

MAVOLUX 5032C BASE

Illuminance Meter

15544
1/11.15



Perspective view of MAVOLUX 5032C BASE



Back of display unit:

- serial number of display unit
- calibration seal for DAkkS- or factory certificate (if available)
- battery door



Back of photometer head:

- serial number of display unit
- tripod socket $\frac{1}{4}$ "

Thank you for buying the precise **MAVOLUX 5032C BASE** from GOSSEN. Your new luxmeter guarantees the reliably measure for illuminance of daylight and artificial sources of light including LED. Even in the case of very bright sunlight or illumination from headlights, no accessories are required.

- **Maximum reliability** – Classified measurement of illuminance in lx or fc in accordance with class C per DIN 5032-7, appendix B of IEC 13032-1 and CIE 69.
- **Precise Measured Values** – Accuracy amounts to $\pm 3\% \pm 1$ digit of the display value.
- **Broad measuring range** – High initial sensitivity and a resolution of 0.1 lx or 0.01 fc, right on up to large illuminance values of 199,900 lx or 19,990 fc.
- **Calibration Capability** – As an option, the accredited GOSSEN Light Lab can issue a factory or a DAkkS calibration certificate for measuring equipment monitoring in accordance with DIN EN ISO 9001:2008.
- **V(λ) matching** – The spectral sensitivity of the silicon photodiode is color corrected and corresponds to the spectral brightness sensitivity of the human eye V(λ).
- **Cosine correction** – The luminosity of a flat measuring surface is proportional to the cosine of the incident angle of light. This relationship is taken into consideration by the receiver during evaluation.
- **Non-volatile memory** – 100 measured values can be saved and retrieved.
- **Convenient everyday use** – Simple operation, easy to read display, compact design.

lx = Lux

fc = footcandle

1 lx = 0.0929 fc

1 fc = 10,76 lx

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Preparation for use

Please ensure that you are familiar with the operation of your measuring device and do some test measurements to ensure the proper function of the device. If you are using it for quality inspections or for expertise please check if the instrument is calibrated and it is within the defined calibration interval. **GOSEN** assumes no liability for consequential damages.

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Safety Precautions

Please read these safety precautions carefully before using your measuring device. This will help you to avoid damaging the product and prevent personal injury.



This icon identifies important warnings which should be read in any case before the initial start-up of your **GOSEN** product.



In the event of malfunction, switch off the measuring device immediately.

If the event that smoke develops or unusual odors become apparent, which are caused by either the measuring device, remove the battery from the meter in order to prevent possible fire. Continuing to operate the measuring device after such malfunctions have occurred may result in severe injury. Please contact your local dealer or **GOSSEN** Service in order to eliminate malfunctioning. If you bring or send the meter in for repairs, make sure that the battery has been removed first.



Never use the measuring device in proximity to flammable gases.

Electronic devices must not be used near flammable gases. Otherwise there would be danger of explosion and fire.



Never hang the device and/or the carrying strap around the head or neck of a child.

Danger of strangulation exists if the carrying strap is hung around the head or neck of a child.



Store the measuring device at a location which cannot be accessed by children.

The measuring device and its accessories include parts which can be swallowed. Make sure that these parts (e.g. housing covers, battery etc.) do not fall into the hands of children who might swallow them. Otherwise, danger of suffocation prevails.



Do not dismantle the measuring device.

Never touch any parts located inside of the housing - injury may result. Never attempt to repair the meter yourself or try to open the device. Repairs may only be made by qualified personnel. If the device's housing is damaged due to dropping or other external influences, remove the rechargeable battery or power supply and contact your local dealer or **GOSSEN** Service for repair.



Avoid any and all contact with liquid crystals.

If the display is damaged (e.g. broken), danger of injury due to contact with glass shards or discharge of liquid crystals exists. Make sure that skin, eyes and mouth do not come into contact with the liquid crystals.



Handle batteries with care.

Rechargeable and normal batteries may leak or explode if handled incorrectly. Please adhere to the following safety precautions:

- Make sure that the measuring device is switched off before removing or inserting batteries. Only use the batteries which are recommended for this meter.
- Make sure that the battery is inserted correctly.
- Never short-circuit batteries, and never attempt to open a rechargeable or a normal battery.
- Do not expose the batteries to excessive heat or open flames.
- Do not expose the batteries to moisture; never immerse batteries in water.
- If the meter is not used regularly, remove the battery and close the battery compartment cover
- Never store batteries together with metallic objects which might cause short-circuiting.
- Danger of leakage exists, especially in the case of empty batteries. In order to prevent damage to the measuring device, batteries should be removed when fully depleted or in case of lengthy periods of non-use.
- When not in use, batteries should be stored in a cool place.
- Batteries heat up during use and may become hot. Be careful not to burn yourself when removing batteries. Switch the measuring device off or wait until it has shut itself down, and then wait a bit longer until the battery has cooled down.
- Do not use batteries which show any signs of damage such as discoloration or deformation of the housing.

