INTRODUCTION
This HHLM3 is a portable easy use 3½ digit, compact-sized digital lightmeter designed for simple one hand operation. It provides measurements in lux and fc units.
The HHLM3 features PEAK-HOLD (50ms pulse light) and DATA-HOLD function. There is a pocket hook and magnetic holder on the back of the unit.

SAFETY INFORMATION
It is recommended that you read the safety and operation instructions before using the lightmeter.

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.

SPECIFICATIONS
GENERAL
Display: 3½ digit liquid crystal display (LCD) with maximum reading of 1999.
Overrange: (OL) is displayed.
Low battery indication: The "3" is displayed when the battery voltage drops below the operating level.
Measurement rate: 2.5 times per second, normal.
Operating Environment: 0°C to 50°C at < 75% R.H.
Storage Temperature: -20°C to 60°C, 0 to 80% R.H. with battery removed from meter.
Accuracy: Stated accuracy at 23°C ± 5°C, <75% R.H.
Auto power off: 15 seconds.

Battery:
3 pcs 1.5V (AAA size) included.
Battery life: 90 hours (continuous) typical.
Dimensions: 125mm(H) x 48mm(W) x 26mm(D).
Weight: Approx. 2.9 oz. (81.2g) including battery.

ELECTRICAL
Photometric Formulas:
1.0764 foot-candles/lux (lumens/meter²)
0.0929 lux/foot-candles (lumens/foot²)
Range:
20 lux, 200 lux, 2000 lux, 20000lux
2 fc, 200fc, 2000fc, 200000fc
Resolution: 0.01lux, 0.01fc
Spectral response:
CIE photopic
The CIE photopic curve is an international standard for the color response of the average human eye
Acceptance angle:
15° (30°/deg + 10g/360)
Total accuracy for CIE standard illuminant A (2856K):
±3V/deg + 1/360

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 color temperature of 2856K.
Temperature Coefficient:
0.1x specified accuracy/°F
(<18°C or >28°C)

OPERATING INSTRUCTIONS
Push buttons
MEAS (MEASURE) Button
Press "MEAS" button to turn on the meter for measuring illumination. Press "MEAS" button again to turn off the meter.
Range Select Button
Press "RING" button to select the desired lux range. Each time you press "RING" button, the range (and the input range annunciator) increments, and a new value is displayed.

DATA HOLD Mode
Press the "HLD" key to enter the Data Hold mode. "H" annunciator is displayed. When DATA HOLD mode is selected, the lightmeter holds the present readings and stops all further measurements.
Press the "HLD" key again cancels DATA HOLD mode, causing lightmeter to resume taking measurements.

PEAK HOLD Mode
Press "PK" button to toggle in and out of PEAK HOLD mode. In the PEAK HOLD mode, the "PH" annunciator is displayed.

OPERATION
1. Set the power switch to the desired range (range switch button) select 20lux(fc), 200lux(fc), 2000lux(fc), 20000lux(fc) range.
2. Remove the cover of sensor head.
3. Hold the sensor head steady and make certain that the light source completely fills the cosine correction dome.
4. Move away from the sensor head to avoid shadowing it.
5. Read the illumination value from the display.
6. To display the inverse-square law, press "RING" button to the highest range and reduce the range until a satisfactory reading is obtained.
7. Cover the sensor head to extend the sensor life.

APO (Auto power off) Function
Remove rubber cover on front case and slide the switch to right to enable "APO" function, the "APO" annunciator is displayed. It will turn off automatically after approximately 15 minutes to lengthen battery life. Slide the switch to left to disable "APO" function.

SPECIAL CONSIDERATIONS
- Keep the plastic domed cosine corrector clean and free of scratches. It may be cleaned with a soft cloth and isopropyl alcohol.
- When light is received from many directions simultaneously, take special care to avoid reflections or shadowing the sensor with your body.
- For best accuracy, repeat the measurement several times to ensure that the light source has remained stable.
- The inverse-square Law
- The law states that the illumination I at a point on a surface varies directly with the intensity I of a point source, and inversely as the square of the distance d between the source and the point. If the surface at the point is normal to the direction of the incident light, the law is expressed by I = Io/d².
- Cosine Law
- The law that the illumination on any surface varies as the cosine of the angle of incidence. The angle of incidence θ is the angle between the normal to the surface and the direction of the incident light. The inverse-square law and cosine law can be combined as E = Io cos θ/d².

PROCEDURE OF CALIBRATION
Notes:
The following calibration procedure should be performed only by a qualified technician who has access to the items as following.

Equipment:
- A gas-filled tungsten-filament lamp operating at a correlated color temperature of 2850K.
- A digital multimeter with a temperature probe.
- A standard light source (e.g., a sunlamp).
- A precision resistors.

Zero Calibration:
Set the function range to the 200lux, then cover sensor head adjust VR21 until display reading 0.002lux.

Basic Calibration:
Set the function range to the 2000lux, then apply 1800lux adjust VR10 until the reading 1800.1±0.1lux.

Final Calibration:
Set the function range to the 200fc, then apply 180fc adjust VR22 until display reading 180.0±0.2lux.