KRÜSS

MICROSCOPES

High quality optics, precise mechanics - 5 years warranty

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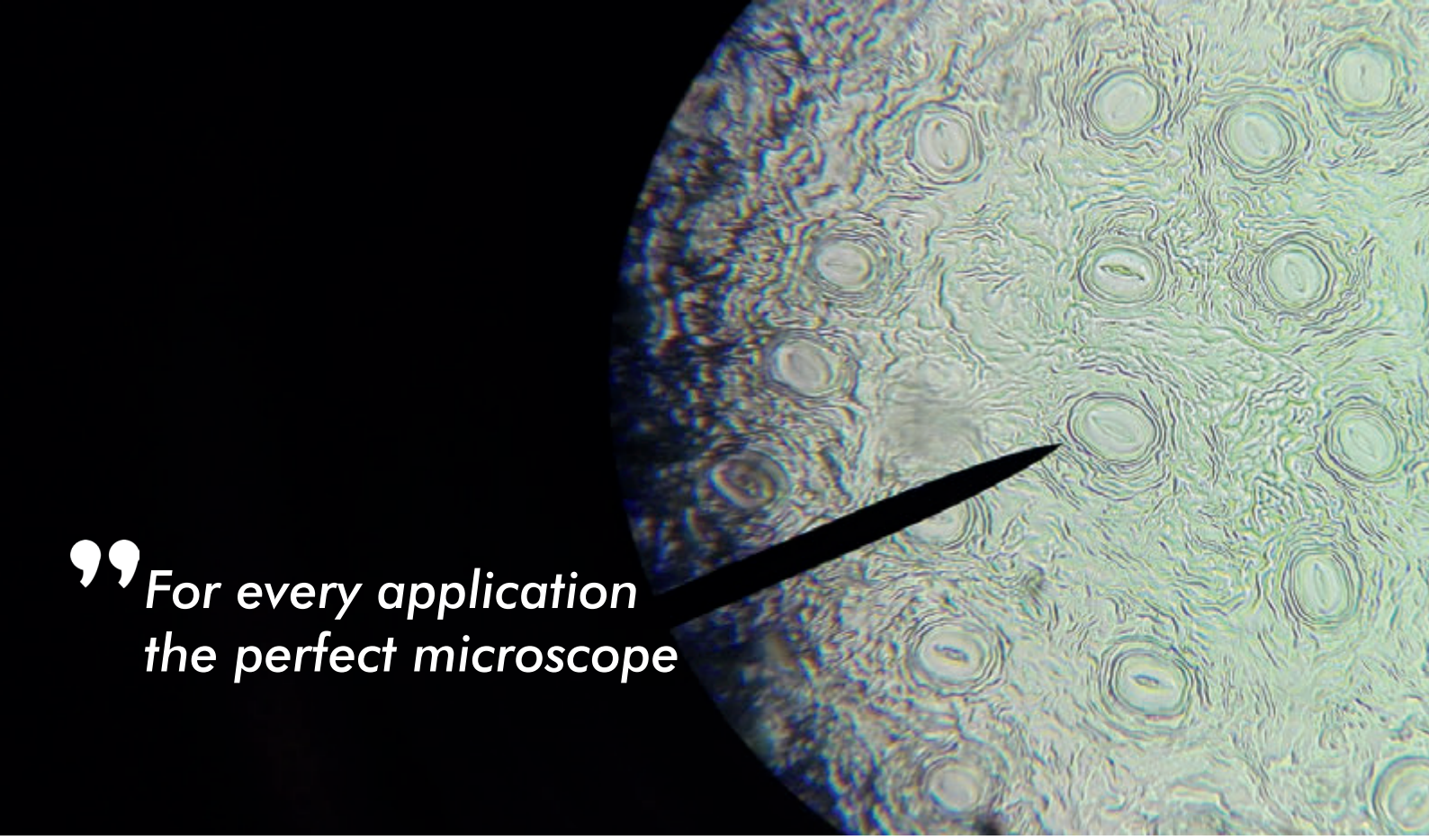

For every application the perfect microscope

OUR LAB MICROSCOPES

Optical microscopes are universally applicable measuring instruments for producing detailed and precise object and structural images of a wide spectrum of samples. The sample sizes are mostly below of the resolution of a human eye.

Laboratory microscopes are available in different versions. The monocular, binocular and trinocular microscopes are just a small small selection.

They can be used universally for teaching, research and training as well as in the fields of biology, histology, forensics or material testing.

Our laboratory microscopes are individually configurable. It is possible to connect a camera to a trinocular microscope. Other configurations, e.g. with special darkfield condensers, allow blood examinations according to Enderlein.

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DISCOVER THE WORLD OF KRÜSS MEASUREMENT DEVICES ON THE WEBSITE

Learn from our experts!

We offer comprehensive professional information on many analytical methods and every one of our devices: Learn more about sample preparation and measurement, proper cleaning procedures, relevant norms and guidelines, or let us show you our instruments functions and features during live video demonstrations.

☑ EXPLORE CAMPUS

Discover our devices online. We are only one click away!

We demonstrate our products at your site or via video conference direct from our facility in Hamburg. Experience our devices live and speak directly with our experts.

☑ Book an Appointment

1 Monocular microscope MML Series

This practical microscope is ideal for education or for newcomers. Commonly used for simple laboratory applications, excursions and examination of low-light specimens. Generally fitted with a minimum of adjusting screws, these microscopes are extremely user friendly, ensuring that very little can go wrong during use. The single tube is ideal for the eyesight of newcomers, who often find it difficult to look into the microscope with both eyes. Monocular microscopes are small, lightweight and can be flexibly positioned anywhere. In this way they are ideal for teaching purposes and training courses. They are also frequently used to make a preliminary selection of specimens that are later to be examined in more detail with high-quality laboratory microscopes.

Monocular microscope for lab and educational use

Basic features:

- 45° inclined viewing for ergonomic work
- 360° rotating optical head
- Sturdy metal tripod ensures high stability
- Coarse and fine adjustment facilitates precise working
- Integrated illumination
- Power supply 230 V, 50 Hz

1.1 Basic technical data microscopes MML Series (all Models)

Specification	Model: MML1200	Model: MML1300	Model: MML1400
MICROSCOPE HEAD	▪ 45° angled view, 360° rotatable		
EYEPIECES	▪ 10X widefield plano eyepieces		
OBJECTIVES	Achromatic objectives ▪ 4X NA 0.10 ▪ 10X NA 0.25 ▪ 40X NA 0.65	Achromatic objectives ▪ 4X NA 0.10 ▪ 10X NA 0.25 ▪ 40X NA 0.65	Achromatic objectives ▪ 4X NA 0.10 ▪ 10X NA 0.25 ▪ 40X NA 0.65 ▪ 100X/NA 1.25. Oil
OBJEKTIVREVOLVER	▪ 3-fold		▪ 4-fold
CONDENSER	▪ Bright-field Abbe condenser (NA 1.25) with Iris diaphragm and filter holder		
ILLUMINATION	▪ Built-in illumination with reflector (12 V 10 W)	▪ Built-in adjustable illumination with reflector (12 V 10 W)	
STATIV	▪ Made of metal with coarse and fine drive		
DIMENSIONS /IP CODE/WEIGHT	▪ Microscope (W x H x D): 135 mm x 360 mm x 220 mm/IP20/ 3.3 kg		
AMBIENT TEMPERATURE	▪ 0-40° C		
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)		
ELECTRICAL DATA	▪ External mains adaptor: 100-240 VAC, microscope: 12 VDC; Rated frequency: 50/60 Hz		
FURTHER EQUIPMENT	▪ Widefield eyepiece 5X (MML1105) ▪ Smartphone adapter (MML2043)		

1.2 Accessories for microscopes MML Series

Item number	Articles
MML1116	▪ Widefield plano eyepiece 16x
MML1110	▪ Widefield plano eyepiece 10X
MML1105	▪ Widefield eyepiece 5X
MML1016	▪ Plano eyepiece 16X
MML1115	▪ Widefield plano eyepiece 15X
MML1017	▪ Eyepiece with pointer 10X
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation
MML1002	▪ Micrometre eyepiece with 15X magnification and engraved micrometre scale
MML1004	▪ Micrometre eyepiece with 15X magnification and engraved micrometre scale
MML1001	▪ Polarisation device
MML2043	▪ Smartphone adapter for MML series or 23,2 mm tube

2 Binocular microscope MBL2000 basic model (halogen illumination)

Robust and universally applicable, MBL2000 microscopes display the unmistakable classic design of all KRÜSS microscopes. As a binocular microscope (basic equipment), microscopy is performed with two eyepieces. It is thus possible to view the sample under examination with both eyes. The diverse field of application includes many tasks in the school and university education sector, e.g. in the realisation of biological studies. In addition, the MBL 2000 model is ide… areas of life science research. In particular, this includes studies on animals, plants, microorganisms and cell… …en investigating pathogens, remedies or reactions to active substances. The MBL 2000 laboratory mic… …lly configured. For example, it is possible to connect a camera to a trinocular microscope for image…

Solid all-round microscope, universally applicable

Basic features:

- Dioptre compensation wit…
- Sturdy metal stand with … coaxial operation and height …
- Coarse and fine focu… …division 2 µm), coarse and fine foc…
- Right-side coarse… …stment, left-sided knob with quick…
- Low-voltage ill… …l and removable pre-condens…
- With halog…
- Double-l… …n iris diaphragm
- Glass fi… …veling filter holder

2.1 Overview of MBL2000 Series binocu…

MBL2000 basic model	…ves	MBL2000-PL-PH model with planachromatic objectives and Phase contrast device
		

2.2 Instruc…

The instructio… …n available for CSP partners with login in at the download area on the KRÜSS website.

2.3 …eries using phase contrast device

SCAN ME

3 Overview of all microscope models MBL2000 Series

Models*	Applications	Special microscope components
MBL2000-LED	▪ Bright-field microscopy ▪ Binocular microscopy	▪ LED transmitted light ▪ Optional: dark-field condenser ▪ Objectives: 4X, 10X, 40X, 100X
MBL2000-PL-LED	▪ Bright-field microscopy ▪ Binocular microscopy	▪ LED transmitted light ▪ Optional: dark-field condenser ▪ Planachromatic objectives: 4X, 10X, 40X, 100X
MBL2000-PL-PH-LED	▪ Bright-field microscopy ▪ Binocular microscopy ▪ Phase contrast microscopy	▪ Phase contrast device (with integrated dark-field) ▪ Optional: dark-field condenser ▪ Phase contrast objectives: PH10X, PH40X, PH100X, Planachromatic objectives 4X
MBL2000-T-LED-SET	▪ Bright-field microscopy ▪ Use of microscope camera	**SET consists of 4 parts:** ▪ Trinocular microscope model: MBL2000-T-LED ▪ Microscope camera model: MKVT8 ▪ MKTV-Display (Full-HD-Display) ▪ C-mount adapter
MBL2000-T-LED	▪ Bright-field microscopy ▪ Use of microscope camera	▪ LED transmitted light ▪ Optional: dark-field condenser ▪ Objectives: 4X, 10X, 40X, 100X
MBL2000-T-PL-PH-LED	▪ Bright-field microscopy ▪ Phase contrast microscopy ▪ Use of microscope camera	▪ Phase contrast device (with integrated dark-field) ▪ Optional: dark-field condenser ▪ Phase contrast objectives: PH10X, PH40X, PH100X, Planachromatic objectives: 4X

*Also available with halogen illumination in some cases. With different illumination (halogen vs. LED), the technical data is identical, except for the illumination.

