

METALLURGICAL MICROSCOPES

PROFESSIONAL
MEASURING



2020

KERN Pictograms



360° rotatable microscope head



Monocular Microscope
For the inspection with one eye



Binocular Microscope
For the inspection with both eyes



Trinocular Microscope
For the inspection with both eyes and the additional option for the connection of a camera



Abbe Condenser
With high numerical aperture for the concentration and the focusing of light



Halogen illumination
For pictures bright and rich in contrast



LED illumination
Cold, energy saving and especially long-life illumination



Incident illumination
For non-transparent objects



Transmitting illumination
For transparent objects



Fluorescence illumination
For stereomicroscopes



Fluorescence illumination for compound microscopes
With 100 W mercury lamp and filter



Fluorescence illumination for compound microscopes
With 3 W LED illumination and filter



Phase contrast unit
For a higher contrast



Darkfield condenser/unit
For a higher contrast due to indirect illumination



Polarising unit
To polarise the light



Infinity system
Infinity corrected optical system



Zoom magnification
For stereomicroscopes



Parallel optical system
For stereomicroscopes, enables fatigue-proof working



Integrated scale
In the eyepiece



SD card
For data storage



USB 2.0 digital camera
For direct transmitting of the picture to a PC



USB 3.0 digital camera
For direct transmitting of the picture to a PC



WLAN data interface:
For transmitting of the picture to a mobile display device



HDMI digital camera
For direct transmitting of the picture to a display device



PC software
To transfer the measurements from the device to a PC.



Automatic temperature compensation
For measurements between 10 °C and 30 °C



Protection against dust and water splashes IPxx
The type of protection is shown by the pictogram.



Battery operation
Ready for battery operation. The battery type is specified for each device.



Battery operation rechargeable
Prepared for a rechargeable battery operation



Mains adapter
230V/50Hz in standard version for EU. On request GB, AUS or USA version.



Power supply
Integrated in microscope. 230V/50Hz standard EU. More standards e.g. GB, AUS or USA on request.



Package shipment
The time required to manufacture the product internally is shown in days in the pictogram.

Abbreviations

C-Mount	Adapter for the connection of a camera to a trinocular microscope
FPS	Frames per second
H(S)WF	High (Super) Wide Field (Eyepiece with high eye point for wearers of glasses)
LWD	Long Working Distance
N.A.	Numerical Aperture

SLR camera	Single-Lens Reflex camera
SWF	Super Wide Field (Field number at least \varnothing 23 mm for 10× eyepiece)
W.D.	Working Distance
WF	Wide Field (Field number up to \varnothing 22 mm for 10× eyepiece)

Why you should choose a KERN microscope now!

For 175 years, KERN & SOHN has been synonymous with high precision weighing and measuring technology. This claim is the driving force for the development of our microscope and refractometer ranges.

Thanks to consistent customer focus paired with smart ideas and the latest available technology we are proud to be suppliers of high-quality, durable top microscopes and refractometers, which help you to be as efficient as possible in your daily work.

When developing our microscopes we have concentrated on the very best optical quality and have used only high-quality glass and the latest technologies to achieve this. The high-quality Philips halogen and modern LED illumination produce razor-sharp images with high contrast and which will impress you with their brilliant true-colour display – you must have noticed this yourself.

Your advantages:

- all mechanical parts have been designed for a long service life
- special attention has been given to the ergonomics of our microscopes, as this allows the user to work for several hours in a comfortable position which does not cause fatigue
- our microscopes are fully-equipped and can be used immediately
- Highlight for 2020: die KERN camera software – you will be amazed at how user-friendly and intuitive it is, a high-quality tablet camera as well as a comprehensive range of calibration services for refractometers
- and much more...

Use our practical “Check list for microscopes and refractometers”, which may help you to quickly determine specifications for the future instrument. Together with our KERN product specialist you can choose the right product for you.

If there is no suitable product in the standard range, for example, then we will of course configure an individual microscope for you.

Our aim is to develop a market-driven product solution, so with our microscope and refractometer range, the saying holds true: good quality at a competitive price! This is what we stand for and work towards, every day!

With our current 2020 product range you can benefit from improved quality and a clear reduction in price, which we have been able to achieve through more efficient production methods and increased global sales of our microscopes and refractometers and of course we pass this straight on to you

Do you have any questions about our range of microscopes and refractometers?

Your KERN customer consultants are available at any time to help you further.

I hope that you enjoy working efficiently with our KERN Optics products.



