



MAVOBASE UVA

OPERATING INSTRUCTIONS



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1. Safety Instructions



Read and follow these instructions carefully and completely in order to ensure safe and proper use.
The instructions must be made available to all persons who use the instrument.
Keep for future reference.

General

- The instrument may only be used by adequately trained and qualified personnel in the commercial trades. It is not a consumer product.
- Observe and comply with all safety regulations that apply to your work environment.

Handling

- Use the instrument in perfect condition only.
Inspect the instrument before use. Pay particular attention to damage, interrupted insulation, or kinked cables. Damaged components must be replaced immediately.
- If the instrument or its accessories do not function properly, permanently take the instrument/accessories out of operation and secure them against being restarted inadvertently.
- The instrument and the accessories may only be used for the tests/measurements described in the documentation for the instrument.

Operating Conditions

- Do not use the instrument and its accessories after long periods of storage under unfavorable conditions (e.g., humidity, dust, or extreme temperature).
- Do not expose the instrument to direct sunlight for long periods of time. Overheating may damage the instrument.
- Only use the instrument and accessories within the limits of the specified technical data and conditions (ambient conditions, IP protection code, measurement category, etc.).
- Do not use the instrument in potentially explosive atmospheres.
Danger of explosion!

(Rechargeable) Batteries

- Use (rechargeable) batteries that are in perfect condition. Risk of explosion and fire in the case of damaged (rechargeable) batteries!
Inspect the (rechargeable) batteries before use. Pay particular attention to leaky and damaged (rechargeable) batteries.

Adjustment/Calibration

- Comply with national calibration regulations and laws.

2. Application

Please read this important information!

2.1 Intended Use/ Use for Intended Purpose

The MAVOBASE UVA (M533G), referred to below as the instrument, is an illuminance meter that measures and displays the parameter illuminance (365 nm) in W/cm^2 or W/m^2 .

The safety of the user and the instrument is only guaranteed during proper use.

2.2 Intended Users

The instrument is intended for use by the following persons:

Persons who monitor and assess the quality of lighting and irradiation systems, lamps, luminaires, and lighting technology products.

2.3 Use for Other than Intended Purpose

Using the instrument for any purposes other than those described in the condensed operating instructions or these instrument operating instructions is contrary to use for intended purpose. Use for purposes other than those intended may result in unforeseeable damage!

2.4 Liability and Warranty

All warranty and liability claims brought against GOSSEN Foto- und Lichtmesstechnik GmbH are governed by the applicable contractual and statutory provisions.

3. Documentation

3.1 Information Concerning These Instructions

Familiarize yourself fully with the full content of this manual. It contains all the information necessary for the safe use of the instrument. Follow all these instructions to protect yourself and others from injury and to prevent damage to the instrument.

The latest version of these operating instructions is available on our website: <https://www.gossen-photo.de/en/>

Firmware Version

This documentation describes the instruments with Version 1.0.2. You can look up the firmware version of your instrument in the instructions ("Maintenance" section).

The documentation for other firmware versions is available upon request.

Errors and Suggestions for Improvement

This manual has been prepared with the utmost care to ensure accuracy and completeness of the information contained in it. Unfortunately, however, errors can never be avoided completely. Continuous improvement is part of our quality goal, so we always appreciate your comments and suggestions.

Gender Equality

For better readability, only the masculine form is used in this manual in a grammatically neutral sense. The feminine and diverse forms are of course always implied as well.

Intellectual Property Rights

The product names used in this document may be subject to trademark and patent law. They are the property of their respective owners.

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This document must not be reproduced, published, transcribed, stored, or translated, either electronically, mechanically, or in any other manner, without prior written consent from GOSSEN Foto- und Lichtmesstechnik GmbH.

This also applies to accompanying drawings and diagrams.

Due to a policy of continuous development of its products, GOSSEN Foto- und Lichtmesstechnik GmbH reserves the right to alter the specifications and descriptions included in this document without prior notification. Unless expressly agreed otherwise, no section of this document shall be deemed to be part of any contract.

3.2 Warnings and Hazard Notices

Throughout this document, notes and instructions for ensuring user and equipment safety, as well as for protecting the instrument, are highlighted in appropriate places.

The manner of presentation depends on the severity of the hazard and the potential risk. The accompanying description takes into account possible causes, consequences of non-compliance with the relevant instructions, and necessary measures to avoid a hazard.



DANGER

Death or serious injury is very likely.



WARNING

Death or serious injury is possible.



CAUTION

Minor or moderate injury is possible.

ATTENTION

Damage to the product or the environment.



Note

Important information.



Tip

Useful additional information or application notes.