3.1 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

3.2 Video microscope MBL2000 Series - Using the phase contrast device

SCAN ME

Directly to the KRÜSS-SHOP microscopes

4 Binocular microscope MBL2000-LED basic model

Robust and universally applicable, MBL2000 microscopes display the unmistakable classic design of all KRÜSS microscopes. As a binocular microscope (basic equipment), microscopy is performed with two eyepieces. It is thus possible to view the sample under examination with both eyes. The diverse field of application includes many tasks in the school and university education sector, e.g. in the realisation of biological studies. In addition, the MBL 2000 model is ideal in many areas of life science research. In particular, this includes studies on animals, plants, microorganisms and cell cultures, e.g. when investigating pathogens, remedies or reactions to active substances. The MBL 2000 laboratory microscopes can be individually configured, for example with a phase contrast device (model: MBL2000-PL-PH-LED).

Solid all-round microscope, universally applicable, with LED illumination

Basic features:

- Dioptre compensation with compensation scale
- Sturdy metal stand with graduated XY cross table enabling coaxial operation and height adjustment
- Coarse and fine focusing, double coaxial (0–200 µm, division 2 µm), coarse and fine focusing range: 30 mm
- Right-side coarse focusing knob with fast focus adjustment, left-sided knob with quick focus setting
- Low-voltage illumination with illumination control and removable pre-condenser
- With LED illumination
- Double-lens Abbe condenser: NA 1.25, with iris diaphragm
- Glass filters: blue, yellow, green; with swiveling filter holder

4.1 Overview of MBL2000-LED binocular microscopes model variants

MBL2000-LED basic model with LED illumination	MBL2000-PL-LED model with LED illumination and planachromatic objectives	MBL2000-PL-PH-LED model with LED illumination and planachromatic objectives and phase contrast device
		

4.2 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

4.3 Video microscope MBL2000 Series - Using the phase contrast device

SCAN ME

4.4 Basic technical data binocular microscopes MBL2000-LED models in comparison

Specification	Model: MBL2000-LED	Model: MBL2000-PL-LED	Model: MBL2000-PL-PH-LED
MICROSCOPE HEAD	▪ Oblique view ▪ Symmetrical eye distance adjustment (55-75 mm) ▪ Dioptre compensation with compensation scale		
EYEPIECES	▪ 10X plano eyepieces, focus length: 25 mm		
OBJECTIVES	**Achromatic objectives** ▪ 4X NA 0.10 Working distance 17.4 mm ▪ 10X, NA 0.25 Working distance 8.05 mm ▪ 40X, NA 0.65 Working distance 0.32mm ▪ 100X, NA 1.25 Oil Working distance 0.13mm	**Planachromatic objectives:** ▪ 4X, NA 0.10 Working distance 17.4 mm ▪ 10X, NA 0.25 Working distance 8.05 mm ▪ 40X, NA 0.65 Working distance 0.32mm ▪ 100X, NA 1.25 Oil Working distance 0.13mm	**Phase contrast objectives:** ▪ PH10X, NA 0.25 Working distance 8.05 mm ▪ PH40X, NA 0.65 Working distance 0.32mm ▪ PH100X, NA 1.25 Oil Working distance 0.13mm ▪ Planachromatic objectives: 4X, NA 0.10 Working distance 17.4 mm
REVOLVING NOSEPIECE	▪ 4-fold		
CONDENSER	▪ Double-lens ABBE condenser (NA 1.25) with Iris diaphragm, height adjustment and filter holder (blue, yellow, green included)		
	▪ Optional: dark-field condenser		▪ PH model also has: Phase contrast device (with integrated Dark-field)
ILLUMINATION	▪ LED illumination with brightness control		
MECHANICAL STAGE	▪ Graduated XY mechanical stage with coaxial operation with marker scale 0.1 mm graduation ▪ Range of motion: left-right 74 mm, front-rear 30 mm		
STAND	▪ Made of metal with coaxial coarse/fine drive in the 30 mm range ▪ Right-hand coarse drive with gear adjustment, left-hand coarse drive with quick-focusing device ▪ Accuracy of the fine drive: 0-200 µm, graduation 2 µm		
DIMENSIONS /IP CODE/WEIGHT	▪ Microscope (W x H x D): 190 mm x 370 mm x 230 mm, IP20		
	▪ 6 kg		▪ 6.8 kg
AMBIENT TEMPERATURE	▪ 0-40° C		
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)		
ELECTRICAL DATA	▪ Operating voltage: 100-240 VAC; Rated frequency: 50/60 Hz		

4.5 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

4.6 Videos microscope MBL2000 Series using phase contrast device

SCAN ME

4.7 Accessories binocular microscopes MBL2000 Series

Item number	Articles
MML2052	▪ The dark-field condenser is used instead of the bright-field condenser in the microscope. It provides an increase in contrast when viewing the specimen, e.g. during a blood investigation.
MML2031	▪ Phase contrast microscopy at 40X magnification; Consisting of a 40X Ph-objectives, condenser with matching phase contrast ring and adjustable telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2032	▪ Phase contrast microscopy at 20X magnification Phase contrast device consisting of a 20X Ph-objectives, condenser with matching phase contrast ring and adjustment telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2030	Large Phase contrast device - For phase contrast microscopy at various magnifications ▪ With Ph-objectives for 10X, 40X, 100X magnification ▪ During the examination, the condenser can be adjusted to the different phase contrast magnifications, with bright-field and dark-field condenser and with adjustable telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2051	▪ The polarization equipment consists of two polarization filters (polariser and analyser), with rotatable insert with scale for reading the angle of rotation of the polarization. ▪ This extension is often used for the analysis with brightfield or brightfield-optics. Transmitted light mode used.
MML1120	▪ Widefield plano eyepieces (2pcs), 20X magnification
MML1004	▪ Micrometer eyepiece 10X
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation
MML1017	▪ Pointer eyepiece 10X
MML1002	▪ Micrometer eyepiece 15X
MML1116	▪ Widefield plano eyepiece 16X
MML1110	▪ Widefield plano eyepiece 10X
MML1105	▪ Widefield eyepiece 5X
MML1016	▪ Plano eyepiece 16X
MML1115	▪ Widefield plano eyepiece 15X
MML2010	▪ Achromatic objective 4X
MML2011	▪ Achromatic objective 10X
MML2012	▪ Achromatic objective 20X
MML2014	▪ Achromatic objective 40X
MML2013	▪ Achromatic objective 60X
MML2017	▪ Achromatic objective 63X
MML2015	▪ Achromatic objective 100X
MML2020	▪ Planachromatic objective 4X
MML2021	▪ Planachromatic objective 10X
MML2022	▪ Planachromatic objective 20X
MML2024	▪ Planachromatic objective 40X
MML2027	▪ Planachromatic objective 63X
MML2025	▪ Planachromatic objective 100X

5 Trinocular-Microscope MBL2000-T-LED-SET

The purchase of our microscope sets offers a convenient solution to acquire several products needed for photo and video microscopy in a single purchase. This not only saves the effort of searching for and comparing each product individually but also reduces the number of deliveries and packages. The devices are also perfectly compatible with each other.

The MBL2000-T-LED-SET consists of four products:

- Trinocular microscope MBL2000-T-LED
- Microscope camera MKVT8
- MKTV-Display (Full-HD-Display)
- C-Mount-Adaptor

Directly to KRÜSS-Shop Microscope-Set

Trinocular microscope MBL2000-T-LED:

- With photo and video tube
- Dioptre compensation with compensation scale
- Sturdy metal stand with graduated XY mechanical stage enabling coaxial operation and height adjustment
- Coarse and fine drive, coaxial on both sides (0-200 µm, graduation 2 µm), coarse and fine drive range: 30 mm
- Right-hand coarse focusing knob with gear adjustment, left-hand knob with quick focusing device
- Low-voltage illumination with light control and removable pre-condenser
- With LED illumination
- Double-lens ABBE condenser: NA 1.25 with Iris diaphragm
- Glass filter: blue, yellow, green; Retractable filter holder

Microscope camera with 1/1.8" CMOS sensor:

- Resolution of 3840 x 2160 pixels
- USB 3.0 interface for PC connections (cable included)
- HDMI interface (HDMI cable included)
- USB interface for USB mouse or Wi-Fi adaptor (both included)
- Connection to PC via WLAN possible
- Live image, image recording and video function
- Integrated software & additional PC software
- Storage of image and video files on SD card (included)

The Full HD display has an HDMI interface for connection to the MKTV camera:

- 11.8" 1080p IPS LC display
- Resolution of 1920 x 1080 pixels (HD)

C-Mount-Adaptor:

- Adaptor with C-mount thread to connect a camera with C-mount thread (MK12 or MKTV8) to a microscope with 23.2 mm phototube

6 Trinocular microscope MBL2000-T basic model (LED illumination)

The MBL2000 microscope with photo and video tube is robust and universally applicable. In this trinocular microscope, two tubes are used for observation and the third tube holds the camera. These devices also allow you to quickly switch between visual microscopy and microscope photography or video recording. Microscopic photography is used when results need to be documented or experimental series recorded, for example, in quality control within the food industry. The MBL2000 model is also used in many areas of life science research. This includes studies on animals, plants, microorganisms and cell cultures in order to study pathogens, remedies or reactions to active substances. The MBL2000-T laboratory microscopes are individually configurable, for example with plan achromatic objectives (model: MBL2000-T-PL-LED) or with phase contrast device (model: MBL2000-T-PL-PH-LED).

