roline

DIGITAL LUX METER

RO 1332

INSTRUCTION MANUAL

INSTRUCTION :

The Digital illuminance meter is a precision instrument used to measure illuminance in the field.

It is fully cosine corrected for the angular incidence of light.

The illuminance meter is compact, tough and easy to handle owing to its construction.

The light sensitive component used in the meter is a very stable ,long-life silicon diode.

FEATURES :

- Light-measuring levers ranging from 0.1 LUX to 200,000LUX , repeatedly.
- High Accuracy and rapid response.
- Data-Hold function for holding measuring values.
- Unit and Sign display for easy reading.
- Automatic zeroing.
- Meter corrected for Luminous Efficiency function.
- Correction factor need not be manually calculated for non-standard light sources.
- Short rise and fall times.

SPECIFICATIONS :

- Display : 3-1/2 digit LCD.
- Measuring Range : 200, 2,000, 20,000 and 200,000 LUX (20,000 LUX range — reading × 10 , 200,000LUX range — reading ×100)
- Overrange Display : Highest digit of " 1 " is displayed.
- Accuracy : ±3% rdg ± 0.5% f.s. (± 4% rdg ±10 dgts as >10,000 LUX range) .

(Calibrated to standard incandescent lamp at color temperature 2856 K).

- Repeatability : ±2% .
- Temperature Characteristics : ±0.1% /℃.
- Measuring Rate : Approximately 2.0 time /sec.
- Photo Detector : One silicon photo diode with filter.
- Operating Temperature and Humidity :
  0℃ to 40℃ (32°F to 104°F)
  0 to 80% RH.
- Storage Temperature and Humidity :
  -10℃ to 60℃ (14°F to 140°F)
  0 to 70% RH.
- Power Source : One 9 Volt battery, NEDA 1604 or JIS 006P or IEC 6F22.
- Battery Life (typical) : 200 hours (Alkaline Battery).
- Photo Detector Lead Length : 150 cm (approx.).
- Photo Detector Dimensions : 100L×60W×27H (mm),
  3.94"(L)×2.36"(W)×1.06"(H).
- Dimensions : 135L×72W×33H (mm),
  5.31"(L)×2.83"(W)×1.3"(H).
- Weight : 250g (8.8oz) .
- Accessories : Carry case, Instruction manual , battery.

NAME OF PARTS AND POSITIONS :

1. LCD Display : 3-1/2 Digits with a maximum reading of 1999, and the indicating sign of "LUX" , Data-Hold "H" ,Range "20,000", "x10" (reading × 10), "200,000", "x100 "(reading × 100), Low Battery "BT", etc..

2. **Range Indicator** : It indicates 200 LUX , 2000 LUX ,20,000 LUX , and 200,000 LUX ranges, respectively.
3. **Power Switch** : The power switch key turns the illuminance meter ON or OFF.
4. **Data-Hold Switch** : Pressing the HOLD key selects HOLD mode. When HOLD mode is selected, the illuminance meter stops all further measure-ments. Pressing the HOLD key again cancels HOLD mode, causing the illuminance meter to resume taking measurements.
5. **Range Switch** : Pressing the range key changes 200 LUX, 2,000 LUX , 20,000 LUX and 200,000 LUX ranges, circularly.
6. **Photo Detector.**
7. **Analog D.C. output** : DC+ on pin and intermediate connector, Ground on sleeve. (Fig. 2)
8. **Tilt Stand. (Back)**

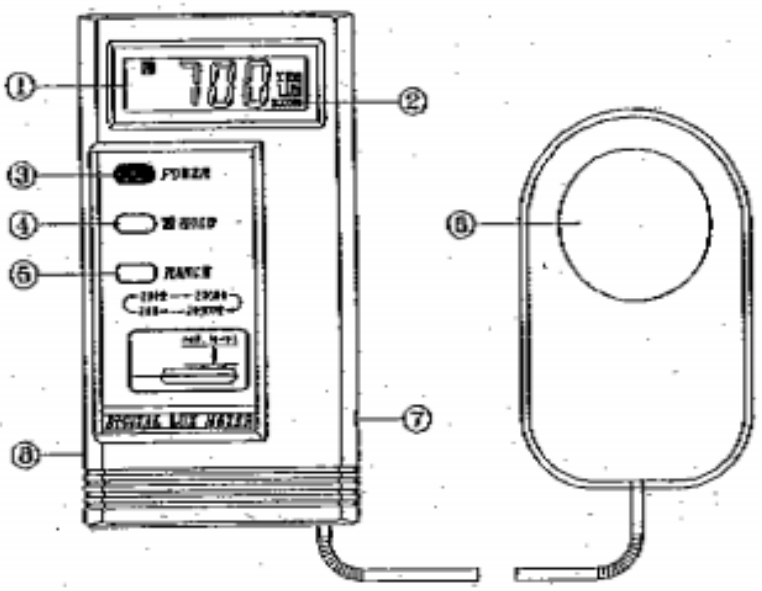


Fig. 1

OPERATING INSTRUCTIONS :

1. **Power-up** : Press the power key to turn the meter ON or OFF.
2. **Selecting the LUX scale** : Set the range selection switch to desired LUX range.
3. **Remove the photo** detector cap and face it to light source in a horizontal position.
4. **Read the illuminance** value from the LCD display.
5. **Overange** : If the instrument only display a one "1" in the M.S.D., the input signal is too strong, and a higher range should be selected.
6. **Data-Hold mode** : Press the HOLD key to select HOLD mode. When HOLD mode is selected, the illuminance meter stops all further measurements. Press the HOLD key again to cancel HOLD mode. Then it resumes normal operation.
7. **When the measurement** is completed , replace the photo detector cap and turn the power OFF.