3.3 Typographic Conventions

The following identifiers are used in this document:

Identifier	Meaning
Control element	Control buttons, buttons, menus, and other controls
✓ Prerequisite	A condition, etc., that must be fulfilled before a given action can be taken.
1. Action step	Action steps that must be completed in the specified order.
↳ Result	Result of action steps.
■ List □ List	Bullet lists
Footnote	Comment

3.4 Symbols Used

The following symbols are used in this documentation:

Sym- bol	Meaning
	Read and follow the product documentation.
	General warning symbol

4. Instrument Description

4.1 Scope of Delivery

Please check the scope of delivery for completeness and intactness.

1× MAVOBASE UVA meter

1× set of operating instructions

1× AA battery

1× final test certificate

4.2 Optional Accessories

- Plastic carrying case (M520G)

4.3 Instrument Overview



- 1 Display
- 2 Keypad
- 3 Measuring head with UV-A (365 nm) sensor
- 4 Tripod thread ($\frac{1}{4}$ " on bottom of measuring head
- 5 Back: Serial number, battery compartment with lid
- 6 USB port

4.4 Relevant Standards

DIN EN ISO 3059	Non-destructive testing – Penetrant testing and magnetic particle testing – Viewing conditions
ASTM E2297-15	Standard Guide for Use of UV-A and Visible Light Sources and Meters used in the Liquid Penetrant and Magnetic Particle Methods
DIN EN IEC 61326-1	Electrical equipment for measurement, control and laboratory use – EMC requirements – Part 1: General requirements

4.5 Symbols on the Instrument and on the Included Accessories

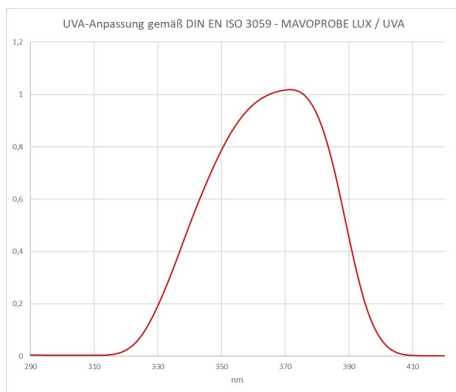
Symbol	Meaning
	The instrument must not be disposed of with household trash.
	European conformity marking

4.6 Scope of Functions

- Measurement of UV-A illuminance (365 nm)
- Fulfills the requirements of DIN EN ISO 3059 and ASTM E2297 for measuring instruments for fluorescent penetrant and magnetic particle testing
- Maximum reliability – Long-term stable measurement of UV-A illuminance
- Precise measured values – Accuracy of $\pm 10\%$ of reading ± 1 digit (UV-A 365 nm)
- Wide measuring range – Good initial sensitivity and resolution $0.1 \mu\text{W}/\text{cm}^2 \dots 99,990 \mu\text{W}/\text{cm}^2$
- Calibration capability – As an option, the GOSSEN Calibration Lab can issue a factory or DAkkS calibration certificate for measuring equipment monitoring in accordance with DIN EN ISO 9001.
- PEAK and FILT functions for demanding applications
- Option for switching between $\mu\text{W}/\text{cm}^2$ and W/m^2
- Backlit display for good readability
- Comfortable everyday use – Ease of use, compact design, robust housing

4.7 Technical Data

Classification	0.1 $\mu\text{W}/\text{cm}^2$... 99,990 $\mu\text{W}/\text{cm}^2$	
Sampling rate	2 measurements per second	
Sensor technology	Silicon photodiode with UV-A filter, diffuser diameter: approx. 10 mm	
Reference plane	Diffuser surface	
Product standard	DIN EN ISO 3059/ASTM E2297-15	
Temperature dependence	< 0.1%, temperature compensated	
Accuracy	$\pm 10\%$ of reading ± 1 digit	
Ambient conditions	Operating temperature:	+20 °C ... +70 °C
	Storage temperature:	-10 °C ... +50 °C
	Relative humidity:	45% ... 75%, no condensation allowed
	Elevation:	Max. 2000 m
Power supply	Continuous via USB or AA battery	
Mechanical design	Display unit:	Approx. 62 mm $\times$ 120 mm $\times$ 19 mm
	Measuring head:	Approx. 103 mm $\times$ 31 mm $\times$ 36 mm
	Weight:	Approx. 0.11 kg



5. Power Supply and Operating Modes

The instrument can be powered by a battery or via the USB port.

Battery Operation

Open the battery compartment of the instrument by pressing down the snap lock on the battery compartment lid in the direction indicated by the marked arrow and flipping the lid open. Insert the included battery (as a replacement a battery that meets the technical data) into the battery compartment, observing the polarity markings inside the battery compartment. Then guide the two tabs on the battery compartment cover into the recesses provided in the housing and press the cover until the snap lock engages. The instrument is now ready for operation. If you have removed a battery, dispose of this in accordance with applicable statutory provisions (page 21).

