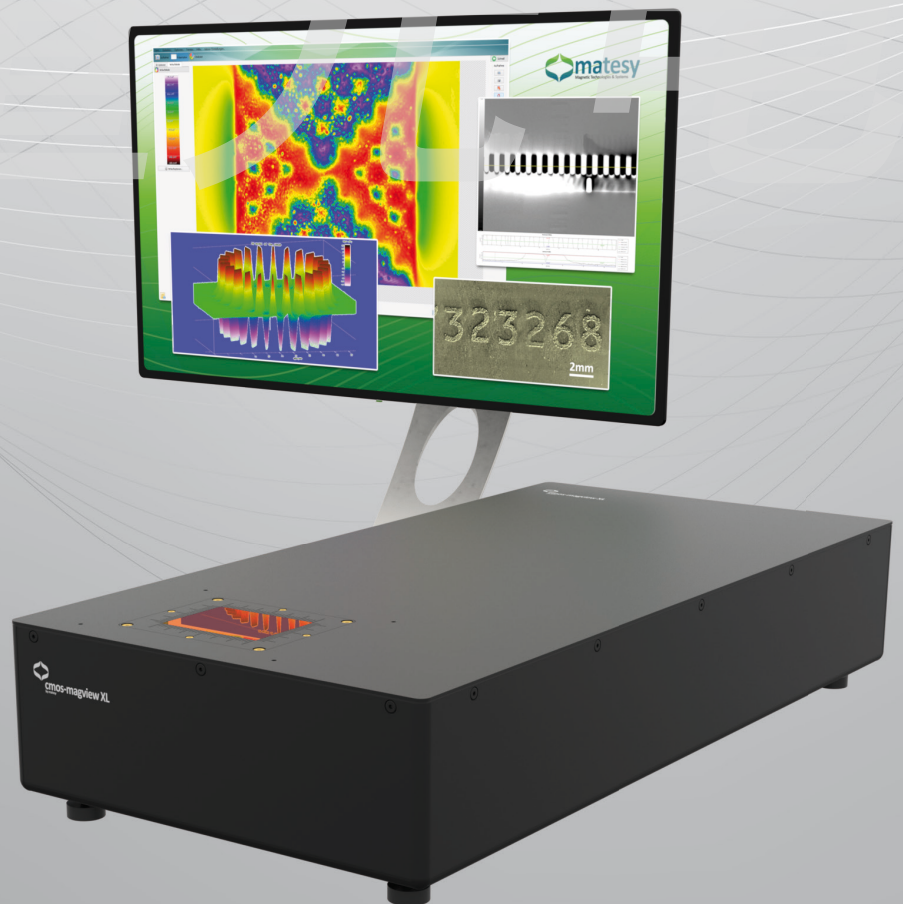


# cmos-magview

Magnetic field camera

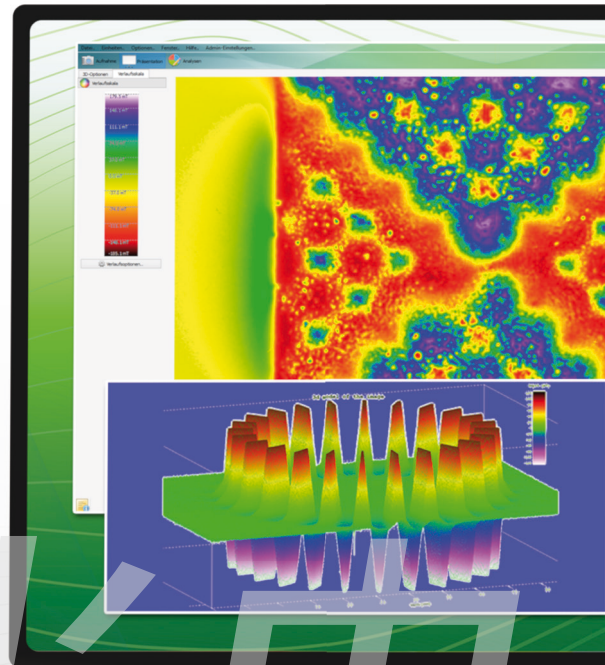


## Visualization of magnetic fields and structures

Technologies for high-precision visualization, optical analysis and control of magnetic fields, structures and components.