Multifunctional microscope with photo and video tube
LED transmitted light; can be customised

Basic features:

- Dioptre compensation with compensation scale
- Sturdy metal stand with graduated XY cross table enabling coaxial operation and height adjustment
- Coarse and fine focusing, double coaxial (0–200 µm, division 2 µm), coarse and fine focusing range: 30 mm
- Right-side coarse focusing knob with fast focus adjustment, left-sided knob with quick focus setting
- Low-voltage illumination with illumination control and removable pre-condenser
- With LED illumination
- Double-lens Abbe condenser: NA 1.25, with iris diaphragm

Glass filters: blue, yellow, green; with swiveling filter holder

6.1 Overview trinocular microscope MBL2000-T model variants (LED illumination)

MBL2000-T-LED basic model with LED illumination	MBL2000-T-PL-LED model with LED illumination and planachromatic objectives	MBL2000-T-PL-PH-LED model with LED illumination and planachromatic objectives and phase contrast device
		

6.2 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

6.3 Videos Microscope MBL2000 Series using phase contrast device

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6.4 Basic technical data binocular microscopes MBL2000-T-LED Models in comparison

Specification	Model: MBL2000-T-LED	Model: MBL2000-T-PL-LED	Model: MBL2000-T-PL-PH-LED
MICROSCOPE HEAD	▪ Oblique view ▪ Symmetrical eye distance adjustment (55-75 mm) ▪ Dioptre compensation with compensation scale ▪ With photo and video tube		
EYEPIECES	▪ 10X plano eyepieces, focus length: 25 mm		
OBJECTIVES	**Achromatic objectives** ▪ 4X NA 0.10 Working distance 17.4 mm ▪ 10X, NA 0.25 Working distance 8.05 mm ▪ 40X, NA 0.65 Working distance 0.32mm ▪ 100X, NA 1.25 Oil Working distance 0.13mm	**Planachromatic objectives:** ▪ 4XNA 0.10 Working distance 17.4 mm ▪ 10X, NA 0.25 Working distance 8.05 mm ▪ 40X, NA 0.65 Working distance 0.32mm ▪ 100X, NA 1.25 Oil Working distance 0.13mm	**Phase contrast objectives:** ▪ PH10X, NA 0.25 Working distance 8.05 mm ▪ PH40X, NA 0.65 Working distance 0.32mm ▪ PH100X, NA 1.25 Oil Working distance 0.13mm ▪ Planachromatic objectives: 4X, NA 0.10 Working distance 17.4 mm
REVOLVING NOSEPIECE	▪ 4-fold		
CONDENSER	▪ Double-lens ABBE condenser (NA 1.25) with Iris diaphragm, height adjustment and filter holder (blue, yellow, green included)		
	▪ Optional: dark-field condenser		▪ PH model also has: Phase contrast device (with integrated Dark-field)
ILLUMINATION	▪ LED illumination with brightness control		
MECHANICAL STAGE	▪ Graduated XY mechanical stage with coaxial operation with marker scale 0.1 mm graduation ▪ Range of motion: left-right 74 mm, front-rear 30 mm		
STAND	▪ Made of metal with coaxial coarse/fine drive in the 30 mm range ▪ Right-hand coarse drive with gear adjustment, left-hand coarse drive with quick-focusing device ▪ Accuracy of the fine drive: 0-200 µm, graduation 2 µm		
DIMENSIONS / IP CODE/WEIGHT	▪ Microscope (W x H x D): 190 mm x 400 mm x 230 mm, IP20		
	▪ 7 kg		▪ 7.2 kg
AMBIENT TEMPERATURE	▪ 0-40° C		
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)		
ELECTRICAL DATA	▪ Operating voltage: 100-240 VAC; Rated frequency: 50/60 Hz		

6.5 Online purchase of accessories for microscopes

KRÜSS offers an excellent range of high-quality consumables, calibration standards and accessories. We offer everything you need for efficient and precise work processes. Our well-chosen products are high quality and meet the highest standards.

Directly to the KRÜSS-SHOP

6.6 Accessories trinocular microscopes MBL2000-T Series with photo and video tube

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution: 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution: 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MML2047	▪ C-mount adaptor with eyepiece for microscopes with photo and video tube (23.2 mm tube)
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MML2052	▪ The dark-field condenser is used instead of the bright-field condenser in the microscope. It provides an increase in contrast when viewing the specimen, e.g. during a blood investigation.
MML2031	▪ Phase contrast microscopy at 40X magnification; Consisting of: a 40X Ph-objectives, condenser with matching phase contrast ring and adjustable telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2032	▪ Phase contrast microscopy at 20X magnification Phase contrast device consisting of: a 20X Ph-objectives, condenser with matching phase contrast ring and adjustment telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2030	Large Phase contrast device - For phase contrast microscopy at various magnifications ▪ With Ph-objectives for: 10X, 40X, 100X magnification ▪ During the examination, the condenser can be adjusted to the different phase contrast magnifications, with bright-field and dark-field condenser and with adjustable telescope. ▪ The Phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects.
MML2051	▪ The polarization equipment consists of: Two polarization filters (polariser and analyser), with rotatable insert with scale for reading the angle of rotation of the polarization. ▪ This extension is often used for the analysis with brightfield or brightfield-optics. Transmitted light mode used.
MML1120	▪ Widefield plano eyepieces (2pcs), 20X magnification
MML1004	▪ Micrometer eyepiece 10X
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation
MML1017	▪ Pointer eyepiece 10X
MML1002	▪ Micrometer eyepiece 15X
MML1116	▪ Widefield plano eyepiece 16X
MML1110	▪ Widefield plano eyepiece 10X
MML1105	▪ Widefield eyepiece 5X
MML1016	▪ Plano eyepiece 16X
MML1115	▪ Widefield plano eyepiece 15X
MML2010	▪ Achromatic objective 4X
MML2011	▪ Achromatic objective 10X
MML2012	▪ Achromatic objective 20X
MML2014	▪ Achromatic objective 40X
MML2013	▪ Achromatic objective 60X
MML2017	▪ Achromatic objective 63X
MML2015	▪ Achromatic objective 100X
MML2020	▪ Planachromatic objective 4X
MML2021	▪ Planachromatic objective 10X
MML2022	▪ Planachromatic objective 20X
MML2024	▪ Planachromatic objective 40X
MML2027	▪ Planachromatic objective 63X
MML2025	▪ Planachromatic objective 100X

7 Inverted microscope MBL3200-LED model with trinocular tube

This inverted microscope has been specially designed for identifying and analyzing biological substances and cultures. It is used, for example, in control laboratories of pharmaceutical production, food production and waste water analysis. This inverted microscope is ideal for examining living cells in Petri dishes or culture chambers. The objectives of the MBL3200-LED microscope have a large working distance. This makes them ideal for viewing samples through the bottom of Petri dishes, for example, or for examining sediments. SLR, microscope or video cameras can be connected via the Phototube. This makes it easy to carry out examinations for photo or video documentation.

Inverted microscope for cell examination

Basic features:

- Large working distance
- Observation in larger containers possible, e.g. cell culture dishes
- Suitable for examining living cells and for cell manipulation
- Documentation possible via photo and video camera connection
- Phase contrast device with 20X objectives included

7.1 Basic technical data MBL3200-LED Model

MICROSCOPE HEAD	OBJECTIVE REVOLVER	OBJECTIVE (MAGNIFICATION; NA, WORKING DISTANCE)
▪ Inclined optical head, ▪ Symmetrical eye distance adjustment (55 – 75 mm), ▪ Dioptre compensation with scale. ▪ Photo and video tube	▪ 5-fold	▪ Planachromatic ▪ 4X/NA 0.10 // Ø: 5.5 mm ▪ 10X/NA 0.25 // Ø: 2.2 mm ▪ 40X/NA 0.65 // Ø: 0.55 mm ▪ PH20X/NA 0.45 // Ø: 1.1 mm

EYEPIECES	CONDENSOR	ILLUMINATION	XY MECHANICAL STAGE
▪ 10X plan eyepieces ▪ Field number: 22	▪ Double lens condenser (NA 0.3)	▪ Adjustable LED illumination (6 V 30 W) with Iris diaphragm and filter holder (blue and green included)	▪ XY table ▪ Range of movement: 118 x 80mm

STAND	OPERATING VOLTAGE	FURTHER EQUIPMENT
▪ Made of metal with coaxial coarse/fine drive	▪ 90–240 V	▪ Iris diaphragm ▪ Filter holder, blue filter, green filter ▪ Third tube for connecting photo and video cameras ▪ Phase contrast device for 20X

7.2 Accessories for microscope MBL3200-LED Model

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution of 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MML2047	▪ C-mount adaptor with eyepiece for microscopes with photo and video tube (23.2 mm tube)
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MBL3260	▪ Planachromatic objective 60X/NA 0.85
MBL3240	▪ Phase contrast device for 40X

8 Metallurgical incident-light microscope MBL3300 Model

The MBL3300 model is specially designed for the analysis of metallic materials and surfaces. Thanks to the integrated incident light illumination, it is suitable for quality determination and for checking metal structures. Using different filters, the microscopy image can be adjusted to individual needs. The MBL3000 model is equipped with a photo tube for connection a microscope, photo or video camera.

Basic features:

- A microscope, photo or video camera can be connected
- Adjustable incident light illumination
- Illumination unit with iris diaphragm and filter holder (blue filter included, green filter optionally available)
- Metal stand with coaxial coarse/fine drive (30 mm each)
- Possibility of movement adjustment and quick focusing device
- Dimensions: 200 mm x 480 mm x 440 mm
- Weight: 9 kg
- IP code: IP20

Specialist for the examination of metallic materials

8.1 Basic technical data MBL3300 Model

MICROSCOPE HEAD	OBJECTIVE REVOLVER	OBJECTIVE (MAGNIFICATION; NA, WORKING DISTANCE)
▪ Inclined optical head, ▪ Symmetrical eye distance adjustment (55 – 75 mm), ▪ Dioptre compensation with scale ▪ Photo and video tube	▪ 4-fold	▪ Planachromatic ▪ 5X/NA 0.10, object field Ø: 3.6 mm ▪ 10X/NA 0.25, object field Ø: 1.8 mm ▪ 50X/NA 0.65, object field Ø: 0.36 mm

EYEPIECES	CONDENSOR	ILLUMINATION	XY MECHANICAL STAGE
▪ 10X plan eyepiece ▪ Field number: 18	▪ Double-lens ABBE condenser, NA 1.25, with centring and height adjustment	▪ Adjustable incident light (halogen lamp: 6 V 30 W)	▪ XY table ▪ Range of movement: 120x80 mm

STAND	OPERATING VOLTAGE	FURTHER EQUIPMENT
▪ Made of metal, with coaxial coarse/fine drive (30 mm each), with gear adjustment and quick-focus setting	▪ 90–240 V ; 50/60 Hz	▪ Illumination unit with Iris diaphragm and filter holder (blue included, green optionally available) ▪ Third tube enables use of a microscope camera

