

OPERATING INSTRUCTIONS

LIGHT METER

831

831U USB & DC Power

831W Wireless

831UW USB & DC Power & Wireless



DESCRIPTION

This instrument is a portable easy use, compact-sized digital lightmeter designed for simple one hand operation. Provides selected the lux and fc units. Meter with Backlit LCD display, PEAK (50mS pulse light) and HOLD feature. Auto range or manual range selected.

WARNING

- To avoid electric shock, do not operate this product in wet or damp conditions.
- To avoid injury or fire hazard, do not operate this product in an explosive atmosphere.
- To avoid eye injury, wear eye protection if there is a possibility of exposure to high-intensity rays.
- Do not immerse in liquids, clean the sensor head using only a damp cloth.
- Cover sensor head when not in use to extend silicon photodiode sensor life.

FEDERAL COMMUNICATIONS COMMISSION

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Shielded interface cables must be used in order to comply with emission limits.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

WIRELESS NOTE

Wireless receiver must keep a distance at least 40cm from the meter and meter to meter distance must be at least 30cm.

GENERAL

Operating environment: 0°C to 50°C at < 80%R.H.

Storage temperature: -20°C to 50°C, 0 to 80% R.H. with battery removed from meter.

Low battery indication: The "BAT" is displayed when the battery voltage drops below the operating level.

Battery: 1.5V X 4 pcs AAA size.

Battery Life: 200 hours with low battery indicator on display.

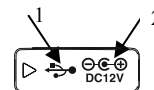
Auto power off: 15 minutes, press power key to resume operation.

Dimensions: 170mm(H) x 44mm(W) x 40mm(D).

Weight: Approx. 200g including batteries(1.5Vx4pcs AAA size).

Back Side: (831/831W except)

1. USB Port
2. DC power JACK(12V)



SPECIFICATIONS

Units: lux, fc

Range: 20lux, 200lux, 2000lux, 20000lux, 200000lux, 20fc, 200fc, 2000fc, 20000fc

Resolution: 0.01lux, 0.001fc

Spectral response: CIE photopic.

Total accuracy for CIE standard illuminant A (2856K): $\pm(3\%rdg + 10dgt)$

Accuracy: Stated accuracy at 23°C \pm 5°C, <70% R.H.

Temperature Coefficient:
 $\pm 10\%$ of specified accuracy/ $^{\circ}$ C change when temperature is out of the range between 18°C~28°C (64.4°F~82.4°F).

Measurement rate: 1 times/second.

CIE Photopic Standard:

The CIE photopic curve is an international standard for the color response of the average human eyes.

Spectral accuracy: $f_1 < 8\%$

Acceptance angle: $f_2 < 2\%$ cosine corrected (150°)

Total accuracy for CIE standard illuminant A (2856K): $\pm(3.0\%rdg + 10dgt)$

CIE standard illuminant A can be realized by means of CIE standard source A, which is defined as: A gas-filled tungsten-filament lamp operating at a correlated colour temperature of 2856K

OPERATING INSTRUCTIONS

1. "⏻" Button:

When the power is off, press "⏻" key to turn on the meter. In the MAX/MIN recording mode, power off function was disabled, unless exiting MAX/MIN mode.

2. "lux/fc" Button:

Press "lux/fc" key to change lux or fc unit.
10.764-footcandles = lux (lumens/meter²)
0.0929-lux = footcandles (lumens/foot²).

3. "☀" Button:

Press "☀" key to trigger on the backlight function, press the "☀" button again to cancel the backlight function. The backlight will switch-off automatically after 30 seconds.

4. "PEAK" Button:

Press "PEAK" key may toggle to show peak measurement and "P" was shown on display.
Peak response time: > 50mS pulse light.

5. "MAX/MIN (▲)" Button:

Press "MIN/MAX" key to enter the "MIN/MAX" recording mode and REC shows on the display. Press the

"MIN/MAX" key again to rotate through the current readings:

MAX: The highest measurement recorded.

MIN: The lowest measurement recorded.

AVG: The average values of the measurements.

Pressing MIN/MAX button over two seconds to exit the function.

In this mode, the APO function and other buttons are disabled, excluding "HOLD" and Back-light buttons. Press and hold down the "MAX/MIN" button for more than 2 seconds to exit the MAX/MIN function.

6. "HOLD" Button:

Press the "HOLD" button to enter the data hold mode, the "H" indicator was displayed at the left of display. When data hold mode is selected, the meter held the present readings and stops all further measurements. Press the "HOLD" button again to cancel data hold mode, and resume measuring.

In "MIN/MAX" mode, press "HOLD" button to stop recording, all values are frozen, press "HOLD" button again to restart recording.

7. "ZERO" Button:

Press "ZERO" key to zero adjustment for immediate measurement, before the adjustment, must cover the cap. Zero adjustment function can be calibrated only in the 20lux and 20fc range, the adjustment range for 0 \pm 50dgt.

