

Digital Light Meter with Thermometer
Instruction Manual

EL-2000

Thank you for purchasing our Digital Light Meter with Thermometer.
Please read this instruction manual carefully before using to ensure the correct usage of this device.
Please keep this instruction manual for future reference.

Safety Precautions

For safe usage of this device, please observe all statements regarding precautions and warnings in this instruction manual.

ATTENTION

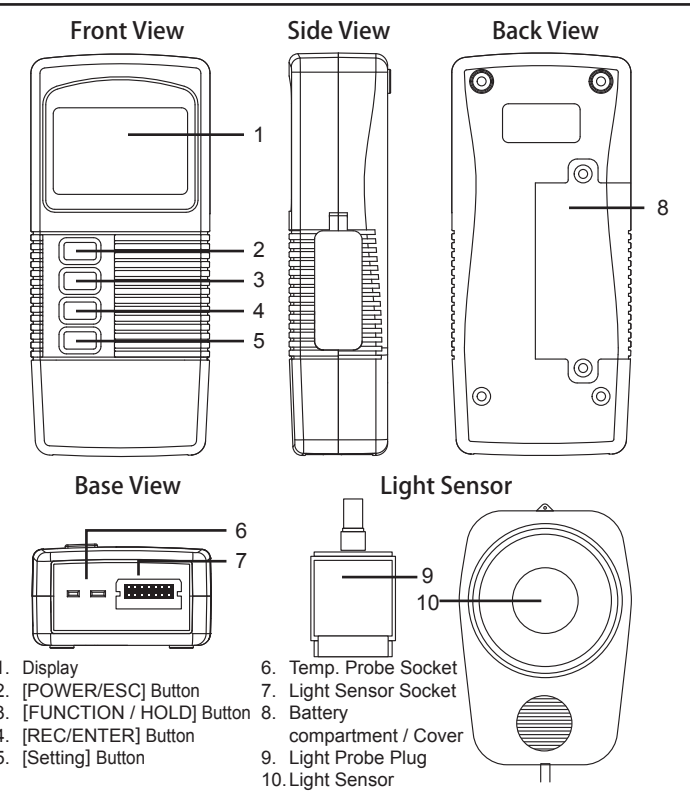
1. Operation

- Do not use this device near machines that emit strong electromagnetic fields or objects that store static electricity.
- Do not drop or subject this device to strong impact.
- Do not use or store this device where it will be exposed to water or in places with wet conditions.
- Do not use or store this device where it can be exposed to direct sunlight, dust, high temperature and high humidity.
- See the battery case markings to ensure that the battery is properly installed.
- For accurate measurements, do not subject this device in measuring sudden change of temperatures.
- Remove the battery when the device will not be used for a long period of time.
- Do not attempt to disassemble or modify this device.

2. Thermocouple Probe

- Do not measure beyond the temperature limits of the thermocouple probe being used.
- Do not use thermocouple probe in places where presence of electric shock is suspected.
- Avoid using the thermocouple probe to measure materials that may cause rust or corrosion. If used, wipe the thermocouple probe with a dry clean cloth after every use.
- Do not attempt to disassemble or bend the miniature connector of the thermocouple probe.
- Avoid bending, dropping or hitting the thermocouple probe, even when not in use.
- When measuring surfaces, make sure that the thermocouple probe is in contact with the surface perpendicularly to record accurate measurements.
- In measuring surfaces of non-metallic materials, transfer of heat takes longer than normal, therefore, make measurement time longer to get.

1. Functions



1. Display
2. [POWER/ESC] Button
3. [FUNCTION / HOLD] Button
4. [REC/ENTER] Button
5. [Setting] Button
6. Temp. Probe Socket
7. Light Sensor Socket
8. Battery compartment / Cover
9. Light Probe Plug
10. Light Sensor



Please note that misuse of this device may lead to injury to the user or damage to the device.
Please observe all safety precautions and warnings in this instruction manual.

