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Instruction manual digital light meter

SAUTER SO 200K

Version 2.1
04/2023
GB



PROFESSIONAL MEASURING

SO-BA-e-2321

GB

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V. 2.1 04/2023

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1 General information

This digital illuminance meter is a precision instrument for measuring illuminance in the work area. The sensor has a full cosine correction for oblique light incidence. The instrument is compact, robust and easy to use due to its design. The light-sensitive component used in this light meter is a very stable, long-life silicon diode.

2 Functions

- The light measuring level ranges from 0.1Lux to 200,000 Lux, 0.01 FC (food candle) to 20,000 FC, in repetition
- High accuracy and fast response
- Peak-Hold function for recording peak values
- Unit and number display for easy reading
- Automatic zero setting
- Non-standard light sources are automatically corrected
- Short rise and fall times

3 Technical description

Display: 3 ½ digit LCD

Measuring range: 200; 2.000; 20.000; 200.000 Lux
(20.000 Lux reading value x 10,
200.000 Lux reading value x 100)
20; 200; 2.000; 20.000 FC
(20.000 FC reading x 10)
1 FC= 10.76 Lux

Exceeded display range: Display of the highest Digit "1" appears on the display

Accuracy: ± 3% rdg ± 0.5% f.s (± 5% rdg ± 10 dgt at > 20,000 Lux / 2,000 FC area).
Calibrated with a standard incandescent lamp at a colour temperature of 2856K
Repeatability: ± 2%.

Temperature Characteristic value: ± 1%/°C
Measuring rate: approximately 2.0 times/sec.
Photosensor: Silicon photo diode with filter
Working temperature: 0°C to 40°C (32°F to 104°F)
Humidity at work: 0 to 70 RH

Storage temperature: -10°C to 50°C (14°F to 122°F)
Storage humidity: 0 to 80% RH

Power source: 1 x 9V block battery, 6F22
Lifetime with an alkaline battery (as a rule) 200h

Dimensions: 148mm x 70mm x 40mm

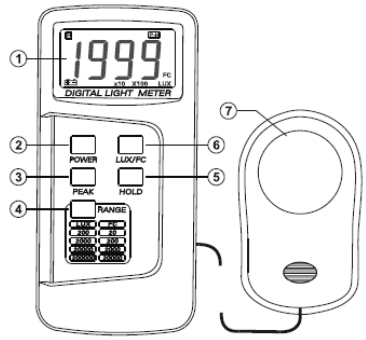
Photo sensor lead length: 1500mm (approx.)

Dimensions photo sensor: 100mm x 60mm x 28mm

Weight: approx. 250g (5.8 oz)

Accessories: carrying case, operating instructions, battery

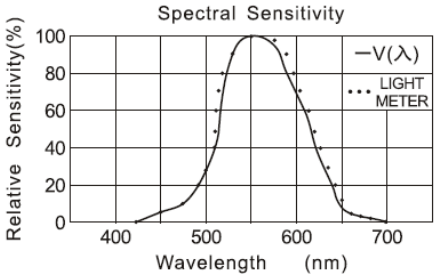
4 Function keys and part designation



1. LCD display: 3 ½ digits with maximum reading value until 1999.
2. on/off key: this key is used to switch the luxmeter on or off
3. Data-PEAK key: Press this key to cancel the peak recording mode.
4. Selection key: Press this key to change the selection of 200Lux/20FC; 2,000Lux/200FC; 20,000Lux/2,000FC; 200,000Lux/ 20,000FC (always repeating in a circle).
5. Data- hold key: this key is pressed to fix the current measured value. All further measurements are stopped by the luxmeter. If the HOLD key is pressed again, this is cancelled and the unit can take measurements again.
6. Lux/FC unit key: Press this key to select between the Lux or Foodcandle (FC) unit.
7. Photo sensor

5 Influencing variables of spectral sensitivity

As for the photo sensor: the photodiode with filters used almost reaches the C.I.E. (International Commission on Illumination) standard of spectral sensitivity test characteristics. The photo-optical curve V (⅄) is shown in the table below:



6 Steps to commissioning

1. On/off **button:** The on/off button is used to switch the light meter on/off.
2. **Selection of the Lux/FC scale:** Press this key to select the desired light metering unit.
3. The photo sensor cover must first be removed and the photo sensor is then held against the light source in a horizontal position.
4. The nominal illuminance value can now be read off the LCD display.
5. **Measuring range exceeded:** If the unit only shows a "1" on the display, the input signal was too strong and a higher range must be selected.
6. **Data HOLD mode:** The HOLD key is pressed to enter the HOLD mode. The luxmeter stops all further measurements. If this key is pressed again, this command is cancelled and the instrument returns to normal operation.
7. **Data PEAK mode:** Press the PEAK key to select the peak mode. Once this selection is made, all subsequent measurements are paused. If the PEAK key is pressed again, the PEAK-HOLD mode is cancelled and the instrument returns to normal operation.
8. After all measurements have been completed, replace the protective cap of the photo sensor and press the off button.

7 Check and replace batteries

1. As soon as an adequate power supply is not ensured, the symbol appears on the LCD display "🔋" and a battery change with a 9V block battery is necessary.
2. Switch off the unit to do this. The battery cover is pressed down and at the same time pushed down in the direction of the arrow to open the battery compartment.
3. The battery is removed from the housing and replaced by a new 9V block battery
4. Replace the battery cover.

8 Maintenance

1. The white protective cap on the photo sensor should be wiped with a damp cloth from time to time.
2. the light meter must not be stored at too high a temperature or humidity.
3. The period of time required for a calibration of the photo sensor varies with the working operations. In general, the light sensitivity decreases directly proportional to the product of the light intensity of the working time. To maintain the general accuracy of the instrument, periodic calibration is recommended.

9 Examples of recommended illuminance levels

Office	
Conference/reception room	200-750
Office work	700-1500
Masch. writing, technical drawing	1000-2000
School	
Lecture hall, gymnasium	100-300
Classroom	200-750
Laboratory, library, drawing room	500-1500
Hospital	
Hospital room, storage	100-200
Room for medical examinations	300-750
Operating room	750-1500
Emergency room	750-1500
Factory	
Packing work, goods receipt	150-300
Work on the assembly line	300-750
Visual inspection work	750-1500
Assembly of electronic parts	1500-3000
Hotel	
lounge, cloakroom	100-200
Reception, cashier	220-1000
Retail shop	
Entrance stairs range	150-200
Shop windows, packing tables	750-1500
Front part of the shop window	1500-3000

Note:

When the protective cap is on the photosensor, the unit always displays "000"; if this is not the case, please operate the adjustable resistor on the back of the housing.

Note:
To view the CE declaration, please click on the following link:
https://www.kern-sohn.com/shop/de/DOWNLOADS/