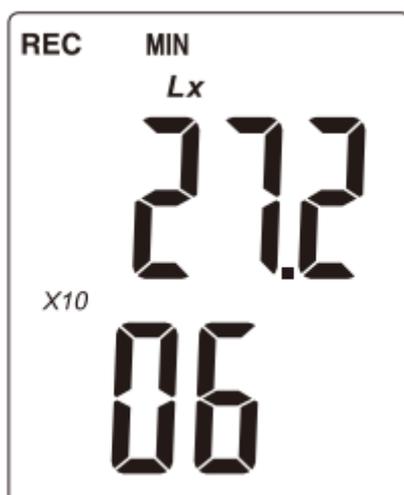
In real-time interface of normal mode, long press  button for 1s to enter into setting mode. Short press this button in the setting mode, switch the interface to manual storage setting interface, the upper half stands for the setting items for manual storage, and the lower half flashes to indicate whether setting items are on. As shown below:



(Left: manual storage off, right: manual storage on)

In manual storage setting interface, short press  button, manual storage is on;
In manual storage setting interface, short press  button, manual storage is off;

After confirming manual storage state, long press  for 1s to exit the setting mode and return to real-time interface. Then you can manually save data by pressing , the current saved result will be displayed for 1s of the storage is successful. As shown below:

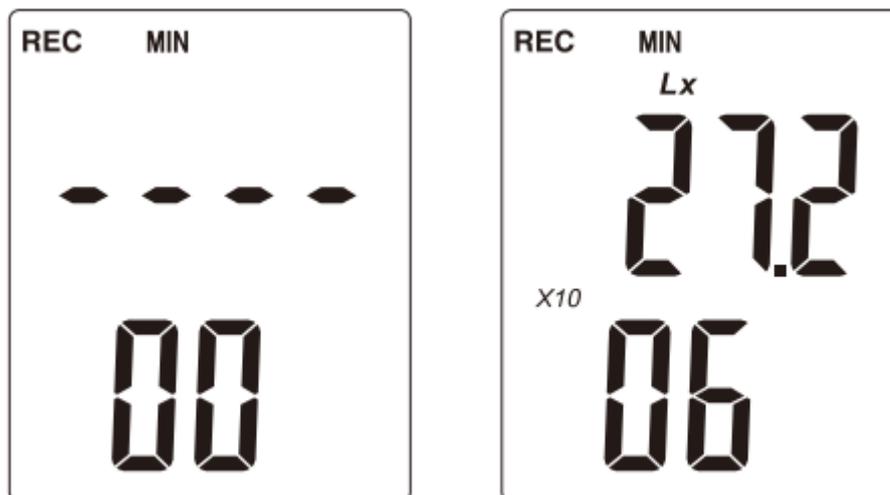


"MIN" at the top of screen means that the maximum storage groups in current manual storage area is up to 60; The upper part shows the current saved value of illumination, the lower part shows the current storage number of data.



8. Manual storage query

In real-time interface, long press  for 1s, if it is automatically stored interface now, short press  to switch to manual storage interface, as shown below:



(Left: No record for manual storage, Right: 6 records for manual Storage)

The "MIN" at the top of the screen refers to the latest stored record displayed initially in the current manual storage area; short press  to switch to the previous record, short press  to switch to the next record; the lower part indicates the record number, and the upper part indicates the recorded illumination value. Long press  for 1s and return to the real-time interface.

9. Manually delete stored records

In real-time interface, press  for 1s, if it is auto-save interface now, short press  to switch to the manual storage interface, then long press  for 1s to delete all manually stored data, as shown below :

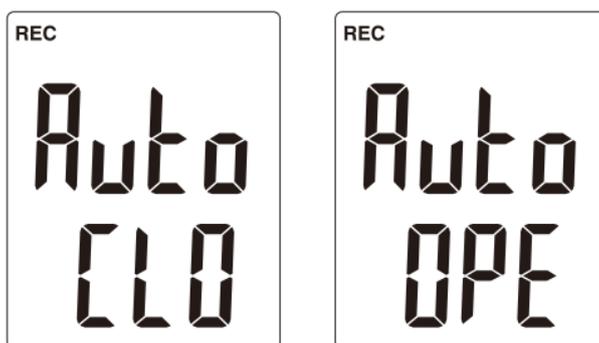


Long press  for 1s and return to real-time interface.