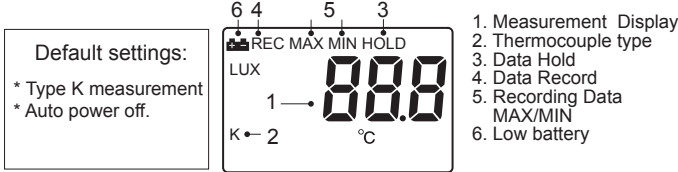
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2. Measuring Procedure



a. Light Measurement

- 1) Insert the Battery into the Battery Box. (Refer to section 6. Battery Replacement).
 - 2) Insert the light sensor into the input socket.
 - 3) Press the [POWER/ESC] button to switch-on the device.
 - 4) Position the light sensor facing the light source.
 - 5) The reading will then be shown on the main display.
 - 6) Press the [POWER/ESC] button to switch-off the device.
- <Zero Adjustment>
- 1) Cover the Light sensor with the attached cap. The zero adjustment can be executed when display value is within 10 LUX.
 - 2) Press the [Setting] button once.
 - 3) The display will show zero value.

b. Temperature Measurement

- 1) Insert the thermocouple probe into the probe socket.
- 2) Press the [POWER/ESC] button to switch-on the device.
- 4) Engage the thermocouple probe to the object to be measured.
- 5) The temperature reading will then be shown on the main display.
- 6) Press the [POWER/ESC] button to switch-off the device.

3. Functions Operation

a. Switching Light and Temperature Measurement

- 1) Insert the light sensor and the thermocouple probe into each socket.
- 2) Press the [POWER/ESC] button to switch-on the device.
- 3) Press the [FUNCTION/HOLD] button for at least 2 seconds to switch Light Measurement and Temperature Measurement.

Note : Make sure to insert the light sensor into the socket before switching-on the device.
The display of light measurement is disabled in the case the thermocouple probe is only inserted into the device.

b. Data Hold

- 1) During the measurement, press the [FUNCTION/HOLD] button to hold the last measured value on the display. The display will also show the "HOLD" symbol.
- 2) Press the [FUNCTION/HOLD] button again to exit the Data Hold function.

c. Data Record (Max. / Min. Reading)

- 1) To start recording the measurement data, press the [REC/ENTER] button once. The display will show the "REC" symbol.
- 2) While the "REC" symbol is on display, press the [REC/ENTER] button once to display the Maximum measured data recorded. The "MAX" symbol will also appear on the display. Press the [REC/ENTER] button once again to display the Minimum measured data recorded. The "MIN" symbol will appear on the display. To view back "Max"("Min") measured data, press [REC/ENTER] button alternately.
- 3) To exit the Data Record function, press the [REC/ENTER] button for at least 3 seconds.

d. Advanced Setting Procedure

- 1) Before executing Advanced Setting Procedure, exit the Data Hold function and the Data Record function.
- 2) Press the [FUNCTION/HOLD] button for at least 2 seconds to switch Light Measurement and Temperature Measurement.

<Light Measurement>

- 3-1) During Light Measurement, press the [Setting] Button for at least five seconds to enter the Advanced Setting Procedure.
- 4-1) Setting items are switched each time the [Setting] Button is pressed.

OFF...Auto power On/Off selection

Auto power On/Off

- 5-1) Press the [FUNCTION/HOLD] button to select "YES" or "no". The sub display will show "OFF". After selecting the desired value (YES or no), press the [REC/ENTER] Button to save the setting. Press the [Setting] Button to skip the setting of this item.
- 6-1) When the sub display shows "CodE", please just press the [POWER/ESC] button to finish the Advanced Setting Procedure.

<Temperature Measurement>

- 3-2) During Temperature Measurement, press the [Setting] Button for at least five seconds to enter the Advanced Setting Procedure.
- 4-2) Setting items are switched each time the [Setting] Button is pressed.

K/J...Thermocouple type selection

OFF...Auto power On/Off selection

Thermocouple type selection

- 5-2) Press the [FUNCTION/HOLD] button to select "K" or "J". After selecting the desired value (K or J), press the [REC/ENTER] Button to save the setting. Press the [Setting] Button to skip the setting of this item.

Auto power On/Off

- 6-2) Press the [FUNCTION/HOLD] button to select "YES" or "no". The sub display will show "OFF". After selecting the desired value (YES or no), press the [REC/ENTER] Button to save the setting. Press the [Setting] Button to skip the setting of this item.
- 7-2) When the sub display shows "CodE", please just press the [POWER/ESC] button to finish the Advanced Setting Procedure.

e. Auto Power Off

The device automatically switch off if "Yes" is selected in Advanced Setting Procedure and none of the buttons are pressed for approximately 10 minutes .
The Auto Power Off function is disabled automatically while Data Record function is executed.