Notes

- Reproduction of product documentation or duplication of any excerpts from the same requires the express consent of **GOSSEN** Foto- und Lichtmesstechnik GmbH. This also applies to duplication in any electronic format and translation into other languages.
- Documentation is subject to change without notice.
- **GOSSEN** assumes no liability for damages resulting from incorrect use of the product.
- Documentation for your **GOSSEN** measuring device was prepared with the greatest of care. If you should nevertheless discover errors, or if you would like to suggest any improvements, **GOSSEN** would be very pleased to hear from you. (The address of your local **GOSSEN** representative is listed separately.)

Icon for separate collection of recyclable materials / hazardous waste measuring device European countries



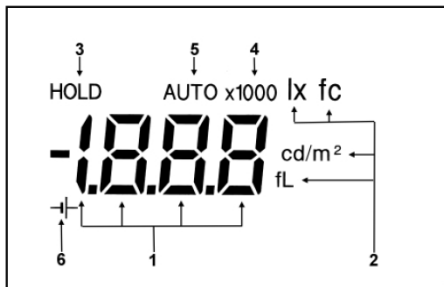
This icon indicates that this product must be disposed of separately.

The following must be observed by users in European countries:

- This product may only be disposed of separately at a designated collection point. It may not be disposed of with household trash. For further information contact your local dealer or waste disposal authorities.

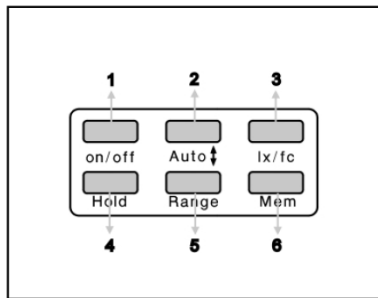
1 Display and Operation Elements

1.1 Display



- 1 Display of measuring value and Memory
- 2 Measuring Unit
- 3 Display „HOLD„ indication / Buffer Storage
- 4 Multiplying factor for measuring value
- 5 Auto ranging – automatic range selection
- 6 Low Battery

1.2 Key Pad



- 1 Switch On/Off
- 2 Range key – Memory/Measuring range ↑
- 3 lx/fc – Select measuring unit
- 4 HOLD – Function / Buffer Storage
- 5 Range key – Memory/Measuring range ↓
- 6 MEM – Memory key

2 Functioning of MAVOLUX

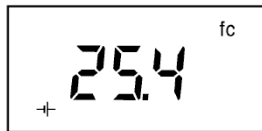
2.1 Preparation

First remove the snap-on cover of the battery compartment at the back of the meter. Insert the battery included in the delivery contents (1.5 V size AA, IEC LR6) in the battery compartment.

Care should be taken to place the battery correctly according to the polarity indications “+” and “-” in the battery compartment.

When the battery warning symbol (⎓) appears in the display, the battery must be replaced.

The values in the measuring data memory and also the preset individual values will be maintained, even when the battery is changed.



2.2 Automatic Switch-Off – Continuous Operation

If for approx. 4 minutes none of the keys of the MAVOLUX is pressed down, the instrument will be turned off automatically. When the instrument is switched off, the values stored in the measuring data memory and also the preset individual values will be maintained.

You can override the automatic switch-off, when you switch on the instrument and simultaneously keep the **HOLD** key pressed down. The measuring unit „lx / fc“ in the display will blink and indicate that the Continuous Operation Mode is on.

3 MAVOLUX Operation

3.1 Switch On – Make Measurement

Press down the **on/off** key and the MAVOLUX will start up in measuring mode and will immediately be measuring at 2 times per second. The instrument is in the function „AUTO“, i.e. the MAVOLUX will select the best suited measuring range for the existing light level. By pressing one of the range keys, one of the measuring ranges can be set. Scrolling up or down through additional measuring ranges is accomplished by briefly pressing one of the range keys. If both keys are pressed and held simultaneously, the instrument is returned to „AUTO RANGING“.

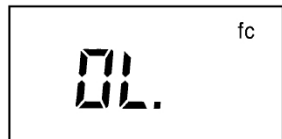
3.2 Selecting Measurement Unit lx or fc

Use the key **lx/fc** to select the required unit for the read-out – lux or footcandle.

3.3 Overload and Zero Point Indication

When exceeding one of the measuring ranges „OL“ (Overload) appears in the display.