10. Automatic storage

In the real-time interface of normal MODE, long press  for 1s, enter setting MODE and long press this key again or long press MODE/ back key to exit setting MODE. Press the  key in the setting mode to switch to the automatic storage setting interface. The upper part represents the automatic storage setting item, and the lower part flashes to indicate the switch state. As is shown below.



(Left: Auto storage is off, right: Auto storage is on)

In automatic storage settings interface, short press  and automatic storage is on;
In automatic storage settings interface, short press  and automatic storage off;

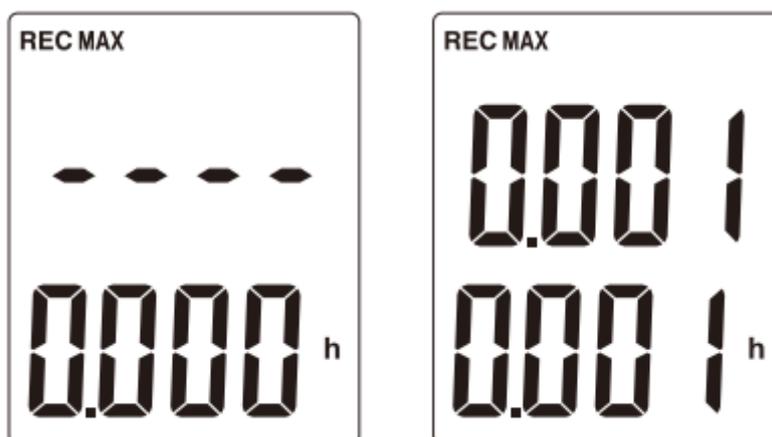
Note: Automatic storage and manual storage can not be on simultaneously, but can be switched off at the same time. Manual storage is on as factory default.

After confirming automatic storage, long press  for 1s to exit the setting mode and return to the real-time interface. In real-time interface, press  for 1s. If it is in manual memory interface now, press  to switch automatic storage interface, as shown below:





"MAX" at the top of the screen indicates that the maximum data group in the current storage area is 2000 at most. Under this interface, short press  button to start automatic storage timer, at the same time return to the real-time interface. Factory default is to record every 0.001 h (3.6s). After recording is on, "REC" on the top of the screen begins to flash. Long press and hold  for 1s under automatic storage interface to enter into time interval setting. When the current decimal point flashes, short press  to switch the position of decimal point, and you can set order of magnitude as "0.000 h" or "00.00 h". Then press  to enter into the setting of specific value. The upper half is the saved time interval (default 0.001h), the lower part can be circuited to the right by short pressing , and to increase or decrease the value of on flashing position with  . As shown below, the interval is set as 0.001h:



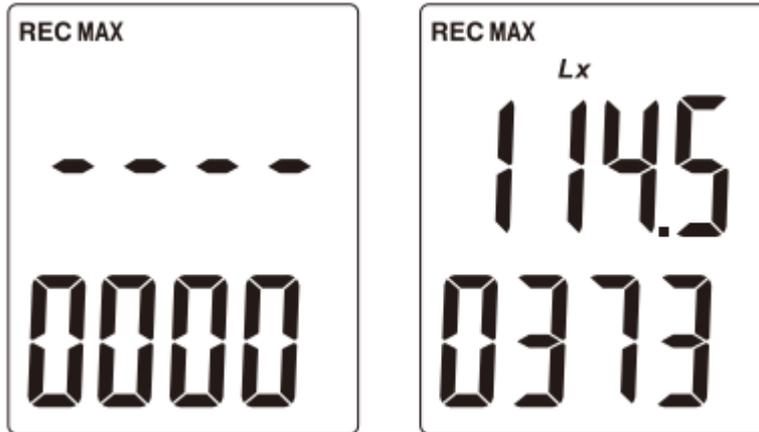
(Left: set decimal point of time interval, right: set time interval value)