8.2 Accessories for microscope MBL3300 Model

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution of 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MML2047	▪ C-mount adaptor with eyepiece for microscopes with photo and video tube (23.2 mm tube)
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MBL3320	▪ Objective planachromatic 20X/NA 0.45
MBL3360	▪ Planachromatic objective 60X/NA 0.85
MMB2314	▪ Polarisation device
MMB2310	▪ Yellow filter
MMB2311	▪ Green filter
MMB2312	▪ Neutral filter

9 Overview of microscopes MBL4000 Series

Models	Applications	Special microscope components
MBL4000-T-LED-SET	▪ Bright-field microscopy ▪ Use of microscope camera	SET consists of 4 parts: ▪ Trinocular microscope model: MBL4000-T-LED with Köhler illumination ▪ Microscope camera model: MKVT8 ▪ MKTV-Display (Full-HD-Display)
MBL4000-T-LED	▪ Bright-field microscopy ▪ Use of microscope camera	▪ Optional: dark-field condenser
MBL4000-T-PH-LED	▪ Bright-field microscopy ▪ Phase contrast microscopy ▪ Use of microscope camera	▪ Phase contrast device for 10X, 20X, 40X and 100X ▪ Optional: dark-field condenser
MBL4000-T-F-LED	▪ Bright-field microscopy ▪ Fluorescence microscopy ▪ Use of microscope camera	▪ Fluorescence unit (B/G filter) ▪ Optional: dark-field condenser
MBL4000-T-F-PH-LED	▪ Bright-field microscopy ▪ Phase contrast microscopy ▪ Fluorescence microscopy ▪ Use of microscope camera	▪ Phase contrast device for 10X, 20X, 40X and 100X ▪ Fluorescence unit (B/G filter) ▪ Optional: dark-field condenser
MBL4000-T-B-LED	▪ Bright-field microscopy ▪ Dark-field microscopy according to Enderlein ▪ Use of microscope camera	▪ Planachromatic100X objective with iris diaphragm ▪ Dark-field condenser

9.1 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

9.2 Video trinocular microscope MBL4000 Series - Microscopy with Köhler illumination

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10 Trinocular Microscope MBL4000-T-LED-SET

The purchase of our microscope sets offers a convenient solution to acquire several products needed for photo and video microscopy in a single purchase. This not only saves the effort of searching for and comparing each product individually but also reduces the number of deliveries and packages. The devices are also perfectly coordinated.

The MBL4000-T-LED-SET consists of three products:

- Trinocular microscope MBL2000-T-LED
- Microscope camera MKVT8
- MKTV-Display (Full-HD-Display)

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Trinokular-Mikroskop MBL4000-T-LED:

- With photo and video tube
- Microscopy with a magnification of up to 1000X
- Fully rotatable Siedentopf trinocular head with C-MOUNT and adjustable eye distance adjustment
- Wide-field pair of eyepieces with dioptre compensation
- Five infinity corrected planachromatic objectives
- Revolving nosepiece for five objectives with parfocal distance
- Mechanical stage with clamps and scale
- Coarse and fine drive
- Bright field condenser, a dark field condenser is possible as an option
- 5W LED Köhler illumination

Microscope camera with 1/1.8" CMOS sensor:

- Resolution of 3840 x 2160 pixels
- USB 3.0 interface for PC connections (cable included)
- HDMI interface (HDMI cable included)
- USB interface for USB mouse or Wi-Fi adaptor (both included)
- Connection to PC via WLAN possible
- Live image, image recording and video function
- Integrated software & additional PC software
- Storage of image and video files on SD card (included)

The Full HD display has an HDMI interface for connection to the MKTV camera:

- 11.8" 1080p IPS LC display
- Resolution of 1920 x 1080 pixels (HD)

11 Transmitted light trinocular microscope MBL4000-T-LED

The MBL4000 series devices are transmitted light microscopes designed for the examination of specimens/samples/objects on microscope slides. The microscopes belong to the class of compound microscopes. These microscopes are used for the magnification of objects in two stages, using objectives and an eyepiece. The devices are equipped with several plan-achromatic objectives with different magnifications from 4X - 100X. In combination with a 10X plan eyepiece pair, magnifications of up to 1000X are possible. The transmitted light illumination consists of a 5W LED with Köhler illumination. The microscopes in the MBL4000 series are all trinocular microscopes, which makes it easy to connect a microscope camera. The different models in the MBL4000 series ensures a wide range of applications: from bright-field microscopy to dark-field and phase contrast microscopy to fluorescence microscopy or blood analyses according to Enderlein. (Model: MBL4000-T-B-LED).

Basic features:

- With photo and video tube
- Microscopy with a magnification of up to 1000X
- Fully rotatable Siedentopf trinocular head with C-MOUNT and adjustable eye distance adjustment
- Wide field eyepiece pair with dioptre compensation
- Five infinity corrected planachromatic objectives
- Revolving nosepiece for five objectives with parfocal distance
- Mechanical stage with holding clamps and scale
- Coarse and fine drive
- Bright-field condenser, dark-field condenser available as option
- 5W LED Köhler illumination

Transmitted light trinocular microscope with Köhler illumination (LED)

11.1 Overview of MBL4000-T-LED trinocular microscopes model variants

MBL4000-T-LED with LED illumination and planachromatic objectives	MBL4000-T-PH-LED with LED illumination and planachromatic objectives and phase contrast device
	

11.2 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

11.3 Video trinocular microscope MBL4000 Series - Microscopy with Köhler illumination

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11.4 Basic technical data trinocular microscopes MBL4000-T-LED models (photo and video tube) in comparison

Specification	Modell: MBL4000-T-LED	Modell: MBL4000-T-PH-LED
MICROSCOPE HEAD	▪ Siedentopf trinocular head, 30° angled, 360° rotatable, eye distance adjustment: 48 mm – 76 mm ▪ Beam splitter position 1: 100% for eyepieces ▪ Beam splitter position 2: 20% for eyepieces and 80% for third tube (camera connection with C-mount)	
EYEPIECES	▪ WF10X/22 mm with dioptre compensation	
OBJECTIVES	▪ All objectives are infinity corrected with 0.17 mm cover glass correction ▪ 4X, NA 0.1, working distance 12.1 mm ▪ 10X, NA 0.25, working distance 4.64 mm ▪ 20X(S), NA 0.40, working distance 2.41 mm ▪ 40X, NA 0.65, working distance 0.65 mm ▪ 100X (S, oil), NA 1.25, working distance 0.12 mm ▪ Only for MBL4000-T-PH-LED & MBL4000-T-PH-F-LED: 10X/20X/40X/100X phase contrast objectives ▪ Only with MBL4000-T-B-LED: 100X (S, oil) with iris diaphragm, NA 1.25	
PHASE CONTRAST OBJECTIVES	▪ No phase contrast objectives	▪ 10X/20X/40X/100X phase contrast objectives
CONDENSER	▪ Double-lens ABBE condenser, NA 1.25, with centring for Köhler illumination, aperture diaphragm and height adjustment	
	▪ As an option: Dark-field condenser	▪ Additional: Phase contrast device As an option: Dark-field condenser
ILLUMINATION	▪ Köhler illumination, 5W LED with field diaphragm and brightness control ▪ Recess for colour filter	
MECHANICAL STAGE	▪ Mechanical stage (182 mm – 140 mm) with marker scale 0.1 mm graduation ▪ Range of motion: 77 mm x 52 mm	
STAND	▪ Made of metal with coaxial coarse/fine drive in the range of 25 mm ▪ Coarse drive: 42.4 mm/revolution; fine drive: 0.2 mm/revolution ▪ Accuracy of the fine drive: 2 µm	
FURTHER APPLICATIONS	▪ With third tube for connecting a photo and video camera	
DIMENSIONS/IP CODE/ WEIGHT	▪ 230 mm x 420 mm x 390 mm; IP20	
	▪ 10 kg	
AMBIENT TEMPERATURE	▪ 0-40° C	
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)	
ELECTRICAL DATA	▪ External mains adaptor: 100-240 VAC; Microscope: 5-12 VDC; Rated Frequency: 50/60 Hz	

11.5 Online purchase of accessories for microscopes

KRÜSS offers an excellent range of high-quality consumables, calibration standards and accessories. We offer everything you need for efficient and precise work processes. Our well-chosen products are high quality and meet the highest standards.

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11.6 Accessories trinocular microscopes MBL4000-T Series with photo and video tube

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution: 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution: 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MML2067	▪ The dark-field condenser is used instead of the bright-field condenser in the microscope. It provides an increase in contrast when viewing the specimen, e.g. during a blood investigation.
MML2074	Phase contrast device - For phase contrast microscopy at various magnifications ▪ With Ph objectives for: 10X, 20X, 40X, 100X magnification ▪ The condenser can be adjusted to the different phase contrast magnifications during the examination, with bright-field and with adjustable telescope. ▪ The phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects
MML2075	▪ Micrometer eyepiece 10X magnification
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation
MML2076	▪ Polarisation device with analyser and polariser
MML2077	▪ Blue filter (Ø 45 mm)
MML2078	▪ Green filter (Ø 45 mm)
MML2079	▪ Yellow filter (Ø 45 mm)

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12 Trinocular microscope MBL4000-T-F-LED with Fluorescence unit (B/G)

The MBL4000 series devices are transmitted light microscopes designed for the examination of specimens/samples/objects on microscope slides. The microscopes belong to the class of compound microscopes. These microscopes are used for the magnification of objects in two stages, using objectives and an eyepiece. The devices are equipped with several plan-achromatic objectives with different magnifications from 4X - 100X. In combination with a 10X plan eyepiece pair, magnifications of up to 1000X are possible. The transmitted light illumination consists of a 5W LED with Köhler illumination. The microscopes in the MBL4000 series are all trinocular microscopes, which makes it easy to connect a microscope camera. The different models in the MBL4000 series ensures a wide range of applications: from bright-field microscopy to dark-field and phase contrast microscopy to fluorescence microscopy or blood analyses according to Enderlein. (Model: MBL4000-T-B-LED).