USB Port Operation

For a continuous power supply, you can connect the instrument via the USB port and a connected external power pack to the mains. Alternatively, you can also connect the instrument to a computer or a powerbank.

These options are not included in the scope of delivery and you must order them separately. Note the technical specifications of both devices.

Switching On and Selecting the Battery Operating Mode

When powered via the USB port, the instrument automatically switches on and is in continuous operation.

For battery operation, the instrument has 2 operating modes:

1. Default: Operation with automatic shutdown after 4 minutes without input from the user.
2. Continuous operation: Continuous operation without automatic shutdown.

To switch on the instrument in battery standard operation, briefly press  . To switch on the instrument with battery continuous operation, press and hold **HOLD** and briefly press  .

To switch off the instrument, press   again briefly.

Indication on the Instrument

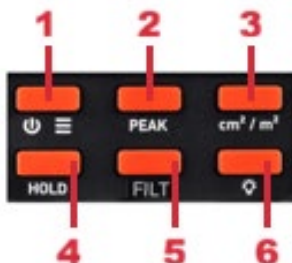
The instrument display shows the type of power supply and the operating mode. See page 16.

The battery level display  indicates how much capacity remains in the battery.

6. Display and Control Elements

6.1 Operation

The measuring instrument is operated via 6 buttons.



Button		Function
1	PEAK	Activates the PEAK function during a measurement. See page 17.
2	cm²/m²	Switches the measured value display to cm² or m²
3	💡	Activates or deactivates the backlighting on the display
4	FILT	Activates the FILT function (display filtering) during a measurement. See page 17.
5	HOLD	Activates the HOLD function (freeze measured value display) during a measurement. See page 17.
6	🔌 ≡	Switch on/off (short button press) Shows instrument information (long button press with instrument switched on)

6.2 Display

  	Power supply: via battery, continuous operation OFF via battery, continuous operation ON via USB port (always continuous operation)
MIN/MAX/AVG	PEAK function active: Shows the maximum (MAX) or minimum (MIN) measured value or the mean value (AVG) across the entire current measurement period.
HOLD	HOLD function active (measured value display frozen)
cm ² /m ²	Display of the measured value in cm ² or m ²
FILT	FILT function active (display filtering)

7. View Instrument Information

The information menu provides access to a range of instrument information. You can reach it by pressing and holding the   button with the instrument switched on.

The respective parameters and the associated value are displayed alternately:

 Serial Number	 26C12345
Hardware	V 04
Firmware	V 1.0.2
Temperature	30.0 °C
Batt.Voltage	1.50 V

8. Measurement of Illuminance

8.1 Measurement Setup and General Procedure

Prolonged measurements: power supply via USB port recommended.

1. Place the sensor at the point to be measured. A tripod affixed to the underside of the sensor can be used for this purpose. (The tripod is not part of the scope of supply and must be provided.)
Place the instrument at some distance from the sensor.
2. Switch the instrument on.
3. The measurement starts automatically. The result is shown in the display.
(To switch the measurement unit, press **cm² / m²**.)
4. Optional: use the **PEAK**, **FILT**, and **HOLD** functions. See the sections below.
5. Switch the instrument off to exit the measurement.

8.2 PEAK Function

The **PEAK** function acquires the largest value (**MAX**), the smallest value (**MIN**), and the arithmetic mean value (**AVG**) in the background during measurement.

Press **PEAK** briefly to scroll through **MAX**, **MIN**, and **AVG** in the display.

To switch off the **PEAK** function, press and hold **PEAK**. If no further operation takes place during the **PEAK** display, the **PEAK** function is automatically exited.

8.3 HOLD Function

The **HOLD** function freezes the measured value display. Press **HOLD** to access the function.

To release the measured value again, press **HOLD** again.

8.4 FILT Function

The **FILT** function averages measured value fluctuations and stabilizes the measured value display as a result. Press **FILT** to access the function.

To exit the **FILT** function, press **FILT** again.

9. Storage and Transport

ATTENTION

Improper storage

Damage to the product and measuring error due to environmental influences.

- Store the instrument in a protected location and only within the permissible ambient conditions. Details on permissible ambient conditions (temperature, air humidity, etc.) can be found on page 12.

ATTENTION

Improper transport

Damage to the product and measuring error.

- Transport the instrument only in accordance with the specified permissible ambient conditions (temperature, humidity, etc.). Details on permissible ambient conditions (temperature, air humidity, etc.) can be found on page 12.
 - Transport the instrument with sufficient protection. We recommend the optionally available plastic carrying case (see page 10).
-

10. Maintenance

10.1 Cleaning



Danger

Danger of death due to electric shock!

The instrument and corresponding accessories are powered by electricity. General electric shock hazard! Hazard of serious injuries or even death!

