SPER
SCIENTIFIC LTD.

Instruction Manual

Pocket Light Meter 840010

5 YEAR METER WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of five (5) years from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, or damage resulting from accident, misuse, or abuse of the product. In order to obtain warranty service, simply ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
7720 East Redfield, Suite 7
Scottsdale, Arizona 85260
(480) 948-4448
Info@sperscientific.com
www.sperscientific.com

This is the **World's Smallest** Light Meter! This tiny meter is less than ¾" thick, weighing only 4 oz. (120g) and is easily carried in a shirt pocket.

The controls, display and sensor are all neatly contained and protected within the folding case with directions printed right inside the cover.

This meter features a 3999 full-scale count with a bar graph display, auto power off, hold functions and indicates low battery and over range.

Specifications

Light sensor element	Si photodiode with approximated relative luminous efficiency
Display	Digital display: 3999 full scale
	Bar graph display: 42-segment display
"Over" display	"4000" with "4" in the highest digit blinking
Battery warning display	Blinking "BT" appears in the display when the built-in battery is nearly exhausted and battery supply voltage drops
Sampling rate	Digital display: Approx. 2 times/sec
	Bar graph display: Approx. 20 times/sec
Measuring ranges	400 lx range: 0.1 lx to 399.9 lx
	4000 lx range: 1 lx to 3999 lx
	40 klx range: 0.01 klx to 39.99 klx
	400 klx range: 0.1 klx to 399.9 klx
Measuring accuracy	±(4% of reading + 1 digit) at 3000 lx or less, ±(10.5% of reading + 1 digit) at 3000 lx or more. (Equivalent to JIS General Class A for products for use other than certification and trading) Temperature: 73°F ±4°F (23°C ±2°C)
Temperature drift	±5% at 73°F (±5% at 23°C) within operating temperature range
Relative spectral sensitivity	Approximating the standard luminous efficiency
Functions	Data Hold function
	Auto power save function (30 min. after operation)
Power supply	SR-44 or LR-44
Power consumption	Approx. 10 mW
Operating temperature/humidity range	Temperature: 32°F – 104°F (0°C – 40°C), humidity 80%RH or less (without condensation)
Storage temperature/humidity range	Temperature: 14°F – 122°F (-10°C – 50°C), humidity 80%RH or less (without condensation)
Main body dimensions & weight	7" x 2" x 3/4" , approx 4 oz (117 x 76 x 18 mm, approx. 120 g)
Light sensor probe	3 1/4" x 5/8" x 3/8" (84 x 16 x 10 mm)
Sensor cord length	Approx 36" (0.9 m) when extended
Provided accessories	Instruction manual x 1

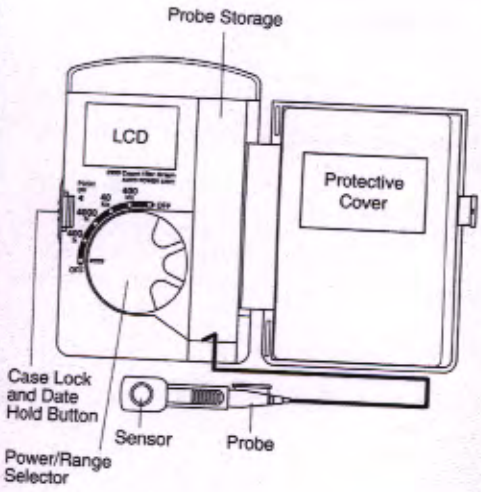
Design and specifications are subject to change for reasons of improvement, etc.