Transmitted light microscope with tube and Köhler illumination (LED) and fluorescence unit

Basic features:

- With photo and video tube
- Microscopy with a magnification of up to 1000X
- Fully rotatable Siedentopf trinocular head with C-MOUNT and adjustable eye distance adjustment
- Wide-field eyepiece pair with dioptre compensation
- Five infinity corrected planachromatic objectives
- Revolving nosepiece for five objectives with parfocal distance
- Mechanical stage with holding clamps and scale
- Coarse and fine drive
- Bright-field condenser, dark-field condenser available as option
- 5W LED Köhler illumination
- Microscope MBL4000-T-F-PH-LED has phase-contrast illumination with corresponding objectives
- Microscopes MBL4000-T-F-LED & MBL4000-T-F-PH-LED have a 3W LED epi-fluorescence unit (B/G)

12.1 Overview of MBL4000-T-F-LED trinocular microscopes Model variants

MBL4000-T-F-LED with LED illumination and planachromatic objectives and fluorescence unit	MBL4000-T-F-PH-LED with LED illumination and fluorescence unit and phase contrast device
	

12.2 Instruction Manual

The instruction manual is in German and English available for CSP partners with login in at the download area on the KRÜSS website.

12.3 Video trinocular microscope MBL4000 Series - Microscopy with Köhler illumination

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12.4 Basic technical data trinocular microscopes MBL4000-T-F-LED models (with fluorescence unit) in comparison

Specification	Modell: MBL4000-T-F-LED	Modell: MBL4000-T-F-PH-LED
MICROSCOPE HEAD	▪ Siedentopf trinocular head, 30° angled, 360° rotatable, eye distance adjustment: 48 mm – 76 mm ▪ Beam splitter position 1: 100% for eyepieces ▪ Beam splitter position 2: 20% for eyepieces and 80% for third tube (camera connection with C-mount)	
EYEPIECES	▪ WF10X/22 mm with dioptre compensation	
OBJECTIVES	▪ All objectives are infinity corrected with 0.17 mm cover glass correction ▪ 4X, NA 0.1, working distance 12.1 mm ▪ 10X, NA 0.25, working distance 4.64 mm ▪ 20X(S), NA 0.40, working distance 2.41 mm ▪ 40X, NA 0.65, working distance 0.65 mm ▪ 100X (S, oil), NA 1.25, working distance 0.12 mm ▪ Only for MBL4000-T-PH-LED & MBL4000-T-PH-F-LED: 10X/20X/40X/100X phase contrast objectives ▪ Only with MBL4000-T-B-LED: 100X (S, oil) with iris diaphragm, NA 1.25	
PHASE CONTRAST OBJECTIVES	▪ No phase contrast objectives	▪ 10X/20X/40X/100X phase contrast objectives
CONDENSER	▪ Double-lens ABBE condenser, NA 1.25, with centring for Köhler illumination, aperture diaphragm and height adjustment	
	▪ As an option: Dark-field condenser	▪ Additional: Phase contrast device As an option: Dark-field condenser
ILLUMINATION	▪ Köhler illumination, 5W LED with field diaphragm and brightness control ▪ Recess for colour filter	
FLUORESCENCE ILLUMINATION	▪ 3W LED epi-fluorescence (six-hole disc, B&G filter)	
FLUORESCENCE FILTERS	▪ Filter wheel for 6 positions Filters B & G installed (B for 470 nm, G for 500 nm – 550 nm)	
MECHANICAL STAGE	▪ Mechanical stage (182 mm x 140 mm), with marker scale 0.1 mm graduation ▪ Range of motion: 77 mm x 52 mm	
STAND	▪ Made of metal with coaxial coarse/fine drive in the range of 25 mm ▪ Coarse drive: 42.4 mm/revolution; fine drive: 0.2 mm/revolution ▪ Accuracy of the fine drive: 2 µm	
FURTHER APPLICATIONS	▪ With third tube for connecting a photo and video camera	
DIMENSIONS/IP CODE/	▪ Microscope: 230 mm x 490 mm x 530 mm; IP20 ▪ Fluorescence unit:150 mm x 80 mm x 220 mm	
WEIGHT	▪ 15 kg	
AMBIENT TEMPERATURE	▪ 0-40° C	
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)	
ELECTRICAL DATA	▪ External mains adaptor: 100-240 VAC; Microscope: 5-12 VDC; Rated Frequency: 50/60 Hz	
OPERATING VOLTAGE FLUORESCENCE	▪ External mains adaptor: 100-240 VAC, Fluorescence unit: 5-12 VDC	

12.5 Online purchase of accessories for microscopes

KRÜSS offers an excellent range of high-quality consumables, calibration standards and accessories. We offer everything you need for efficient and precise work processes. Our well-chosen products are high quality and meet the highest standards.

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12.6 Accessories trinocular microscopes MBL4000-T Series with photo and video tube and Fluorescence unit

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution: 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution: 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MML2067	▪ The dark-field condenser is used instead of the bright-field condenser in the microscope. It provides an increase in contrast when viewing the specimen, e.g. during a blood investigation.
MML2074	▪ Phase contrast device - For phase contrast microscopy at various magnifications ▪ With Ph objectives for: 10X, 20X, 40X, 100X magnification ▪ The condenser can be adjusted to the different phase contrast magnifications during the examination, with bright-field and with adjustable telescope. ▪ The phase contrast device is used to microscope specimens with low contrast. Suitable for: Very thin biological specimens, low-contrast specimens, non-stained specimens, living objects
MML2075	▪ Micrometer eyepiece 10X magnification
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation
MML2076	▪ Polarisation device with analyser and polariser
MML2077	▪ Blue filter (Ø 45 mm)
MML2078	▪ Green filter (Ø 45 mm)
MML2079	▪ Yellow filter (Ø 45 mm)

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13 Trinocular microscope MBL4000-T-B-LED (for blood examination)

The special model MBL4000-T-B-LED of the MBL4000 microscope series belongs to the class of Compound microscopes. It is suitable for the observation of blood in dark field diagnosis, according to Enderlein. The necessary dark field condenser and the 100X objectives with Iris diaphragm are included with the MBL4000-T-B-LED model. The good imaging quality makes very small structures visible, and blood cells can also be excellently examined.

As with all models in the MBL4000 series, this microscope can perform magnification of objects in two stages, via objectives and eyepiece. The device is equipped with several plan achromatic objectives with different magnifications from 4X – 100X. In combination with a pair of 10X plano eyepieces, magnifications of up to 1000X are possible. The transmitted light illumination consists of a 5W LED with Köhler illumination. It is a trinocular microscope, which makes it easy to connect a microscope camera.

Microscope for blood analysis according to Enderlein with Köhler illumination and photo & video tube

Basic features:

- With third tube for connecting a photo and video camera
- 100X objectives with Iris diaphragm and dark field condenser for blood examination according to Enderlein
- Microscopy with a magnification of up to 1000X
- Fully rotatable Siedentopf trinocular head with C-MOUNT and adjustable eye relief
- Wide-field pair of eyepieces with dioptre compensation
- Five infinity corrected planachromatic objectives
- Revolving nosepiece for five objectives with parfocal distance
- Mechanical stage with clamps and scale
- Coarse and fine drive
- Bright field condenser
- 5W LED Köhler illumination

13.1 Basic technical data trinocular microscope MBL4000-T-B-LED Model for blood examination

Specification	Model: MBL4000-T-B-LED
MICROSCOPE HEAD	▪ Siedentopf trinocular head, 30° angled, 360° rotatable, eye distance adjustment: 48 mm – 76 mm ▪ Beam splitter position 1: 100% for eyepieces ▪ Beam splitter position 2: 20% for eyepieces and 80% for third tube (camera connection with C-mount)
EYEPIECES	▪ WF10X/22 mm with dioptre compensation
REVOLVING NOSEPIECE	▪ 5-fold, rear-facing
OBJECTIVES	▪ All objectives are infinity corrected with 0.17 mm cover glass correction ▪ 4X, NA 0.1, Working distance 12.1 mm ▪ 10X, NA 0.25, Working distance4.64 mm ▪ 20X(S), NA 0.40, Working distance 2.41 mm ▪ 40X(S), NA 0.65, Working distance 0.65 mm ▪ 100X (S, oil) with iris diaphragm, NA 1.25
CONDENSER	▪ Double-lens ABBE condenser, NA 1.25, with centring for Köhler illumination, aperture diaphragm and height adjustment
	▪ Additional: Dark-field condenser, NA 0.83-0.91
ILLUMINATION	▪ Köhler illumination; 5W LED with field diaphragm and brightness control, recess for colour filter
MECHANICAL STAGE	▪ Mechanical stage (182 mm x 140 mm) with marker scale 0.1 mm graduation ▪ Range of motion: 77 mm x 52 mm
STAND	▪ Made of metal with coaxial coarse/fine drive in the range of 25 mm ▪ Coarse drive: 42.4 mm/revolution; fine drive: 0.2 mm/revolution ▪ Accuracy of the fine drive: 2 µm
FURTHER APPLICATIONS	▪ With third tube for connecting a photo and video camera
DIMENSIONS/IP CODE/ WEIGHT	▪ 230 mm x 490 mm x 530 mm;
	▪ 10 kg
AMBIENT TEMPERATURE	▪ 0-40° C
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)
ELECTRICAL DATA	▪ External mains adaptor: 100-240 VAC; Microscope: 5-12 VDC; Rated Frequency: 50/60 Hz

13.2 Accessories trinocular microscopes MBL4000-T-B-LED Model with photo and video tube

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution: 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with HDMI, USB 3.0 and WLAN connection, SD card ▪ Resolution: 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
MML2028	▪ Objective planachromatic 100X with iris diaphragm
MML2067	▪ The dark-field condenser is used instead of the bright-field condenser in the microscope. It provides an increase in contrast when viewing the specimen, e.g. during a blood investigation.
MML2075	▪ Micrometer eyepiece 10X magnification
MML1003	▪ Stage micrometer with scale length: 1mm, 0.01mm graduation

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14 Stereo microscopes MSL4000 Series

The stereo microscopes of the MSL4000 series offer an optimal price-performance ratio. Thanks to the wide range of accessories and various eyepieces, they are suitable for a wide range of applications. All microscopes have a 45° inclined view, interpupillary distance adjustment and dioptre compensation.
The metal housing is stable and robust. The MSL microscopes have a rechargeable battery, which makes them independent of an external power supply. Its runtime is a user-friendly 15 hours.