- The instrument, the accessories, and all connected conductors must be de-energized before and during cleaning. Switch the instrument off and disconnect it from the power supply.
- Never immerse the instrument/accessories in water or other liquids.
- Never touch the instrument/accessories with wet hands.

ATTENTION

Unsuitable cleaning agents

Unsuitable cleaning agents, such as aggressive or abrasive agents, will damage the instrument/accessories.

- Use a slightly damp cloth for cleaning.
-

Keep the outside surfaces of the instrument clean.

10.2 Calibration

Use of your instrument and the resulting stress affect the instrument and lead to deviations from the guaranteed accuracy during the service life.

In the case of strict measuring accuracy requirements, as well as in the event of severe stress (e.g., severe climatic or mechanical stress), we recommend a relatively short calibration interval of 6 months. Otherwise, a calibration interval of 12 months will normally be sufficient.

Please contact our service department for calibrations and the associated services.

11. Repair

Please contact our service department in the event of a repair, see page 20.



Note

Exclusion of warranty and guarantee claims

Unauthorized modification of the instrument is prohibited. This also includes opening the instrument. If it can be demonstrated that the instrument has been opened without authorization, the manufacturer shall not accept any guarantee claims (including user's personal safety, measuring accuracy, compliance with applicable safety regulations) and assumes no liability for any consequential damages.

- The instrument may be opened or repaired only by authorized, qualified personnel who are familiar with the associated dangers.
- Original replacement parts may only be installed by authorized, qualified personnel.
- The instrument must not be used again until the fault has been identified and repaired.

12. Service and Contact

GOSSEN Foto- und Lichtmesstechnik GmbH

Lina-Ammon-Str. 22

90471 Nürnberg

Germany

+49 911 800621 0

info@gossen-photo.de

13. Certifications

13.1 CE Marking

The instrument fulfills all requirements of applicable EU Directives and national regulations. We confirm this with the CE mark.

The CE declaration is available on our website.

13.2 Calibration Certificate

A calibration certificate can be issued for the instrument upon request.

We also recommend setting a schedule for recalibration.

Please contact us regarding calibration services.

14. Disposal and Environmental Protection

Proper disposal makes an important contribution to the protection of our environment and the conservation of natural resources.

ATTENTION

Environmental damage

Improper disposal results in environmental damage.

Follow the instructions regarding return and disposal included in this section.

14.1 Disposing of Waste Equipment and (Rechargeable) Batteries

Waste equipment and (rechargeable) batteries contain valuable raw materials that can be recycled, as well as hazardous substances that can harm human health and cause substantial damage to the environment. They must therefore be recycled and disposed of properly.



The symbol depicting a crossed-out garbage can on wheels refers to the legal obligation of the owner or end user not to dispose of waste equipment and batteries with unsorted municipal waste ("household trash"). The (rechargeable) batteries must be removed (wherever possible) from the waste equipment without destroying them, and the waste equipment along with the (rechargeable) batteries must be disposed of separately.

The type and chemical composition of the (rechargeable) battery are stated on the battery label. If the abbreviations “Pb” for lead, “Cd” for cadmium, or “Hg” for mercury are included, the (rechargeable) battery exceeds the limit for the respective metal.

You are obliged to comply with the respective local regulations and implement these properly on-site. Further information can be obtained, for example, from the responsible authorities or the local distributor.

Please also observe the owner's or end user's obligation with regard to deleting personal data and any other sensitive data from used equipment before disposal.

14.2 Disposing of Packaging Materials

Packaging and its components must be correctly disposed of separately from unsorted municipal waste (“household trash”).

You are obliged to comply with the respective local regulations and implement these properly on-site. Further information can be obtained, for example, from the responsible authorities or the local distributor.

We recommend retaining the original packaging materials in case you require servicing or calibration in the future.



WARNING

Danger of asphyxiation from foils and other packaging materials

Children and other vulnerable persons may suffocate if they wrap themselves in packaging materials, their components, or foils, or if they pull these over their heads or swallow them.

- Keep packaging materials, their components, and foils out of the reach of babies, children, and other vulnerable persons.
-

14.3 Provisions for the Federal Republic of Germany

The following comments refer specifically to the legal situation in the Federal Republic of Germany.

Waste equipment, electrical or electronic accessories, and used (rechargeable) batteries

Waste equipment, electrical or electronic accessories, and (rechargeable) batteries used in Germany can be returned free of charge to GOSSEN Foto- und Lichtmesstechnik GmbH or the service provider responsible for their disposal. The applicable regulations, in particular laws concerning packaging and hazardous goods must be adhered to in this respect. (Rechargeable) batteries must be returned in the discharged state or with appropriate precautions against short-circuiting. For further information on returns, see our website.

Packaging Materials

Packaging that is not subject to mandatory system participation must be handed back to the contracted service provider. For further information on returns, see our website.



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