8. "SAVE (▼)" Button:

The function saves the lux or fc data in memory. Press the "SAVE" key to save the current data, the symbol "MEM" is displayed to indicate the data are saved. There are 128 data could be recorded into memory and displayed on the top-right LCD.

9. "RANGE" Button:

Press "RANGE" button to select the manual range mode, and turn off the "AUTO" indicator. In the Manual Range mode, press "RANGE" button to switch the range 20lux, 200lux, 2000lux, 20000lux, 200000lux, or 20fc, 200fc, 2000fc, 20000fc in sequence and a new range value is displayed. Hold "RANGE" button for 2 seconds to exit the Manual Range mode, and back to Auto-range.

10. ">5S CLR" Button:

Press "> 5S CLR" key and hold for 5 seconds to clear the data in the memory, the "MEM" and "Clr" indicator is displayed at upper-right LCD.

11. "RECALL" Button:

Press "RECALL" key to enter READ Mode, the "MEM" indicator is displayed at upper-right corner. Press "▲" or "▼" key to review the recorded data. Press and hold down the "RECALL" key for more than 2 seconds to exit the RECALL function.

12. "APO" Button:

Press the "APO" button to trigger on or off APO(auto power off) function and the "APO" indicator is displayed.(If there is no operation within 15min, meter will power off automatically).

13. WIRELESS MODE: (831W/831UW)

Press the "☺" key for more than two seconds to start wireless function. Press the "☺" key again for another two seconds to stop wireless function. The wireless mode will shut down if there is no wireless signal for two minutes.

To SET CH/ID to 00,00, press the "APO" key and "⏻" power key for more than 5 seconds with the meter powered down. The meter will set channel and ID to 00,00 status. The second display will show "1 00" and "C 00", which means that the channel and ID has been set to 00.

To check the channel and ID of the meter:

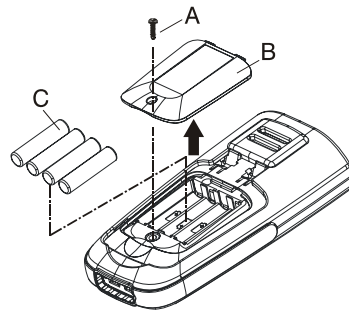
When the meter is off, press "lux/lc" key and "⏻" for 5 seconds, LCD's main display will show channel number, the second display will show ID number.

MAINTENANCE

WARNING

To avoid possible electrical shock, disconnect the thermocouple connectors from the thermometer before removing the cover.

Installing and Replacing Battery



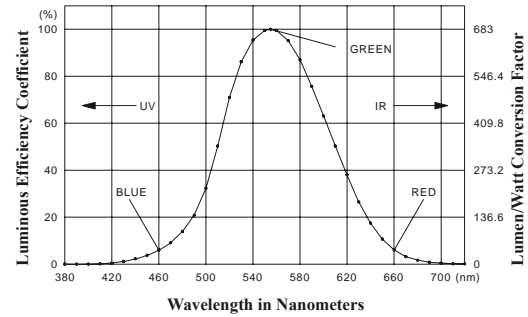
- A. Screw
- B. Battery Cover
- C. Battery

1. Power is supplied by 4pcs 1.5V (SIZE AAA) UM-4 R03.
2. The "🔋" appears on the LCD display when replacement is needed. To replace battery remove screw from back of meter and lift off the battery cover.
3. Remove the battery from battery contacts and replace.
4. When not use for long time remove battery.
5. Don't keep in place with high Temp, or high humidity.

Cleaning

Periodically wipe the case with a damp cloth and detergent, do not use abrasives or solvents.

CIE Photopic Curve



Wavelength (nm)	V _λ CIE Photopic Luminous Efficiency Coefficient	Photopic Lumen/Watt Conversion Factor
380	0.0000	0.05
390	0.0001	0.13
400	0.0004	0.27
410	0.0012	0.82
420	0.0040	2.73
430	0.0116	7.91
440	0.0230	15.7
450	0.0380	25.9
460	0.0600	40.9
470	0.0910	62.1
480	0.1390	94.8
490	0.2080	142.0
500	0.3230	220.0
510	0.5030	343.0
520	0.7100	484.0
530	0.8620	588.0
540	0.9540	650.0
550	0.9950	679.0
555	1.0000	683.0
560	0.9950	679.0
570	0.9520	649.0
580	0.8700	593.0
590	0.7570	516.0
600	0.6310	430.0
610	0.5030	343.0
620	0.3810	260.0
630	0.2650	181.0
640	0.1750	119.0
650	0.1070	73.0
660	0.0610	41.4
670	0.0320	21.8
680	0.0170	11.6
690	0.0082	5.59
700	0.0041	2.78
710	0.0021	1.43
720	0.0010	0.716
730	0.0005	0.355
740	0.0003	0.170
750	0.0001	0.820
760	0.0001	0.041