4. General Specifications

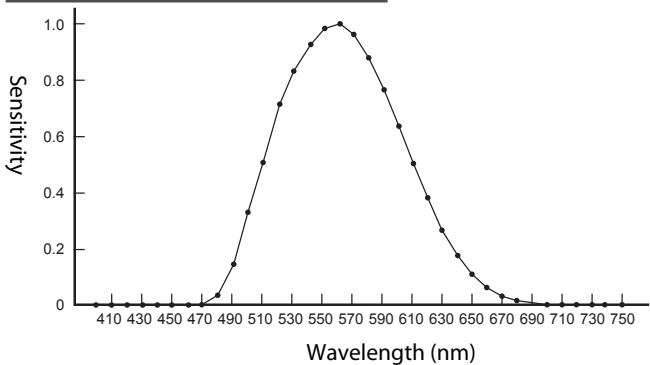
Main Unit	
Model	EL-2000
Sensor Type	Light : Silicon Photo Diode Temp. : Thermocouple Probe Type K,J
Measuring Unit	Light : LUX Temp. : °C
Sampling Time	Approx. 1 second.
Functions	Data Hold, Max/Min, Auto Power Off
Display	LCD:44mm x 29mm Digit Size:14mm
Error	Over Indication or Not connected Thermocouple Probe "-----"
Power Supply	006P (DC9V) battery x 1 pc.
Battery Life	Light : Approx. 48Hours. Temp. Approx. 80Hours.
Current Consumption	Light : Approx. 10.0mA Temp. Approx. 6.0mA
Operating Temp./humidity	0 - 50°C, 80%RH max
Dimensions	Main Unit:135(H)x60(W)x33(D)mm Light Sensor:82mmx55mmx7mm Cable Length:Approx. 1m
weight	WEIGHT:Approx. 278g (including batteries, Sensor)
Content	Instruction Manual, Light Sensor x 1pc. 006P battery x 1pc.
Compliance	CE, RoHS

Accuracy

	Measuring Range	Resolution	Accuracy
Light	0 - 20000LUX	1LUX	±(5%reading+8)LUX
Temperature (Type K)	-199.9 - -50.1°C -50.0 - +1300.0°C	0.1°C	±(0.4%+1°C) ±(0.4%+0.8°C)
Temperature (Type J)	-199.9 - -50.1°C -50.0 - +1100.0°C	0.1°C	±(0.4%+1°C) ±(0.4%+0.8°C)

* Temperature Conditions : 23±5°C environment testing

* Spectrum for Light Sensor



5. Cleaning

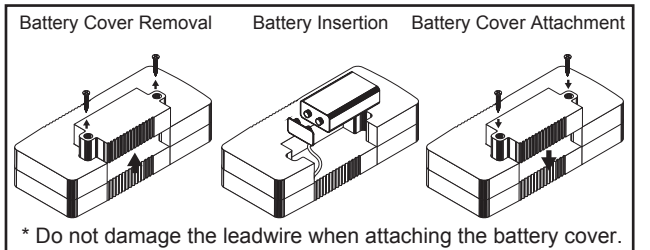
- 1) Wipe off dust, and other dirt on the unit using a dry cloth.

Caution

Please do not wipe the unit with benzene or thinner, this may cause the unit to easily break and produce white marks on the chassis.

6. Battery Replacement

- 1) When the Low Battery indicator appears on the display, it is necessary to replace the battery to maintain accurate readings.
 - 2) Remove the battery cover as shown below.
 - 3) Replace the battery with a new one and position the new battery correctly inside the device's battery compartment.
 - 4) Attach the battery cover.
- * The unit cannot measure accurately after low battery indicator is displayed. Please replace the battery immediately.



7. Storage

For proper storage, avoid places where the device can be exposed to direct sunlight, high humidity, high temperature, vibration and shock, dust, rust, corrosion, etc. Remove batteries if the device will not be used for a long period of time.

8. Accessories (Sold Separately)

- Thermocouple Probes
(Please refer to the catalog of Thermocouple Probes.)

The Light probe is not sold separately.
If the probe is damaged, please contact our sales representatives or distributors.