After setting the value, long press  for 1s and return to automatic storage interface. Short press  again to start the automatic storage timer, and return to the real-time interface. As shown above, the interval is set to record once every 0.002h (7.2s), the saved results will be dynamically displayed for 1s after successful storage. In the process of automatic storage, short press  under real-time interface to stop automatic storage. If you want to start again with the same interval, enter into automatic storage interface with the operation above, and short press .



11. Automatic store records query

In real-time interface, long press  for 1s. if it is manual storage interface now, short press  button, and switch to automatic storage interface, as shown below:



(Left: Auto storage without record Right: Auto storage with 373 records)

The "MAX" at the top of the screen indicates the latest stored record displayed initially in the current manual storage area; short press  to switch to the previous record and press  to the next record. Keep pressing  or , you can switch the record by 10 items. The lower part shows the record number, the upper part shows the recorded illuminance value. Long press  for 1s and return to real-time interface.

12. Delete automatic stored records

In real-time interface, long press  for 1s. if it is in manual storage interface now, short press  to switch to automatic storage interface, and then long press  for 1s to delete all manually stored data, as shown below :

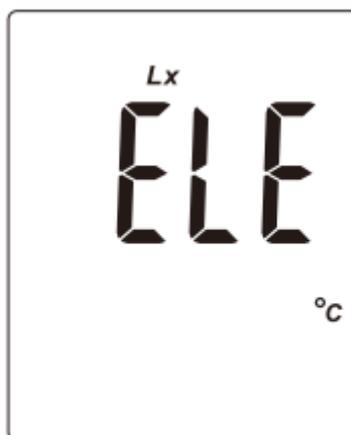


Long press  for 1s to return to real-time interface.



13. Illumination and temperature unit

In real-time interface of normal mode, long press  for 1s, and enter into setting mode. Short press this button in setting mode and switch the interface to unit setting interface, the selected illuminance and temperature unit are in flashing state, as shown below:



LUX/°C--LUX/°F--FC/°C--FC/°F four kinds of unit group. You can short press  to circuit to the right or short press  to circuit to the left.

14. Timing on / off setting

In real-time interface of normal mode, long press  for 1s and enter the setting mode. Short press this button in the setting mode to switch to the setting interface for timing off. The upper part shows the setting item for off-timer, the flashing lower part indicates whether the item is on. As shown below:



In timing off setting interface, short press , the off timer is on;
In timing off setting interface, short press , the off timer is on.



7. Performance and indicators

Refer to JJG245-2005 "illuminometer verification procedures"

Illumination probe		Silicon Diode	
Illumination range		0 ~ 200,000Lux (0 ~20000Fc) , divided into four gears	
Gear	Gear range	Minimum resolution	Accuracy
X1 gear	0.0 ~ 199.9Lux	0.1 Lux	±3%rdg+5dgts
X10 gear	20.0*10 ~ 199.9*10Lux	1 Lux	±3%rdg+10dgts
X100 gear	20.0*100 ~ 199.9*100Lux	10 Lux	±4%rdg+10dgts
X1000 gear	20.0*1000 ~ 199.9*1000Lux	100 Lux	±4%rdg+10dgts
Repeatability		±2%	
Refresh rate		2 times/second	
Temperature probe		NTC Thermistor	
Temperature range		-20 ~ 50°C (-4 ~ 122°F)	
Temperature accuracy		±1.0 °C	
Power		Three AAA batteries	



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