Basic features:

- Perfect stereo microscope for beginners
- Available with 10X and 30X or 20X and 40X magnification
- Large working distance
- Incident and transmitted light (LED)
- Dioptre range adjustable on one side
- A wide range of accessories are available for all models
- Integrated rechargeable battery

Stereomicroscope for standard examinations

14.1 Basic technical data MSL4000 Series stereo microscopes in comparison

Specification	Model: MSL4000-10/30-IL-TL	Model: MSL4000-20/40-IL-TL
MICROSCOPE HEAD	▪ 45° angled view, symmetrical eye distance, one-sided dioptre compensation	
EYEPIECES	▪ 10X widefield eyepieces, field number: 20	
OBJECT FIELD DIAMETER	▪ 20.0 mm – 6.7 mm	▪ 10.0 mm – 5.0 mm
REVOLVING NOSEPIECE	▪ 2-fold	
OBJECTIVES	▪ 1X and 3X	▪ 2X and 4X
MAGNIFICATION	▪ 10X and 30X	▪ 20X and 40X
ILLUMINATION	▪ With incident and transmitted light (6 V LED)	
STAND	▪ Robust metal stand	
ADDITIONAL EQUIPMENT	▪ Battery with 15 h runtime ▪ Contrast plate black/white and glass	
DIMENSIONS/IP CODE/WEIGHT	▪ 130 mm x 240 mm x 320 mm; IP 20; 2.9 kg	
AMBIENT TEMPERATURE	▪ 0-40° C	
AMBIENT HUMIDITY	▪ 10-90% (non-condensing)	
ELECTRICAL DATA	▪ External mains adaptor: 100-240 VAC; Microscope: 5-12 VDC; Rated Frequency: 50/60 Hz	

14.2 Accessories for microscopes MSL4000 Series

Item number	Articles
MSL4331	▪ Pair of widefield eyepieces 15X magnification
MSL4332	▪ Pair of widefield eyepieces 20X magnification
MSL4333	▪ Pair of widefield eyepieces 10X magnification
MSL4334	▪ Pair of widefield eyepieces 5X magnification
MSZ5419	▪ Dark-field condenser for stereomicroscopes with transmitted light illumination

15 Overview Stereo Zoom Microscopes MSZ5000 Series all models

Microscope Models	Optical microscope configuration	Features
MSZ5000	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	- - - -- - - -- - -
MSZ5000-IL-TL	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ 12 V 15 W Incident and transmitted light (halogen illumination), steplessly variable
MSZ5000-IL-TL-LED	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ 5 V 3 W Incident and transmitted light (LED), steplessly variable
MSZ5000-RL	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Incident light (LED ring lamp) ▪ External mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt
Models with photo and video tube		
MSZ5000-T-LED SET	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification ▪ Tube for connecting photo and video cameras	**Microscope SET consists of 4 parts:** ▪ Stereo microscope MSZ5000-T-IL-TL-LED ▪ Microscope camera model: MKVT8 ▪ MKTV display (Full HD display) ▪ C-mount adapter MML2047
MSZ5000-T	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Tube for connecting photo and video cameras
MSZ5000-T-IL-TL-LED	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ 5 V 3 W Incident and transmitted light (LED), steplessly variable ▪ Tube for connecting photo and video cameras
MSZ5000-T-RL	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Incident light (LED ring lamp) ▪ External mains adaptor(LDR72): 100-240 VAC LDR72: 12 Volt ▪ Tube for connecting photo and video cameras
Models with Swivelling Stand		
MSZ5000-S	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Large swivelling stand
MSZ5000-T-S	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Tube for connecting photo and video cameras ▪ Large swivelling stand
MSZ5000-S-RL	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Incident light (LED ring lamp) ▪ External mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt ▪ Large swivelling stand
MSZ5000-T-S-RL	▪ 10X widefield eyepieces ▪ 0.7–4.5X Zoom objective ▪ 7–45X Total magnification	▪ Incident light (LED ring lamp) ▪ External mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt ▪ Large swivelling stand ▪ Tube for connecting photo and video cameras

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16 Stereo zoom microscopes MSZ5000 Series

A robust zoom stereo microscope for the professional examination of electronics, precision mechanics and plastic products as well as biological samples. It is used for inspection, assembly, analysis or for soldering and polishing and fine machining – an excellent tool for quality control. The large zoom range, the large working distance and the wide depth of field make it possible to work very comfortably in many areas. It offers a continuous zoom from 0.7X to 4.5X. The robust metal housing facilitates reliable work even in harsh environments. Various magnification eyepieces and attachment lenses for adjusting magnification and working distance are available as accessories.

Stereomicroscope for advanced examinations and stepless zoom

Basic features:

- Large working distance
- Stepless zoom
- 7X to 45X total magnification
- Attachment lenses optionally available for adjusting the maximum magnification or further magnification of the working distance
- Wide range of accessories

16.1 Basic technical data for the stereo zoom microscope MSZ5000 Series

Specification	Model: MSZ5000	Model: MSZ5000-IL-TL	Model: MSZ5000-IL-TL-LED	Model: MSZ5000-RL
MICROSCOPE HEAD	▪ 45° angled view, Symmetrical eye distance adjustment 54-76 mm, dioptre compensation on both sides			
EYEPIECES	▪ 10X widefield eyepieces, field number: 20			
OBJECT FIELD DIAMETER	▪ 28.6 mm – 4.44 mm			
OBJECTIVES	▪ 0.7-4.5x zoom objectives, stepless, zoom ratio (6.4:1)			
MAGNIFICATION	▪ 7X – 45X, optionally expandable to 14X – 90X with 20X eyepieces			
WORKING DISTANCE	▪ Approx. 90 cm			
ILLUMINATION	▪ - - - - - - - -	▪ 12V 15W, with incident and transmitted light (halogen), steplessly variable	▪ 5V 3W, with incident and transmitted light (LED); steplessly variable	▪ With incident light (LED ring illumination))
STAND	▪ Robust metal stand			
DIMENSIONS/IP CODE/ WEIGHT	▪ Microscope (W x H x D): 200 mm x 390 mm x 310 mm; IP 20			
	▪ 4.1 kg	▪ 7 kg		▪ 4.4 kg
OPERATING VOLTAGE	▪ - - - - - - - --	▪ 230 VAC	▪ 100-240 VAC	▪ External Mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt
RATED FREQUENCY	▪ - - - - - - - -	▪ 50 Hz	▪ 50/60 Hz	▪ 50/60 Hz

16.2 Accessories stereo zoom microscope MSZ5000 Series

Item number	Articles
LDR72	▪ LED daylight ring light with 72 LEDs
MSZ5405-N	▪ 0.5X attachment lens ideal for doubling the working distance. Halves the magnification.
MSZ5418-N	▪ 2X attachment lens, the attachment lens is ideal for increasing magnification – reduces the working distance to the object that being examined. For magnification from 14X – 90X. ▪ (180X magnification is possible with the MSZ5420-N eyepiece)
MSZ5010-N	▪ Two widefield eyepieces, 10X magnification
MSZ5419	▪ Dark-field condenser for stereo microscopes with transmitted light illumination
MSZ5415	▪ Stage micrometer for stereo microscopes
MSZ5416-N	▪ Micrometer eyepiece 10X
MSZ5417-N	▪ Micrometer eyepiece 20X
MSZ5420-N	▪ Two widefield eyepieces, 20X magnification
MSZ5020-N	▪ Incident illumination for MSZ5000-IL-TL and MSZ5000-T-IL-TL
MSZ5050	▪ Swivelling stand

17 Stereo zoom microscopes MSZ5000-T-LED-SET

The purchase of our microscope sets offers a convenient solution to acquire several products needed for photo and video microscopy in a single purchase. This not only saves the effort of searching for and comparing each product individually but also reduces the number of deliveries and packages. The devices are also perfectly coordinated.

The MBL4000-T-LED-SET consists of four products:

- MSZ5000-T-IL-TL-LED stereo microscope
- Microscope camera MKVT8
- MKTV display
- C-mount adaptor

Stereo zoom microscope MSZ5000-T-IL-TL-LED:

- Can be connected to a microscope, photo or video camera
- Large working distance
- Incident and transmitted light (LED)
- Stepless zoom 7X to 45X total magnification
- Attachment lenses optionally available for adjusting the maximum magnification or for further magnification of the working distance
- Wide range of accessories

Directly to KRÜSS-Shop Microscope-Set

Microscope camera with 1/1.8" CMOS sensor:

- Resolution of 3840 x 2160 pixels
- USB 3.0 interface for PC connections (cable included)
- HDMI interface (HDMI cable included)
- USB interface for USB mouse or Wi-Fi adaptor (both included)
- Connection to PC via WLAN possible
- Live image, image recording and video function
- Integrated software & additional PC software
- Storage of image and video files on SD card (included)

The Full HD display has an HDMI interface for connection to the MKTV camera:

- 11.8" 1080p IPS LC display
- Resolution of 1920 x 1080 pixels (HD)

C-Mount-Adaptor:

- Adaptor with C-mount thread to connect a camera with C-mount thread (MK12 or MKTV8) to a microscope with 23.2 mm phototube

18 Stereo zoom microscopes MSZ5000-T Series (with Tube)

The zoom stereo microscope with tube is ideal for the professional examination of electronics, precision mechanics, plastics and biological samples. It is used for inspection, assembly, analysis, soldering, polishing and fine machining – an excellent tool for quality control. The large zoom range, the large working distance and the wide depth of field make it very comfortable to work in many areas. It offers a continuous zoom from 0.7X to 4.5X. The models have a photo and video tube and can be used for microscope photography or video recording. This makes it possible to document results or record test series, as is the case in quality control in the food industry. The robust metal housing facilitates reliable work even in harsh environments. Various eyepieces and attachment lenses for adjusting magnification and working distance are available as accessories.