### Highlights

- Direct investigation of magnetic structures on the surface
- High geometric resolution
- Fast visualization of magnetic fields
- Measurement of the magnetic flux density
- Equipped with different types of sensors depending on the application



**cmos-magview S**

- Sensor size: 20x15mm<sup>2</sup>
- Resolution: 25μm



**cmos-magview M**

- Sensor size: 20x15mm<sup>2</sup>
- Resolution: 15μm



## Technical specifications

- Sensor size: up to 45x60mm
- Measurement duration: 1 second
- Geometric resolution: up to 15 $\mu$ m (depending on sensor and camera)
- cmos-magview software for image analysis
- Structural analysis of components in real time



**cmos-magview L**

- Sensor size: 60x45mm<sup>2</sup>
- Resolution: 70 $\mu$ m

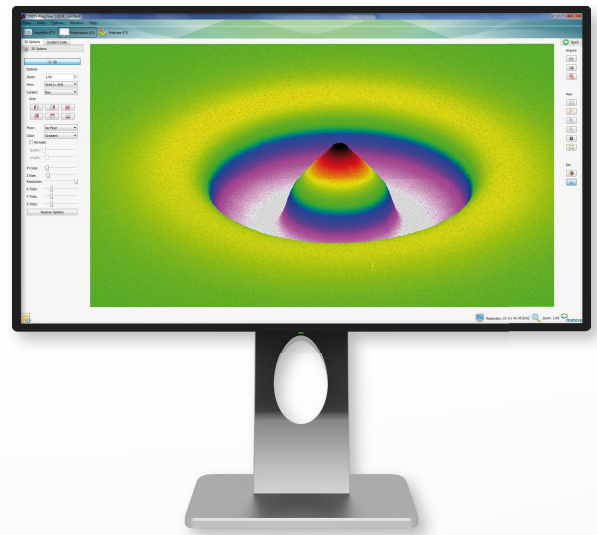


**cmos-magview XL**

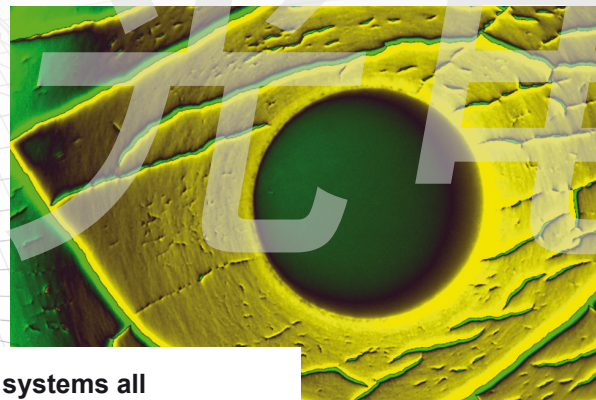
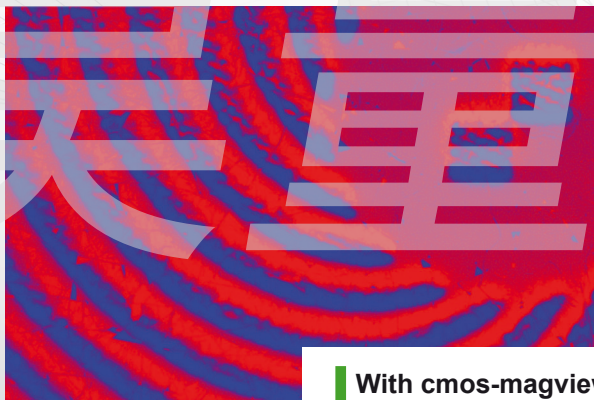
- Sensor size: 60x45mm<sup>2</sup>
- Resolution: 60 $\mu$ m (30 $\mu$ m possible)

## Functionality

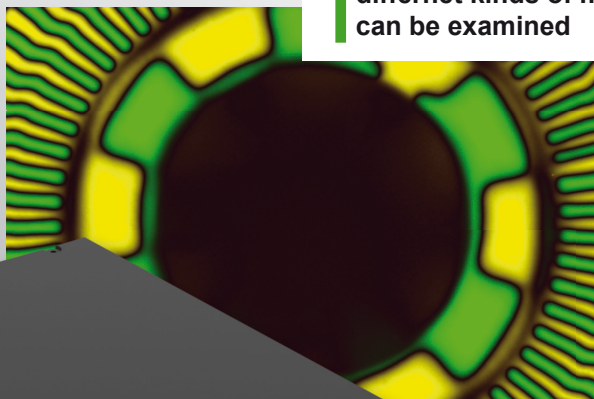
- Use of the Faraday effect in the magneto-optical sensor
- Recording of the magneto-optical image via high-resolution digital camera
- Use of image analysis algorithms for the evaluation of magnetic field information