Reference

Illuminance / Type	1500	700	300	150	70	30	15 lx
Housing		* Sewing (dark materials)	* Study, * reading (long hours or small letters), sewing	* Reading, *Makeup, * Dining	Living room, children rooms, drawing room, dining room, kitchen	Entrance, staircases, corridors, emergency staircases, garage	
Schools		* Precision drafting, * sewing machine, * precision experiments	Drafting room, * blackboard surface, * library reading room, * sewing, * precision handicraft	General classrooms, special classrooms, library reading room, gymnasium	Auditorium, meeting rooms, corridors, staircases	Emergency staircases	
Offices		* Designing, * drafting, * typing, * calculation, * key punching	Office, drafting room, telephone exchange room, power distribution panel, instrument meter panel	Director rooms, conference rooms, reception rooms, entrance, elevators	Workshops, locker rooms, staircases, warehouses	Emergency staircases	
Roads and parks					Expressway tunnels (The illuminance of the tunnel entrances should be higher than this level.)	70 - 15: Tunnels 15 - 3: High-traffic roads	1.5 - 0.3: Low-traffic roads, roads, parks and open spaces in residential areas
Hospitals	Operating table: 10,000 or more	* Biopsy, * emergency treatment, * medicine preparation	Operating room, emergency treatment room, visual examination, medicine preparation, * technical lab, * injection	Consultation rooms, examination rooms, dispensary, waiting rooms, medical offices	Pre-consultation rooms, general hospital rooms, X-ray rooms, medicine warehouse		
Theaters				* Ticket counter, entrances, staircases	Projection booth, corridors, staircases	Audience rooms (during intermission), emergency staircases, garden	3 - 1.5 Audience rooms (during shows)
Hotels			Accounting office	Reception desk, restaurants	Guestrooms, entertainment room, corridors, lobby		
Restaurants			* Sample cases	* Cash register, cooking room, * tables	Guestrooms, waiting rooms and passages		
Beauty parlors and barbers			* Hairdressing, * hair setting, * makeup	* Haircutting, * dressing	General lighting		
Shops		* Highlighting in show windows, * Spotlighting in showcases	* Highlighting in store shelves, * Show windows, general showcases	General exhibitions, general lighting			
Department stores		* Show windows, ground floor decorations, * Important showcases	General exhibition, general showcases	Exhibitions with ambience			

* : The specified illuminance can be obtained by combining local illuminations. In this case, it is still desirable that the general illumination illuminance is more than 1/10 of the illuminance achieved using the local illumination.

Panel Description

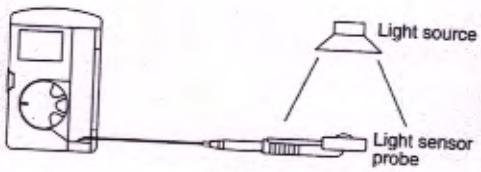


Measurement Procedures

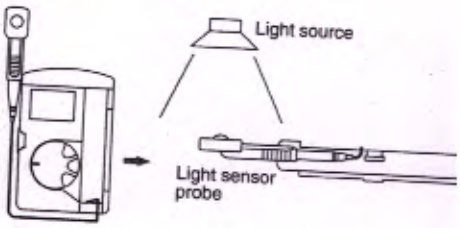
1. Open the cover by pressing and holding the Case Lock button.

2. Turn the selector to the appropriate measurement range. If the measurement is over range, "4000" displays and the "4" blinks.

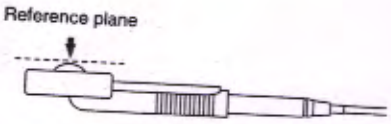
3. Aim the probe's sensor toward the light source to be measured.



4. Optionally, the probe can be snapped int a fixed position during the measurement, as shown below.



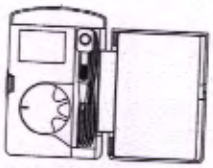
Note: The reference plane is located at the top of the sensor.



5. Activate or exit the Data Hold function by pressing the Case Lock button. "DH" appears in the display when this function is engaged.

6. Turn the selector to OFF when the measurement is complete.

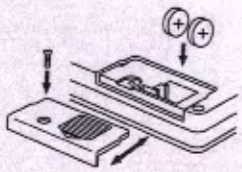
7. Store the probe so the sensor faces up. Take care not pinch the probe's wire in the unit's cover.



Automatic Shut Off: The instrument has an automatic shut off function in order to prolong battery life. After approximately 30 minutes without activity, the meter will automatically shut off. When this occurs, turn the range selector to OFF for about 2 seconds before selecting a measurement range.

Battery Replacement: Replace the batteries when "BT" appears in the display. Remove the battery compartment cover using a screwdriver. Insert the fresh batteries (match the polarity) and replace the cover.

Remove the batteries when the instrument will not be used for a prolonged period of time.



Calibration: The light sensitivity of the sensor decreases with use. Under average conditions, annual calibration is recommended. For complete details and current fees contact Sper Scientific.

Considerations

- Clean the sensor with a soft dry cloth.
- Turn the selector to OFF after use.
- To protect the sensor, store the unit with the cover closed.
- Do not expose the unit to excess direct sunlight, shock, vibration, humidity, or extreme temperatures
- Fluctuations in the reading may be due to shadows or changes in the line voltage. Do not move the probe's cord during measurement. Ambient temperature and drafts also affect the luminous flux output.
- Avoid Range Overload.
- Opening the case, except for replacing the batteries, will void the warranty.