Stereo microscope with photo and video tube and stepless zoom

Basic features:

- Can be connected to a microscope, photo or video camera
- Large working distance
- Incident and transmitted light (LED)
- Stepless zoom 7X to 45X total magnification
- Attachment lenses optionally available for adjusting the maximum magnification or for further magnification of the working distance
- Wide range of accessories

18.1 Basic technical data stereo zoom microscope MSZ5000-T Series with photo and video tube

Specification	Model: MSZ5000-T	Model: MSZ5000-T-IL-TL-LED	Modell MSZ5000-T-RL
MICROSCOPE HEAD	▪ 45° angled view, Symmetrical eye distance adjustment 54-76 mm, dioptre compensation on both sides ▪ Third tube for connecting photo and video camera		
EYEPIECES	▪ 10X widefield eyepieces, field number: 20		
DIAMETER OF THE FIELD OF VIEW	▪ 32.8 mm – 5.1 mm		
OBJECT FIELD DIAMETER	▪ 28.6 mm – 4.44 mm		
OBJECTIVES	▪ 0.7-4.5x zoom objectives, stepless		
MAGNIFICATION	▪ 7X – 45X, optionally expandable to 14X – 90X with 20X eyepieces		
WORKING DISTANCE	▪ Approx. 90 cm		
ILLUMINATION	▪ - - - - - - - -	▪ 5V 3W, with incident and transmitted light (LED); steplessly variable	▪ With incident light (LED ring illumination))
STAND	▪ Robust metal stand		
DIMENSIONS/IP CODE/ WEIGHT	▪ Microscope (W x H x D): 200 mm x 390 mm x 310 mm; IP 20		
	▪ 4.2 kg	▪ 7 kg	▪ 4.5 kg
OPERATING VOLTAGE	▪ - - - - - - - --	▪ 100-240 VAC	▪ External Mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt
RATED FREQUENCY	▪ - - - - - - - -	▪ 50/60 Hz	▪ 50/60 Hz

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18.2 Additional accessories stereo zoom microscope MSZ5000-T Series with photo and video tube

Item number	Articles
MK12	▪ 12.0-megapixel microscope camera with 1/2.33" CMOS sensor, standardized USB 2.0 interface and PC software, resolution of 4000 x 3000 pixels (4k)
MKTV8	▪ 8.0-megapixel microscope camera 1/1.8" CMOS sensor, with HDMI, USB 3.0 & WLAN connection, SD card ▪ Resolution 3840 x 2160 pixels (4k), integrated software and additional PC software inclusive
MML2047	▪ C-mount adaptor with eyepiece for microscopes with photo and video tube (23.2 mm tube)
MKTV-DISPLAY	▪ Full-HD display (11.8"), Resolution of 1920 x 1080 pixels (HD), HDMI interface for MKTV camera
LDR72	▪ LED daylight ring light with 72 LEDs
MSZ5405-N	▪ 0.5X attachment lens ideal for doubling the working distance. Halves the magnification.
MSZ5418-N	▪ 2X attachment lens, the attachment lens is ideal for increasing magnification – reduces the working distance to the object that being examined. For magnification from 14X – 90X. (180X magnification is possible with the MSZ5420-N eyepiece)
MSZ5010-N	▪ Two widefield eyepieces, 10X magnification
MSZ5419	▪ Dark-field condenser for stereo microscopes with transmitted light illumination
MSZ5415	▪ Stage micrometer for stereo microscopes
MSZ5416-N	▪ Micrometer eyepiece 10X
MSZ5417-N	▪ Micrometer eyepiece 20X
MSZ5420-N	▪ Two widefield eyepieces, 20X magnification
MSZ5020-N	▪ Incident illumination for MSZ5000-IL-TL and MSZ5000-T-IL-TL
MSZ5050	▪ Swivelling stand

Directly to KRÜSS-Shop Microscopes accessories

19 Stereo zoom microscopes MSZ5000 Series (with swivelling stand)

The zoom stereo microscope with swivelling stand is ideal for the professional examination of electronics, precision mechanics, plastic products and biological samples. Swivelling stand microscopes offer maximum working distance and flexibility. Suitable for viewing and analysing larger specimens. Despite the large working distance, a very good resolution is offered. Also ideal for precise testing of circuit boards or for soldering and repairs. The large zoom range, the large working distance and the wide depth of field make it very comfortable to work in many areas. It offers a continuous zoom 0.7X to 4.5X magnification. The MSZ5000-T-S and MSZ5000-T-S-RL microscopes have a photo and video tube and can be used for microscope photography or video recording. The robust metal housing facilitates reliable work even in harsh environments. Various magnification eyepieces and attachment lenses for adjusting magnification and working distance are available as accessories.

Basic features:

- Large working distance
- Infinitely variable zoom 7X to 45X total magnification
- Attachment lenses optionally available for adjusting the maximum magnification or further magnification of the working distance
- Wide range of accessories

Stereo microscope with swivelling stand, infinitely variable zoom, can also be configured with photo and video tube

19.1 Basic technical data for the MSZ5000 Series stereo zoom microscope (with swivelling stand)

Specification	Model: MSZ5000-S	Model: MSZ5000-S-RL	Model: MSZ5000-T-S	Model: MSZ5000-T-S-RL
MICROSCOPE HEAD	▪ 45° angled view Symmetrical eye distance adjustment 51-75 mm ▪ Dioptre compensation on both sides		▪ 45° angled view Symmetrical eye distance adjustment 51-75 mm ▪ Dioptre compensation on both sides	
EYEPIECES	▪ 10X widefield eyepieces, field number: 20			
DIAMETER OF THE FIELD OF VIEW	▪ 32.8 mm – 5.1 mm			
OBJECT FIELD DIAMETER	▪ 28.6 mm – 4.44 mm			
OBJECTIVES	▪ 0.7-4.5x zoom objectives, stepless			
MAGNIFICATION	▪ 7X – 45X, optionally expandable to 14X – 90X with 20X eyepieces			
WORKING DISTANCE	▪ Approx. 90 cm			
ILLUMINATION	▪ - - - - - - - -	▪ With incident light (LED ring illumination)	▪ - - - - - - - -	▪ With incident light (LED ring illumination))
STAND	▪ Robust metal stand			
DIMENSIONS/IP CODE/ WEIGHT	▪ Microscope (W x H x D): 300 mm x 450 mm x 310 mm; IP 20			
	▪ 15.5 kg	▪ 15.8 kg	▪ 16 kg	▪ 16.3 kg
OPERATING VOLTAGE	▪ - - - - - - - --	▪ External Mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt	▪ - - - - - - - -	▪ External Mains adaptor (LDR72): 100-240 VAC LDR72: 12 Volt
RATED FREQUENCY	▪ - - - - - - - -	▪ 50/60 Hz	▪ - - - - - - - -	▪ 50/60 Hz

19.2 MSZ5000 Series stereo zoom microscope accessories (with swivelling stand)

The accessories for the MSZ5000 series stereo zoom microscope with swivelling stand are identical to the accessories for the MSZ5000 series and the MSZ5000 series with photo and video tube.

19.3 Video stereo zoom microscope MSZ5000-S Model with swivelling stand

SCAN ME

Flexible microscope cameras deliver brilliant images

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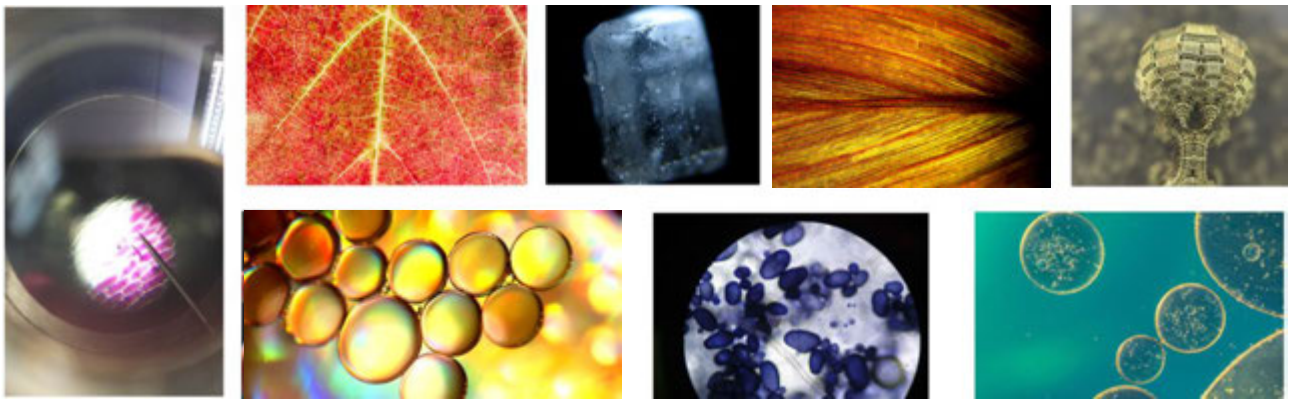

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20 KRÜSS microscope cameras

Microscope cameras from KRÜSS produces brilliant images with good resolution and depth of field. Tiny structures of surfaces, cells, tissue or bacteria can be imaged, examined, displayed and documented. The microscope cameras can be positioned quickly and easily, and the microscope images of specimens can be focused rapidly. This also simplifies the examination of moving objects. Another advantage of these cameras are variable exposure times and high refreshing frame rates. These features make them a powerful analytical tool not only for laboratories and quality control.

21 Krüss microscope complete sets with camera and display

Purchasing a matching microscope set saves not only the effort of searching out and comparing each product individually but it also reduces the number of deliveries.
The microscope cameras in the KRÜSS complete sets are equipped with the latest CMOS technology and offer high sensitivity and low dark noise. The integrated software allows you to edit the microscope image. This guarantees brilliant, detailed and high-contrast images.

Stereo microscope

MSZ5000-T-LED-SET

SET consisting of four products with the objectives: 0.7X - 4.5X

- Stereomicroscope
- MSZ5000-T-IL-TL-LED
- Microscope camera MKTV8 model
- MKTV display
- C-mount adapter

Trinocular microscope
MBL2000-T-LED-SET

SET consisting of four products with the objectives: 4X, 10X, 40X, 100X

- Trinocular microscope MBL2000-T-LED
- Microscope camera MKTV8 model
- MKTV display
- C-mount adapter

Trinocular microscope
MBL4000-T-LED-SET

SET consisting of three products with the objectives: 4X, 10X, 20X, 40X, 100X

- Trinocular microscope MBL4000-T-LED
- Microscope camera MKTV8 model
- MKTV display

Microscope images and videos open up completely new opportunities

Microscope photos and videos are being used more and more often, for digital documentation and for quality assurance. They are often used in laboratories in scientific fields and for documentation in quality assurance or audits. Tiny structures of surfaces, cells, tissue or bacteria can be examined and documented. The images are also suitable for scientific publications, teaching materials or for the visualisation and presentation of research results.

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22 Microscope camera MKTV8 Modell – Resolution 3840 x 2160 Pixel (4k)

Regardless of whether a monitor, television, projector, tablet or smartphone is being used, the HDMI and Wi-Fi interfaces of the MKTV8 microscope camera ensure that images are easily and safely transmitted to the desired display. The software integrated on the camera and a connectable USB mouse offer the option of editing the live image. It is also possible to create image and video files and save them directly on an SD card. A PC is not necessary for any of this.

The camera can be connected to a PC using the PC software included in the delivery package, or to a smartphone or tablet using the app. Thanks to the standardized USB 3.0 interface and the C-mount thread, the MKTV8 microscope camera can be connected to all commercially available microscopes, macroscopes, endoscopes and lenses.

Basic features:

- 8.0-megapixel camera with 1 / 1.8 "CMOS sensor
- Resolution of 3840 x 2160pixels (4k)
- USB 3.0 hi-Speed interface for PC (cable included)
- HDMI interface (HDMI cable included)
- USB interface for USB mouse or Wi-Fi adapter (both included)
- Live image, image recording and video function
- Integrated software & additional PC software
- Storage of image and video files on SD card (included)

8.0-megapixel microscope camera with 1/1.8" CMOS sensor, with WLAN connection and SD card

22.1 MKTV-display - Microscopy on the monitor

With the MKTV display, we also offer a full HD display that can be connected and attached to the MKTV camera. Accordingly, the display can be mounted directly on the camera, thus saving space.