Albert Sauter, Managing Director

Your advantages

fast

- 24 hour dispatch service for products in stock – order today, on its way tomorrow
- Sales & service hotline from 8:00 am to 5:00 pm

reliable

- Up to 3 years warranty
- Certified QM system
DIN EN ISO 9001

versatile

- One-stop shopping: from microscope through to refractometer – everything from one supplier
- Quick as a flash, find the product you want with the “Quick-Finder” at www.kern-sohn.com



Order hotline
+49 7433 9933-0



E-mail order
info@kern-sohn.com



www.kern-sohn.com
Information on current product availability, product data sheets, user instructions, useful knowledge, technical glossary and much for you to download, practical topic areas, which will guide you to the right product in your industry as well as a microscopes and refractometers search engine.



Service hotline
+49 7433 9933-199



Fax Order
+49 7433 9933-146



Online shop
www.kern-sohn.com



Our team of consultants will assist you
from Monday to Friday
from 8:00 am to 5:00 pm

2 Metallurgical microscopes





Illumination unit with filter disc



Stage and objectives

LAB LINE MET

The metallurgical reflected light microscope for material testing and surface testing, as well as quality assurance in industry

Features

- The KERN OKM is an excellent metallurgical reflected light microscope, e.g. for surface quality testing of raw materials and finished products in industry
- The strong, continuously dimmable 30 W halogen reflected illumination unit (Philips) ensures excellent, high-contrast images
- The illumination unit with an integrated 5-slot filter wheel for blue, green, yellow, grey and blank means that you can quickly change the colour filter for different contrast views
- A large mechanical stage for reflected illumination applications is configured as standard. The coarse and fine focusing knob on both sides guarantees optimal adjustment and focusing of your sample
- A simple polarising unit (analyser and polariser) is included with delivery
- A large selection of different eyepieces, objectives and a polarising unit are also available
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- A C-mount adapter is required to connect a camera to the trinocular version. You can select this adapter from the following model outfit list
- Please find detailed information in the following model outfit list

Scope of application

- Metallurgy, material testing, quality assurance

Applications/Samples

- Opaque and thick samples, workpieces (surfaces, fold lines, coatings)

Technical data

- Infinity optical system
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: One-sided
- Overall dimensions W×D×H 440×200×460 mm
- Net weight basic configuration approx. 8 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
KERN OKM 172*	Binocular	HWF 10×/ø 18 mm	Infinity Plan	5×/10×/ LWD 20×/	30 W Halogen (incident)	1790,-
KERN OKM 173	Trinocular	HWF 10×/ø 18 mm	Infinity Plan	LWD40×	30 W Halogen (incident)	1890,-

*ONLY WHILE STOCKS LAST

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OKM 172	OKM 173		
Eyepieces (23,2 mm)	HWF 10×/∅ 18 mm	✓	✓	OBB-A1403	45,-
	HWF 10×/∅ 18 mm (reticule 0,1 mm) (non-adjustable)	✓	✓	OBB-A1349	60,-
	WF 5×/∅ 20 mm	○	○	OBB-A1355	55,-
	WF 12,5×/∅ 14 mm	○	○	OBB-A1353	75,-
	WF 16×/∅ 13 mm	○	○	OBB-A1354	45,-
Infinity Plan achromatic objectives (no cover glass)	5×/0,11 W.D. 12,10 mm	✓	✓	OBB-A1268	105,-
	10×/0,25 W.D. 4,75 mm	✓	✓	OBB-A1244	195,-
	20×/0,40 (spring-loaded) W.D. 2,14 mm	○	○	OBB-A1251	265,-
	40×/0,65 (spring-loaded) W.D. 0,45 mm	○	○	OBB-A1258	290,-
Infinity Plan achromatic objectives (no cover glass) for long working distance	20×/0,40 W.D. 8,35 mm	✓	✓	OBB-A1252	290,-
	40×/0,65 W.D. 3,90 mm	✓	✓	OBB-A1259	405,-
	50×/0,70 (spring-loaded) W.D. 1,95 mm	○	○	OBB-A1266	450,-
	80×/0,80 (spring-loaded) W.D. 0,85 mm	○	○	OBB-A1271	500,-
Binocular tube	<ul style="list-style-type: none"> • Siedentopf 30° inclined/360° rotatable • Interpupillary distance 50 – 75 mm • Diopter adjustment: One-sided 	✓	○	OBB-A1130	
Trinocular tube	<ul style="list-style-type: none"> • Siedentopf 30° inclined/360° rotatable • Interpupillary distance 50 – 75 mm • Light distribution 80:20 • Diopter adjustment: One-sided 	○	✓	OBB-A1346	
Mechanical stage	<ul style="list-style-type: none"> • Stage size W×D 200×140 mm • Travel 76×52 mm • Coaxial coarse and fine focusing knobs 	✓	✓		
Illumination	30 W Halogen spare bulb (incident)	✓	✓	OBB-A1372	35,-
Reflected illumination unit	5-filter unit (Blue, Green, Yellow, Grey, Empty)	✓	✓		
	Polarising unit (Incl. analyser and polariser slide)	✓	✓		
C-Mount	1×		○	OBB-A1514	100,-
	0,5× (focus adjustable)		○	OBB-A1515	160,-