The zero point indication may be achieved by putting the protective cap over the light collector of the photometer head.



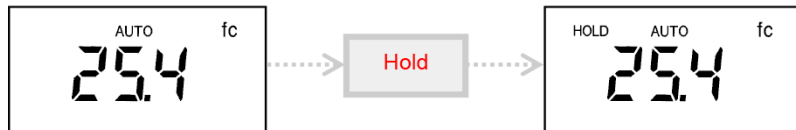
3.4 Memory Functions

In addition to the display buffer storage, the MAVOLUX has also been provided with a memory space for up to 100 measured values.

This function allows the user to make several measurements in the field and then to view them later. The data stored in the memory will be maintained, even if the meter is turned off or if the battery is changed.

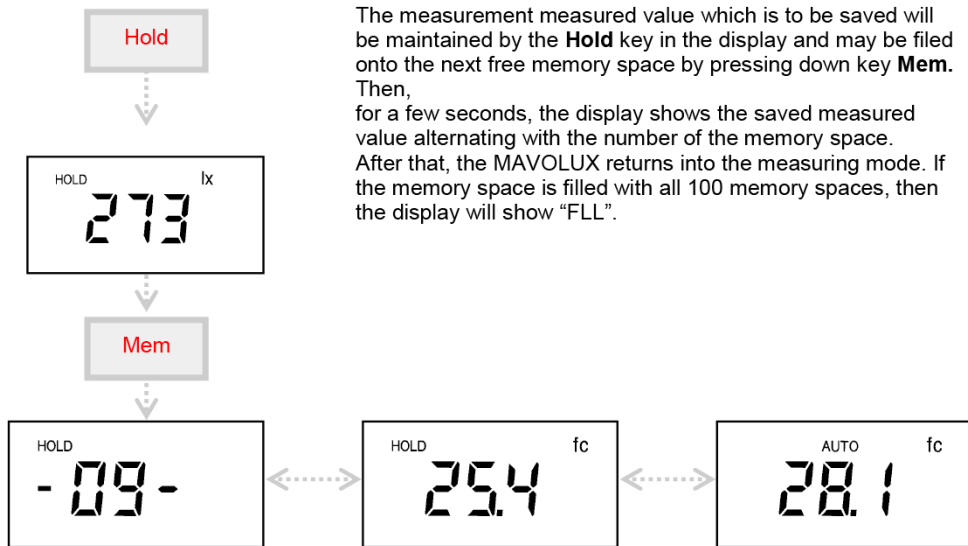
3.4.1 HOLD - Display Hold Function

The MAVOLUX has been equipped with a Display HOLD Function in order to enable you to make measurements in very low light conditions and to read them out later in brighter light conditions. The latest measurement will be buffer-stored in the display by striking the HOLD key. Then "HOLD" will appear in the display. Pressing down the HOLD key again will prompt the MAVOLUX to return to the measuring function.



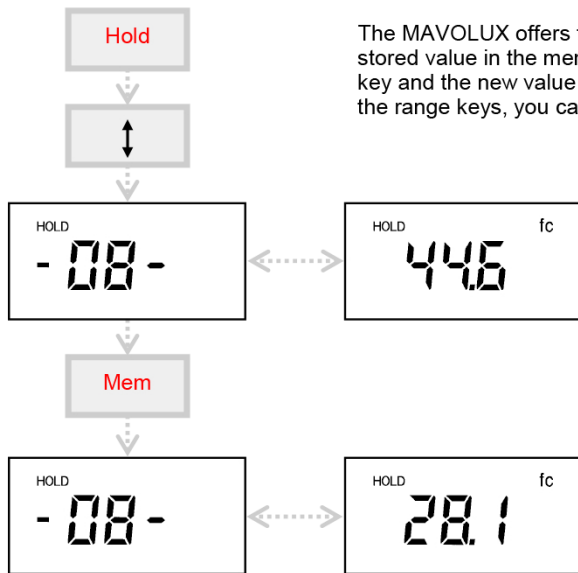
The function HOLD is the basic function for all the memory functions.

3.4.2 Mem – Save Measured Values



The measurement measured value which is to be saved will be maintained by the **Hold** key in the display and may be filed onto the next free memory space by pressing down key **Mem**. Then, for a few seconds, the display shows the saved measured value alternating with the number of the memory space. After that, the MAVOLUX returns into the measuring mode. If the memory space is filled with all 100 memory spaces, then the display will show “FLL”.