Picture: 3D magnetic field visualization

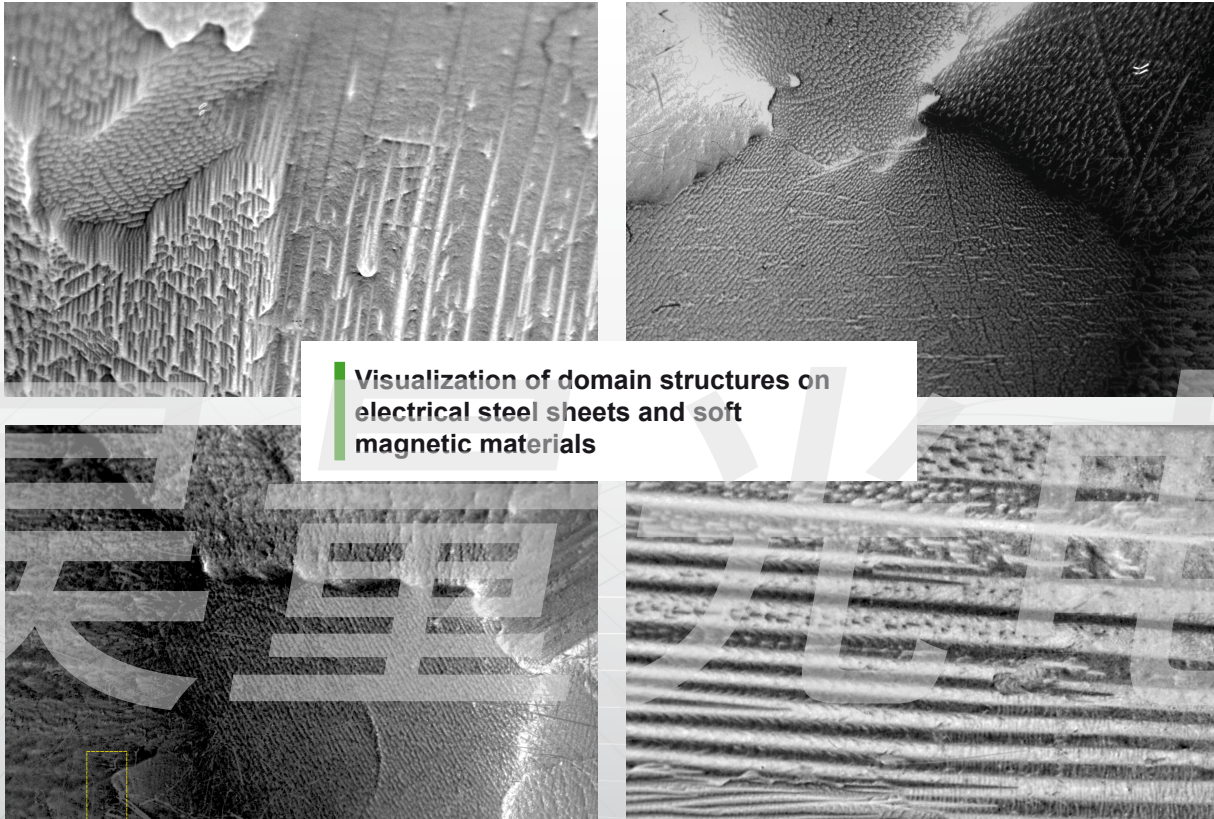


With cmos-magview systems all different kinds of magnetic surfaces can be examined



# Visualization of magnetic structures

The devices of the cmos-magview family are high-resolution and precise measuring and visualization systems for magnetic materials, components and surfaces, with which it is also possible to measure the magnetic flux density in addition to visualizing magnetic fields and magnetic structures. Depending on the field of application we offer the devices with different magneto-optical sensors and sensor sizes. The devices are available in the versions cmos-magview S, cmos-magview M, cmos-magview L and cmos-magview XL.



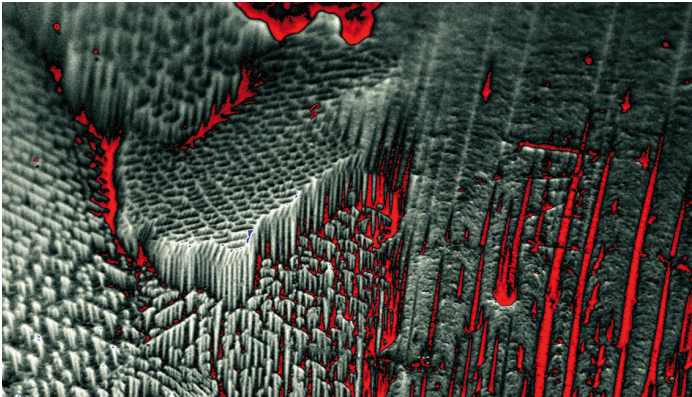
## Measure and analyze magnetic fields

Magnetic fields are used in a wide variety of applications. They help to transfer forces and torques, control sensors and carry information about the condition of magnetizable components. With the cmos-magview, the magnetic field can be made visible in two dimensions with the highest possible resolution and the magnetic flux density can be measured. Due to its high sensitivity and resolution, the process visualizes material inhomogeneities, domains, grain structures and cracks. The cmos-magview is used in quality and incoming goods control. It is part of the basic equipment of laboratories and supports the development, analysis and functional optimization of magnetic systems for early error detection. Comprehensive and adaptable software offers the user a solid basis for carrying out a wide range of analyzes and measurements. The cmos-magview provides analyzes for magnetized and non-magnetized permanent magnets, magnetic encoders, electrical steel, steel and stainless steel, structural changes due to heat input or deformation, the testing of magnetic security labels and numbers in chassis or on weapons. With the help of a yoke, samples can also be excited with a magnetic field, for example to better represent structures.