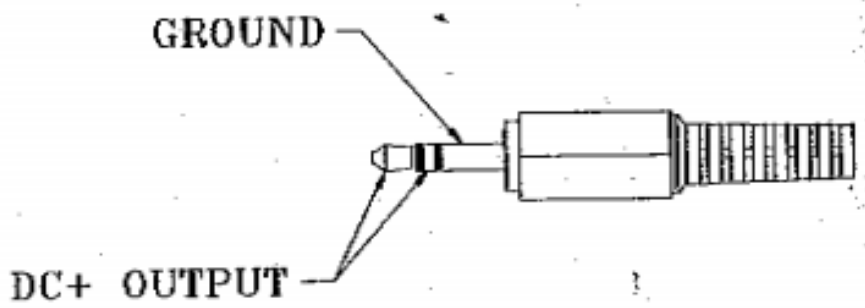


Fig. 2

BATTERY CHECK-UP & REPLACEMENT :

1. As the battery power is not sufficient, LCD will display "BT" ; and, replacement of one new battery type 9V is required.

2. After turning off the meter, press the battery cover and push in the direction of the arrow to open.

3. Disconnect the battery from the instrument and replace it with a standard 9-volt transistor battery and go for the cover.

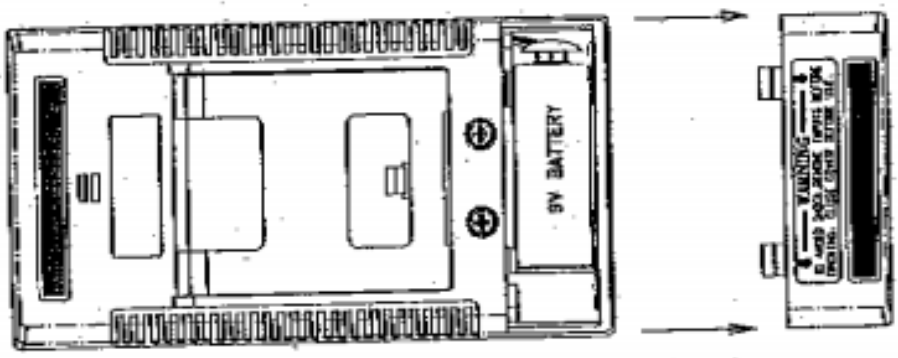
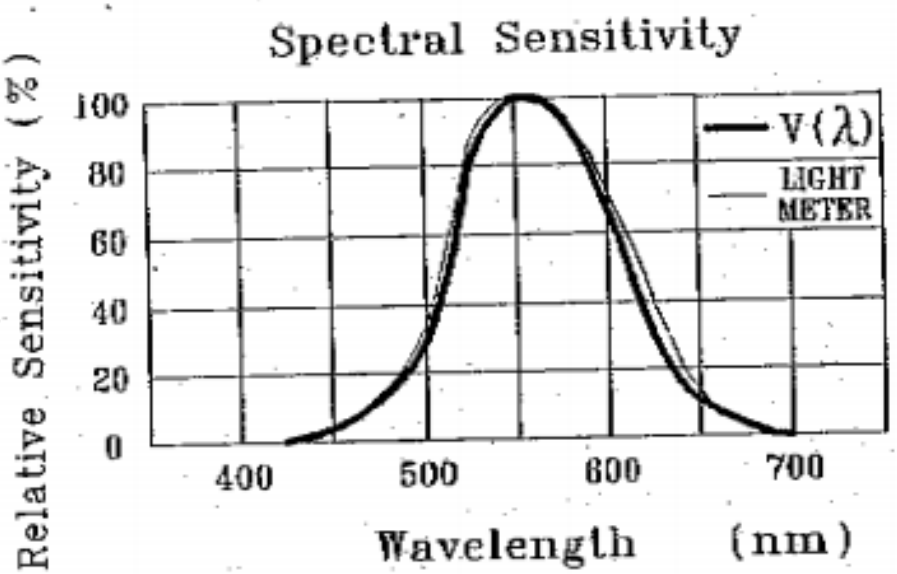


Fig. 3

SPECTRAL SENSITIVITY CHARACTERISTIC :

- To the detector, the applied photo diode with filters makes the spectral sensitivity characteristic almost meet C.I.E. (INTERNATIONAL COMMISSION ON ILLUMINATION) photopic curve V(λ) as the following chart described.



MAINTENANCE :

1. The white plastic disc on the top of the detector should be cleaned with a damp cloth when necessary.
2. Do not store the instrument where temperature or humidity is excessively high.
3. The reference level, as marker on the face plate, is the tip of the photo detector globe.
4. The calibration interval for the photo detector will vary according to operational conditions, but generally the sensitivity decreases in direct proportion to the product of luminous intensity by the operational time In order to maintain the basic accuracy of the instrument periodic calibration is recommended.

RECOMMENDED ILLUMINATION :

LOCATIONS	Lux		
• **OFFICE**			
Conference, Reception room.	200	~	750
Clerical work	700	~	1,500
Typing drafting	1000	~	2,000
• **FACTORY**			
Packing work, Entrance passage	150	~	300
Visual work at production line	300	~	750
Inspection work	750	~	1,500
Electronic parts assembly line	1500	~	3,000
• **HOTEL**			
Public room, Cloakroom	100	~	200
Reception, Cashier	200	~	1,000
• **STORE**			
Indoors Stairs Corridor	150	~	200
Show window, Packing table	750	~	1,500
Forefront of show window	1500	~	3,000
• **HOSPITAL**			
Sickroom, Warehouse	100	~	200
Medical Examination room	300	~	750
Emergency Treatment	750	~	1,500
• **SCHOOL**			
Auditorium, Indoor Gymnasium	100	~	300
Class room	200	~	750
Laboratory Library Drafting room	500	~	1,500