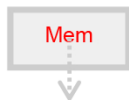
3.4.3 Mem-Edit – Overwrite a Saved Measured Value



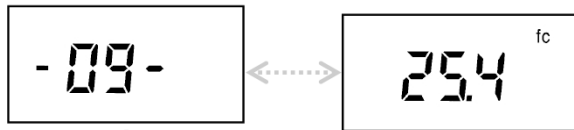
The MAVOLUX offers the function „Mem Edit“ for correcting a stored value in the memory. Measure again, press the **Hold** key and the new value is logged in. Then, by pressing one of the range keys, you can scroll through the memory.

At the memory space to be corrected press down the key **Mem**. Then the display shows the saved value for a few seconds alternating with the number of the memory space. Subsequently the MAVOLUX will return to measuring mode.

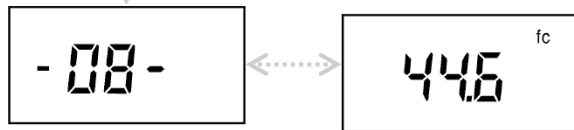
3.4.4 Mem Recall – Data Memory Recall



Start in the function „Measuring“ and press down the key **Mem**. The last memory space filled will be displayed first.



Strike one of the **Range** keys to scroll through the data memory. The current memory space is displayed as 01-02..., alternating with the measured value saved in the memory.

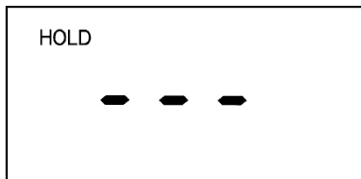


To return to the measuring mode just press down any one of the other keys or if for about ten seconds no further memory data is recalled by the **Range** keys, the MAVOLUX will return to the measuring mode.

3.4.5 Mem-Clear – Clear Memory

The MAVOLUX must be in function „HOLD“.

Pressing down the **Range** keys simultaneously, will clear the complete measuring data memory. The cancelling is confirmed in the display by three dashes.



4 Accessories

4.1 Standard Equipment

- Battery
- Protective cover cap
- Instruction manual

4.2 Optional Accessories

- **Plastics carrying case (M520G)**

For the transport of the measuring device a valuable plastic carrying case with a suitable foam insert is available.

4.3 Factory Calibration Certificate Optional (H997B)

The traceability of the measuring results is guaranteed by our calibration reference: Scientific Standard Lamps, type Wi 41G of the PTB (Physikalisch Technische Bundesanstalt Braunschweig – National Standard Institute of Germany). Depending on how the instrument is being used we recommend a recalibration interval between 12 and 24 month.

4.4 DAkkS Calibration Certificate Optional (H997D)

With our calibration laboratory accredited according to ISO/IEC/EN 17025 for illuminance (registration number D-K-15080-01-01) of DAkkS we can offer you the highest industrial level for the performance and traceability of calibrations for light metering.



WC101
D-K- 15080-01-01
2015-11

5 Service and Repairs

No special maintenance is required, if the device is handled correctly. Keep the outside surface clean. Use a slightly dampened cloth for cleaning. Do not use cleansers, abrasives or solvents.


Should the device not work to your satisfaction, please send it to:

GOSEN Foto- und Lichtmesstechnik GmbH | Lina-Ammon-Str.22 | D-90471 Nürnberg | Germany
Phone: +49 911 8602-181 | Fax: +49 911 8602-142 | E-Mail: info@gossen-photo.de

www.gossen-photo.de

or to the GOSEN distributor in your country. You can find the address of the local GOSEN distributor on our website under www.gossen-photo.de.

6 Specifications

Light Sensor	Silicon photo diode with $V(\lambda)$ filter
Classification	Class C according DIN 5032-7 / EN 13032-1 appendix B / CIE 69
Accuracy	$\pm 3\% \pm 1$ digit of reading
Measuring Rate	2 measurements per second
Digital Display	
LCD display	50 mm x 25 mm
Read-out, size	7 segments, 13 mm
Number of digits	3 ½ digits
Overload signal	„OL“ in the display
Memory	100 measured values, display indication „FLL“ = memory full
Power Supply	
Battery	1.5 V size AA alkaline manganese cell (IEC LR 6) or suitable rechargeable battery
Battery life	approx. 45 hour continuous operation with alkaline manganese battery
Battery test	Automatic display of „  “ symbol, when battery voltage drops below 1.0 Volt

Weights and Dimensions

Housing	Plastics
Dimensions	Display Unit: 65 x 120 x 19 mm 2.56 x 4.73 x 0.75"
	Photometer Head: 31 x 105 x 30 mm 1.22 x 4.13 x 1.18" tripod socket 1/4 " on bottom side
Light sensor	Light sensitive surface of the diffuser: approx. 20 mm Ø. Location of the reference plane is on the surface of the light collector.
Cable length	Approx. 1.5 m.
Weight	Display unit and photometer head approx. 200 g without battery