# cmos-magview - Magnetic field camera

## Sensor types and applications

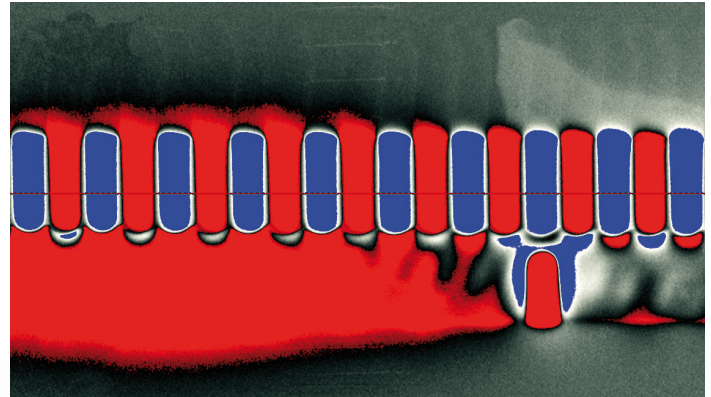
The cmos-magview devices can be equipped with different sensor types depending on the application.



### Sensor type A

#### Quality inspection & geometric assessment:

- of magnetic encoders
- of electrical steel sheets
- of security features for forensics
- of residual magnetism



### Sensor type B/C

#### Surface inspection and quantitative analysis:

- of permanent magnets
- of magnetic encoders with strong magnetization
- of polymer bonded magnets
- of magnetic particles in composites
- of superconductor investigations

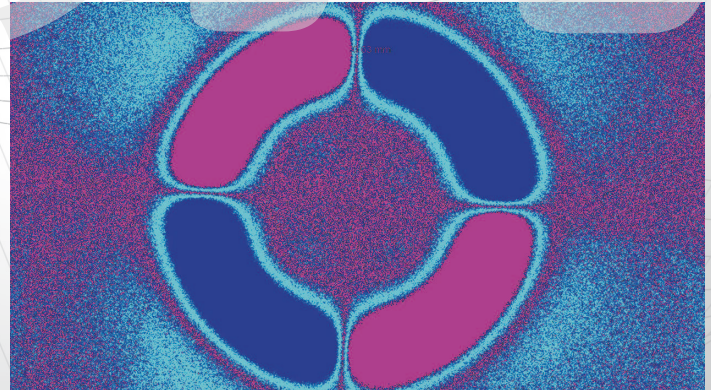


### Sensor type D

#### Investigation and visualization of:

- soft magnetics
- magnetic inks in banknotes
- magnetic inks in documents

(with excitation by external magnetic fields)



### Sensor type E

#### Measurement of:

- permanent magnets up to 1T
- multipole magnets with high fields

## cmos-magview variants



### cmos-magview S

- Sensor size: 20x15mm<sup>2</sup>
- Resolution: 25μm
- Sensor types: A, B, C, D (E on request)

#### Application:

Quality inspection and measurement of small permanent magnetic components and structures (e.g. linear encoders). Imaging of small areas on documents and electrical steel sheets with medium resolution



### cmos-magview M

- Sensor size: 20x15mm<sup>2</sup>
- Resolution: 15μm
- Sensor types: A, B, C, D (E on request)

#### Application:

Quality inspection and measurement of small permanent magnetic components and structures (e.g. linear encoders) with requirement of high spatial resolution. Imaging of small areas on documents and electrical steel sheets with high resolution



### cmos-magview L

- Sensor size: 60x45mm<sup>2</sup>
- Resolution: 70μm
- Sensor types: A, B, C, D

#### Application:

Large area inspection of small magnetic fields and of security features. Imaging of ring encoders and permanent magnets with structures larger than 100μm



### cmos-magview XL

- Sensor size: 60x45mm<sup>2</sup>
- Resolution: 60μm (30μm possible)
- Sensor types: A, B, C, D

#### Application:

Quality inspection and measurement of extensive permanent magnetic components and structures (e.g. ring encoders). Suited for requirements of high resolution and large areas