Basic features:

- 11.8 " 1080p IPS LC display
- Resolution of 1920 x 1080 pixels
- HDMI interface for connection to MKTV camera

Areas of application:

- Live image of a connected video source via HDMI
- High-speed digital visualization of the microscope image
- With stand (not a standalone device)

Full HD display for connection to the MKTV camera

23 Microscope camera MK12 Model –Resolution 4000 x 3000 Pixel (4K)

12.0-megapixel camera with 1/2.33" CMOS sensor. With its standardized USB 2.0 interface and PC software, the MK12 microscope camera offers the possibility of creating high-resolution images and videos at an affordable price. The 12 megapixels, combined with the C-mount thread, enable the MK12 microscope camera to be used with all commercially available microscopes.
The software can be used to make live settings or optimum image settings and image measurements afterwards

12.0-megapixel microscope camera with 1/2.33" CMOS sensor

Basic features:

- Resolution of 4000 x 3000 pixels (4k)
- Connection via USB 2.0 possible
- Live image, image recording and video function
- PC software included
- Available as a set including C-mount adaptor

23.1 Video microscope camera

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24 Microscope camera MK2 Model –Resolution 1920 x 1080 Pixel

2.0-megapixel camera with 1/2.8" CMOS sensor. With its standardized USB 2.0 interface and PC software, the MK2 microscope camera offers the possibility of creating images and videos at the most affordable price. This camera is ideal for schoolchildren, students and those starting out in microscopy.
The software can be used to adjust to make live settings or optimum image settings and image measurements afterwards.

2,0 -megapixel microscope camera with 1/2.8" CMOS sensor

Basic features:

- Resolution of 1920 x 1080 Pixel
- Connection via USB 2.0 possible
- Live image, image recording and video function
- PC software included

Note: The MK2 microscope camera can only be connected to a 23.2 mm photo and video tube.

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25 Smartphone Adapter MML2043

Smartphone mount for secure attachment to microscope eyepieces or tubes – ideal for capturing sharp images and professional documentation. The mount ensures precise alignment of the smartphone camera lens with the eyepiece, minimizing shake and achieving optimal image sharpness. This adapter turns your smartphone into a powerful microscope camera system!

- This smartphone adapter enables direct attachment of any standard smartphone to the eyepiece of a microscope. This allows images and videos of the microscope view to be captured and saved using the smartphone.

Note: When attaching to a trinocular, the MML1105 eyepiece is separately required.

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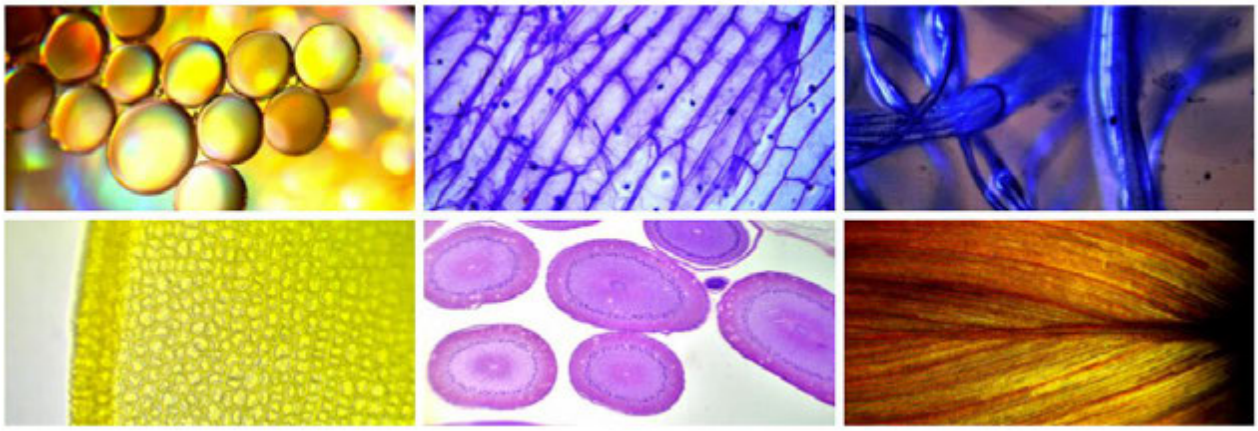

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26 Gemmological microscopes

Our gemstone microscopes are high-quality stereo microscopes and have been specially designed for the needs of gemmologists. Equipped with special accessories, they are ideal for the precise examination of minerals or for testing diamonds and coloured stones.

We offer different devices: in addition to vertical installation, horizontal devices can also be purchased or microscopes with a swivelling arm. Of course, it is also possible to convert our existing microscopes with microscope cameras into modern digital microscope systems. In addition to the usual microscope components, many of our devices also have stone and cuvette holders as well as polarisation filters. Variable illumination devices are also possible; these types of illumination include bright and dark field microscopy and microscopy with incident light equipment.

A.KRÜSS has confidence in its devices and demonstrates this with the 5-year guarantee on the housing, optics and mechanics!

Directly to KRÜSS **Gemmology Shop**

27 Stereo zoom microscope KSW6000 model with tube, LED gooseneck illumination

The KSW6000 is a gemmological stereo microscope for the investigation of gemstones, precious stones and minerals. With an infinitely variable zoom in the range 0.7X – 4.5X, magnifications of up to 45x are possible. The microscope body can be tilted up to 38° and rotated up to 325°, ensuring customised alignment. The device is equipped with transmitted light and dark-field illumination, LED gooseneck illumination and a fluorescent lamp, which can be activated individually or in combination. As a trinocular microscope, a microscope camera can easily be connected for crystal-clear photos or videos.

Basic features:

- Gemmological microscopy with a magnification of 7x – 45x
- Magnification optionally extendable up to 180x (with 20x eyepiece pair and 2x auxiliary lenses)
- Fully rotatable Siedentopf trinocular head with 23 mm phototube and adjustable eye distance
- Widefield eyepiece pair with dioptre compensation
- Stereo zoom from 0.7x – 4.5x (zoom ratio: 6.4:1)
- Stone holder for positioning the gemstone to be investigated
- Can be tilted up to 38° and rotated 325°
- 6V/20W transmitted light dark-field illumination with aperture diaphragm
- LED gooseneck illumination
- 9W fluorescent lamp

38° tiltable with transmitted light and dark-field illumination, LED gooseneck illumination & fluorescent lamp included

28 Stereo zoom microscope KSW5000-T-LED model with tube

With its large zoom range, long working distance and high depth of field, this powerful stereo microscope is perfect for examining gemstones, as well as minerals and fossils. With photo tube, incident and transmitted light, dark-field illumination (dark-field condenser) and rotatable stone holder.

Stereo microscope with powerful zoom, has large working distance & high depth of field

Basic features:

- Continuous zoom with 7-45X magnification, expandable
- to 14-90X, when using 20X eyepieces and 2X auxiliary lens, a max. magnification 180X is possible
- High depth of focus
- 45° angled view, 360° rotatable
- 10X widefield eyepieces incl. eyecups, field number: 20
- Symmetrical eye distance adjustment 51-75 mm
- Dioptre adjustment on both sides
- Object field 28.6-4.44 mm
- Working distance: approx. 90 mm
- With infinitely variable incident and transmitted light,
- dark-field condenser and photo tube
- Rotatable stone holder, preparation clamps
- Contrast plate glass and black/white, interchangeable

29 Immersion microscope with zoom KSW5000-T-K-W model with tube

This premium stereo and zoom microscope is perfect for three-dimensional, laterally accurate and precise visualization of microscopic investigations. It offers the best resolution and excellent image quality in the large field of view and also enables larger working distances. This Stereo microscope from A.KRÜSS is ideal for gemstone identification and investigation as well as quality determination. With its horizontal design, it is particularly suitable for investigations in immersion liquids. Further fields of application are watchmaking, jewellery production, or tool making.

Stereomicroscope with large zoom range and large working distance enables examinations with large depth of field

Basic features:

- Basic equipment as KSW5000: (Stepless zoom with 7x-45x magnification, 45° inclined view, 360° rotatable, 10x widefield eyepieces incl. eyecups/field number 20, working distance approx. 90 mm, 2x dioptre adjustment on both sides, Symmetrical eye eyepieces distance adjustment 51-75 mm etc.)
- With phototube for microscope camera
- Horizontal design
- Cuvette for immersion liquid
- Cuvette table with rotatable stone holder
- Polarisation device and translucent glass
- Adjustable cold light sources with light guide, dark-field illumination, LED transmitted light
- Extension option for two-armed light guide
- With external 110 V to 240 V mains adaptor

Directly to KRÜSS **Gemmology Shop**

30 Stereo gemstone microscope KSW4000 Model

The KSW4000 model is a stereo gemstone microscope with incident and transmitted light, dark-field illumination (dark-field condenser) and rotatable stone holder. The excellent image quality of our high-quality optics makes this stereo microscope from A.KRÜSS the device of choice for many gemmological investigations. It delivers razor-sharp images over a large field of view. Also ideal for testing diamonds to determine colour, clarity, cut and carat weight.

Ideal for viewing the contours of low-contrast inclusions

Basic features:

- Magnifications 10x and 30x, optional 20x and 40x
- 45° angled view
- 10x widefield eyepieces
- Symmetrical eye distance adjustment
- With dioptre adjustment
- Nosepiece with 1X and 3X
- Incident and transmitted light (LED)
- Dark-field condenser
- Rotatable stone holder and specimen clamps
- Interchangeable glass and black/white contrast plate
- Power supply: 100 – 240 V
- Rechargeable battery for location-independent use
- Dust cover

31 Immersion microscope KSW4000-K-W model with flexible assembly

This microscope, suitable for horizontal or upright use, is ideal for examinations in immersion liquids. It is in demand when disturbing reflections on surfaces or stone facets need to be prevented. Other fields of application are watchmaking, jewellery manufacture and toolmaking. It can be used in an upright or horizontal position. The excellent image quality and its high-quality optics make these KRÜSS stereomicroscopes the instrument of choice in gemmology, biology, sample analysis or in the field of materials science. It delivers razor-sharp images over a large field of view. This is why these microscopes are also used as industrial microscopes or in production and quality control for precision mechanical and electronic components.

Microscope in horizontal design especially for investigations with immersion liquids.

Basic features:

- Basic configuration as KSW4000 mode
- Upright or horizontal alignment
- Cuvette for immersion liquid
- Cuvette table with rotatable stone holder
- Polarisation device and translucent glass
- Adjustable cold-light source with light guide
- Extension possibility for two-armed light guide

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