Environment

Operating temperature	0 °C to 50 °C 32 °F to 122 °F
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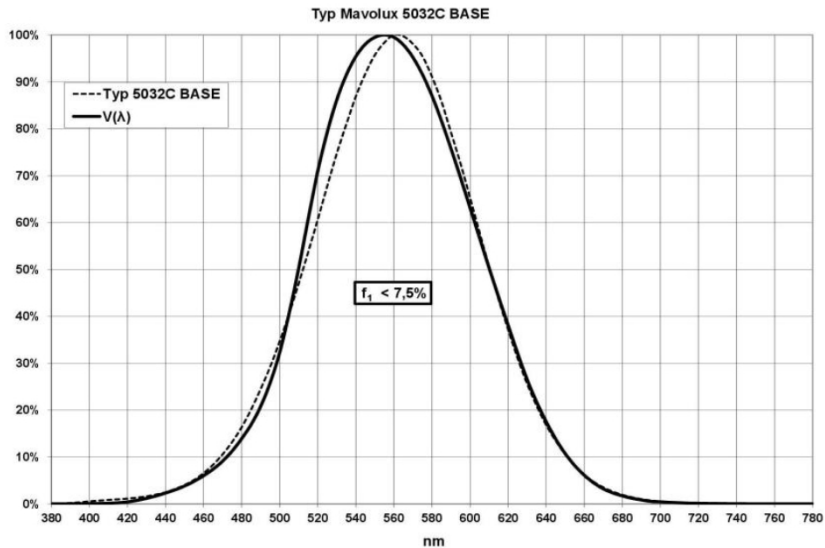
Characteristics MAVOLUX 5032C BASE

Measuring Quantity		Measuring Range in Lux (lx)		Measuring Range in footcandle (fc)		Resolution in lx	Resolution in fc
		Illuminance	I	0.1...	199.9	0.01...	19.99
	II	1...	1 999	0.1...	199.9	1	0.1
	III	10...	19 900	1...	1 999	10	1
	IV	100...	199 000	10...	19 990	100	10

Most Important Error Limits MAVOLUX 5032 C BASE

Characteristics	Admissible Error according to DIN 5032 Klasse C	Typical Error MAVOLUX 5032C BASE
V(λ)-Adaptation (f_1)	9%	$\leq 7,5\%$
True Cosine Evaluation (f_2)	6%	$\leq 2,0\%$
Linearity (f_3)	5%	$\leq 1,5\%$
Adjustment Error (f_{11})	2%	$\leq 1,0\%$
Overall Error (f_{ges})	20%	$\leq 15,0\%$

$V(\lambda)$ -Adaptation (f_1') MAVOLUX 5032C BASE





EG - KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

GOSSSEN

Dokument-Nr./ Document. No.:

Hersteller/ Manufacturer:

Anschrift / Address:

0403/2014

GOSSSEN Foto- und Lichtmesstechnik GmbH

Lina-Ammon-Str.22

D-90471 Nürnberg

Produktbezeichnung/ Product name:

Typ / Type:

Bestell-Nr. / Order No.:

Beleuchtungsstärkemessgerät / Illuminance meter

MAVOLUX 5032C BASE

M502B

Das bezeichnete Produkt stimmt mit den Vorschriften folgender Europäischer Richtlinien überein, nachgewiesen durch die vollständige Einhaltung folgender Normen:

The above mentioned product has been manufactured according to the regulations of the following European directives proven through complete compliance with the following standards:

Nr. / No.	Richtlinie	Directive
2006/95/EG 2006/95/EC	Elektr. Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen - Niederspannungsrichtlinie - Anbringung der CE-Kennzeichnung : 2011	Electrical equipment for use within certain voltage limits - Low Voltage Directive - Attachment of CE mark : 2011
EN/Norm/Standard: EN 60950-1 : 2006 + A11:2009 + A1:2010 + A12:2011 + AC:2011		
Nr. / No.	Richtlinie	Directive
2004/108/EG 2004/108/EC	Elektromagnetische Verträglichkeit - EMV - Richtlinie	Electromagnetic compatibility -EMC directive
EN/Norm/Standard: EN 61326-1 : 2006		

Nürnberg, 4. März 2014

Ort, Datum / Place, Date

Geschäftsführer / Managing Director

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der mitgelieferten Produktdokumentationen sind zu beachten.

This declaration certifies compliance with the above mentioned directives but does not include a property assurance. The safety notes given in the product documentations which are part of the supply must be observed.

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