NIEUWKOOP

USER MANUAL

LX1010

LUX-METER

0-200.000LUX

TO MEASURE = TO KNOW

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Forwards

Thank you for purchasing the newest model of digital Illumination meter. In order to ensure high accuracy of this instrument for long term measuring.

Please study this user manual carefully before operation.

Features

- Wide test range (0-200.000lux / 0-20.000Fc).
- Automatic range step switchover, and automatic zero adjustment.
- One-touch "Data-Hold" function.
- The scale is conveniently calibrated in LUX and FOOT-CANDLE.
- Silicon photo sensor for precision measurement and long life.
- Multi-function of digital display can be shown various function and automatic alarm.
- Accurate touch membrane keyboard switch panel for dust proof, water proof and long life.
- Signal output for system expansion.

Specifications

Measuring range	: Lux: 0-200.000 lux		
	Foot-candle: 0-20.000 fc		
Resolution	: 0-200 Lux............... 0,1 lux	0-20fc 0,01fc	
		20-200fc 0,1fc	
	200 lux and higher .... 1 lux	200fc and higher 1fc	
Test range selection	: Automatic		
Accuracy	: ± 2% of reading ±1digit. (CNS 5119 A grade)		
Response time	: ± 0,3 seconds		
Lux/Fc conversion	: Automatic		
Zero adjustment	: Automatic		
Light sensor	: High precision Silicon Photo Cell		
Display	: 3½ digital LCD display with multi-function		
Output	: DC 0-2Vdc, 1mV/digital, impedance: 600Ω = 3.5ø phone output		
	Terminal for connection to recorder, controllers, CPU converter		
Operating range	: Temperature: -10/+50°C (14-122°F)		
Humidity	: lower as 85%RH		
Power supply	: 1 x 9 V or IEC 6F22 battery		
Battery life	: ± 180 hours in continuous use		
dimensions	: Meter: 15 x 7,8 x 27 cm		
Sensor	: 11,5 x 5,0 x 1,5 cm with coiled cable		
Weight	: 225 gram, inclusive sensor		

Note**:** Accuracy tested by a standard bulb of 2856°K color temperature.

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Explanation LX1010

1. Photo sensor connector
2. Signal Output connector
3. LCD display
4. Power ON switch
5. Power OFF switch
6. Hold switch
7. Lux or Fc switch
8. Photo sensor

Preparation for operating

- Remove the cover of battery chamber then insert battery as + – polarity
- Cleaning phot sensor (white color portion) with cotton buds or soft cloth
- Power ON the instrument will be performed "zero point" calibration automatically, then display show "000", please must be sure photo sensor and instrument are disconnected
- The photo sensor is inserted in the instrument, then display show Lux value.
- Press the keyboard and check functions

Precaution

When you complete above steps, if you found something wrong as display show below, please replace a battery or contact Nieuwkoop Aalsmeer or your own supplier.

- Display shows ▆▆ mark, replace battery
- It cannot perform "zero point" automatically adjustment or numerical show incompletion
- Display is blank
- No response from sensor
- Keyboard cannot be operated

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Measuring procedure

1. Connect the photo sensor to the instrument, then turn on `ON` key, the display will show numeral and unit "LUX"
2. Hold the sensor stationary during measuring and you can readout the value of Illumination.
3. Unit changeover by pressing the `LUX FC` key to choose the required measuring unit in LUX or F.C. (1 lux = 0.929 F.C.)
4. Auto range: The LX1010 is equipped with auto range function which is shown on the display.
5. "HOLD" function: if you want to keep the measurement date temporary, press `HOLD` key and press again to release this function.
6. When you finish measurement, press `OFF` key to turn off the power, meanwhile put the sensor into the carrying case carefully to avoid scrape of white shield.

Signal output

- You can connect other accessories for applications such as recorder, controller, converter...
  Signal output: DC 0-2V, 1mV/digit, impedance: 600 Ω
  Connector: Ø3.5 mono-phone plug.

- Extension cable: the length of low resistance signal cable should not exceed 100 meter for application.

Display

FC	: reading in Foot-candle (lm/ft2)
LUX	: reading in LUX (lm/m2)
x10	: reading multiplied by 10
x100	: reading multiplied by 100
HOLD	: data hold during measurement
🔋	: Low battery power warning

Safety precautions

- Keep the sensor clean and prevent scratch deformation of the sensor.
- Keep the instrument from high temperatures, high moisture and high static electricity fields.
- Be sure to turn "OFF" the instrument when not using and take out the battery if the instrument will be used for a long time.
- Please contact our service department before you do adjustment, dismantle or modification of the instrument.

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Recommended Illumination

Location	Lux:	Location:	Lux:
OFFICE		STORE	
- conference, reception	250-750	- indoor stairs corridor	100-200
- clerical work	700-1.200	- show window, packing	200-400
- Typing drafting	1.200-2.000	- fore front of show window	1.500-2.500
FACTORY		HOSPITAL	
- packing work, Entrance	150-300	- sick room, warehouse	100-150
- visual work at production	450-750	- medical exam. room	300-600
- inspection work	800-1.200	- operating room	750-1.500
- electronic assembly	1.500-2.500		
HOTEL		SCHOOL	
- public room, cloakroom	100-200	- auditorium, gymnasium	100-300
- reception, cashier	250-400	- class room	400-700
		- library	750-1.40

Unit conversion table for Illuminance

lux $1 \times (lm/m^2)$	photo ph (lm/cm^2)	foot-candle fc (lm/ft^2)	watt W/cm^2*
1	1.000×10^{-4}	9.290×10^{-2}	5.0×10^{-4}
1.000×10^4	1	9.290×10^2	5.0×10^{-2}
1.076×10^1	1.076×10^{-3}	1	5.4×10^{-5}
2.0×10^5	2.0×10^1	1.9×10^4	1

* Total irradiance (measured value) by the CIE standard light source "A"

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