
USER MANUAL

MagView



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IMPORTANT!

- Please read these instructions before using your MagView to ensure a proper handling.
- Please pay attention to the safety information at the end of this guidance.

DELIVERY CONTENTS

- MagView and transport-case
- Power supply unit (Input: 230 VAC, Output: 5.0 VDC), storage battery
- User manual

IMPORTANT HINTS FOR HANDLING

- The MagView includes fragile optical and magnetic elements and should therefore be handled with care. It should not be dropped and should be protected from vibrations and impacts.
- Do not touch the MagView the light source or the sensor-element.
- The magneto-optical sensor should not be contacted with hard or sharp objects (e. g. Screwdriver, etc.).
- Please notice that MagView is exclusively designed to use on flat surface. Pay attention that the MagView has a stable standing during the whole investigation.
- Use the specially designed case to transport your MagView.
- MagView should only be used and stored in environment with low humidity and within a temperature range of +10°C to +35°C.
- A necessary cleaning of the magneto-optical sensor should be done very carefully and with the help of dry and soft wipes (e. g. Opto-Wipes - Precision lens cleaning wipes). Do not touch the sensor directly with your fingers and by no means use thinner (diluent) for cleaning. **You may not use any kind of alcohol for cleaning the whole MagView.**
- Please handle magnets carefully, since the magnetic forces can be extremely strong and cause serious injuries of finger. The strong magnetic pulling and interaction forces may lead a risk of splintering, breaking or damaging the magnets surface and therefore cause sharp edges.
- Swallowing magnets may cause medical problems. Magnets are not suitable for children under 3 years. Magnets are often coated with nickel. Nickel allergies should be avoided prolonged skin contact.
- The magnetic forces may lead to damage of cardiac pacemakers, debit and credit cards, magnetic media, picture tubes and mechanical watches.
- When working with strong magnets use a tidy work space, which is free of steel tools.

PRINCIPLE OF MagView

- The MagView is a magneto-optical viewer, which is developed to visualize magnetic leakage fields.
- It realizes a quick and accurate visualization of magnetic information of flat magnetic mediums.
- MagView was especially designed for mobile purpose and is therefore very compact and handy.
- The main part is a supersensitive magneto-optical garnet-crystal.

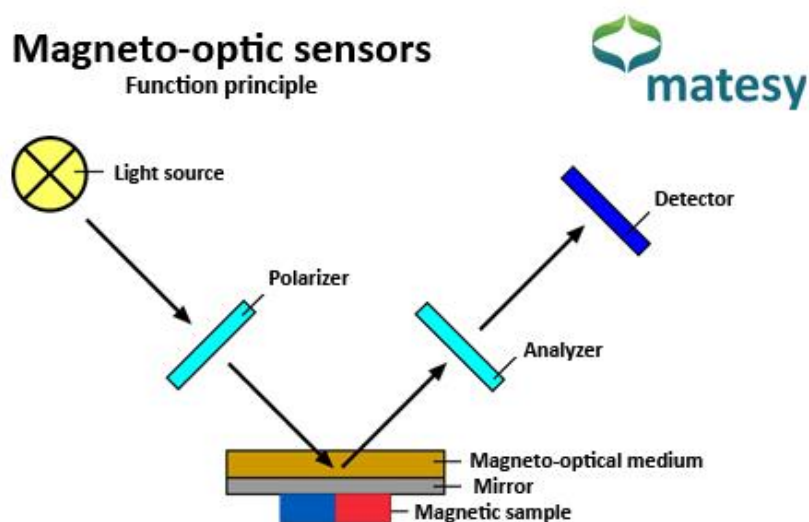
The principle of magneto-optical sensor is the Faraday-Effect. It describes the rotation of the polarization plane of linearly polarized light passing a magneto-optical medium. While the light is passing the medium, an external magnetic field which is parallel to the direction of propagation of the light wave will alter the polarization planes' rotation angle.

The rotation of the plane of polarization depends directly on the strength of the magnetic field. The angle of rotation β is described as:

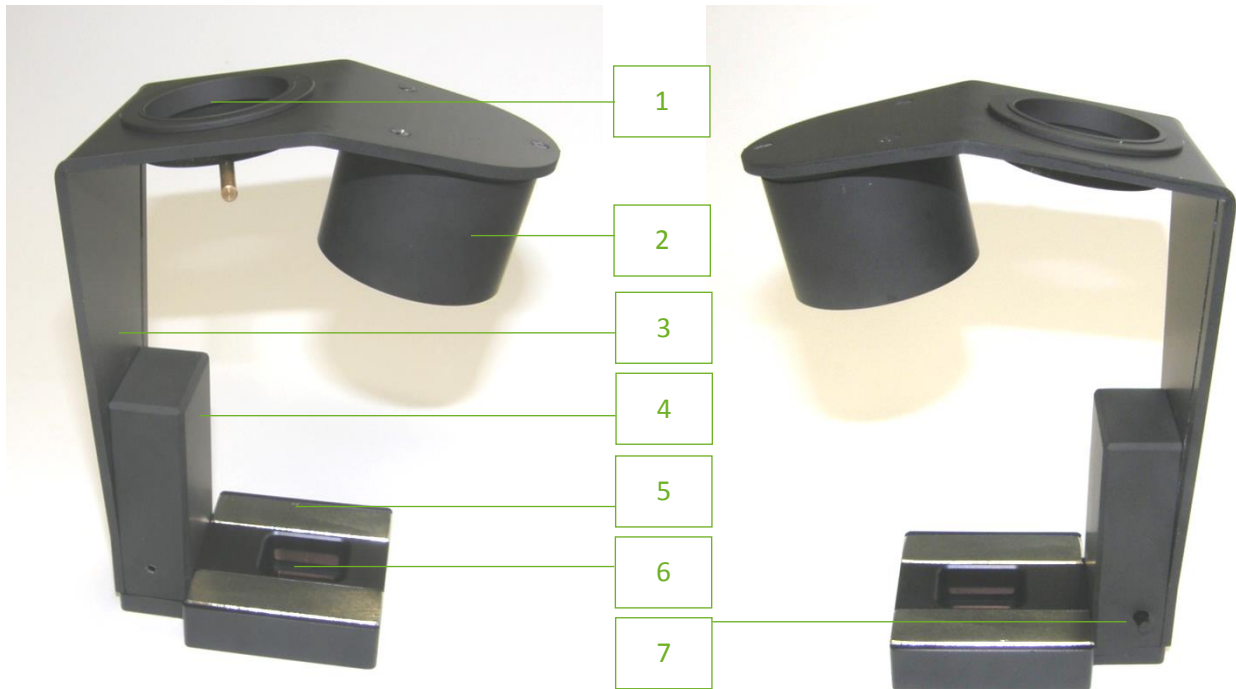
$$\beta = V \cdot B \cdot d$$

V - Verdet-constant
 B - magnetic flux density and
 d - travel distance that the light through the transparent medium

The following diagram clarifies the working principle of the MagView. The device is used in reflection-mode with two polarization filters (polarizer and analyzer). The analyzer-rotational position can be adjusted referring to the polarizer.



EQUIPMENT CONFIGURATION



- 1 Adjustable polarization filter (analyzer)
- 2 LED - light source, polarized
- 3 Device rear panel - the MagView should be only touched and held here while being used.
- 4 Socket housing for power supply, battery case
- 5 Magnets (Bias-Field) - optional
- 6 Magneto-optical sensor
- 7 Light-button

STARTING UP/ OPERATING PRINCIPLE

- Connect the MagView with the delivered power supply unit and insert the power plug into the power socket. Now the device is ready for charging (the red LED is ON).
- If the charging-process is finished (the red LED is OFF), the device is ready to use.
- Place the MagView safely on the magnetic object. Pay attention to that MagView has always a secure stand.
- To switch on the light, push the Light-Button.
- When the magneto-optical sensor element is place over the magnetic medium, the magnetic information can be watched through the observation window (analyzer).
- The contrast can be tuned by using the turning stick on the adjustable analyzer.

SAFETY INSTRUCTIONS

Read user guide very carefully before using the device.

Keep instructions for later reference.

MO sensor: A strong pressure of the specimen onto the magneto-optical sensor should be definitely avoided. The magneto-optical sensor must never be touched with sharp objects.

Wetness: Never exposure the device to wetness, open or use it at wet conditions. Otherwise there is risk of fire and electric shock.

Air ventilation: The device has to be placed at where the perfect air ventilation is ensured.

Heat: The device may not be placed close to sources of heat.

Power supply: Only proper current sources may be used. (Input: 230 VAC, Output: 5.0 VDC).

Power cord: Please pay attention to the cord and connectors, junctions and the emersion point of the cord out of the device.

Non-use: Please unplug the power cord when not using the device for longer time.

Damages and repairs:

The MagView has to be repaired only by Matesy, if:

- the power cord or the power connector has been damaged,
- objects or liquids have reached inside the device,
- the device does not work properly or works in a different way as desired.

Maintenance: Maintenance work may just be done by Matesy

WARRANTY

Based on legal regulations of the Federal Republic of Germany the Matesy GmbH assures for the shipped instrument a limited warranty of 24 months.

Excluded from warranty are signs of wear at the sensor element and the source of light.

The Matesy GmbH is not liable for damages which are caused by incorrect transport, incorrect handling, incorrect storage or mechanical violence.