✓ = Included with delivery

○ = Option



Stage OKN



Stage OKO



Illumination unit

PROFESSIONAL LINE MET

The fully-equipped reflected and transmitted light microscope for numerous applications in metallurgy

Features

- The KERN OKN and OKO series are professional, versatile, metallurgical microscopes, which are used in testing metals and analysing surfaces
- You can choose between two reflected illumination units: A 50 W halogen reflected illumination unit or a premium illumination unit with stunning 100 W reflected illumination for powerful performance
- A height-adjustable 1,25 Abbe condenser which can be centred as well as a field diaphragm are available for the transmitted light variants (KERN OKO series), for complete professional Koehler illumination
- The KERN OKO transmitted illumination variant is fitted with an open, mechanical stage, as standard. On the other hand, the KERN OKN reflected illumination variant has a closed, mechanical stage, as standard
- A simple polarising unit (analyser and polariser) is included with delivery
- A large selection of accessories, such as, for example, a Butterfly tube, eyepieces and further objectives are available for longer working distances
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- A C-Mount adapter is required to connect a camera. You can select this adapter from the following model outfit list
- Please find detailed information in the following model outfit list

Scope of application

- Metallurgy, material testing, quality assurance

Applications/Samples

- Opaque and thick samples, workpieces (surfaces, fold lines, coatings)

Technical data

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 550×200×460 mm
- Net weight basic configuration approx. 14,5 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
OKN 175*	Trinocular	WF 10×/∅ 18 mm	Infinity Plan	5×/10×/LWD20×/ LWD40×	50 W Halogen (incident)	2230,-
OKO 176*	Trinocular	WF 10×/∅ 18 mm	Infinity Plan	5×/10×/LWD20×/ LWD40×/100×	50 W Halogen (incident) + 20 W (transmitted)	2770,-
OKN 177	Trinocular	WF 10×/∅ 18 mm	Infinity Plan	5×/10×/LWD20×/ LWD40×	100 W Halogen (incident)	2450,-
OKO 178	Trinocular	WF 10×/∅ 18 mm	Infinity Plan	5×/10×/LWD20×/ LWD40×/100×	100 W Halogen (incident) + 20 W (transmitted)	2990,-

* ONLY WHILE STOCKS LAST

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OKN 175	OKO 176	OKN 177	OKO 178		
Eyepieces (23,2 mm)	WF 10×/∅ 18 mm	✓✓	✓✓	✓✓	✓✓	OBB-A1347	40,-
	WF 10×/∅ 18 mm (reticule 0,1 mm) (adjustable)	✓	✓	✓	✓	OBB-A1350	90,-
	WF 5×/∅ 20 mm	○	○	○	○	OBB-A1355	55,-
	WF 12,5×/∅ 14 mm	○	○	○	○	OBB-A1353	75,-
	WF 16×/∅ 13 mm	○	○	○	○	OBB-A1354	45,-
Infinity Plan objectives (no cover glass)	5×/0,11 W.D. 6,73 mm	✓	✓	✓	✓	OBB-A1268	105,-
	10×/0,25 W.D. 4,19 mm	✓	✓	✓	✓	OBB-A1244	195,-
	20×/0,40 (spring-loaded) W.D. 2,14 mm	○	○	○	○	OBB-A1251	265,-
	40×/0,65 (spring-loaded) W.D. 0,45 mm	○	○	○	○	OBB-A1258	290,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,12 mm		✓		✓	OBB-A1241	315,-
Infinity Plan objectives (no cover glass) for long working distance	20×/0,40 W.D. 8,35 mm	✓	✓	✓	✓	OBB-A1252	290,-
	40×/0,65 W.D. 3,90 mm	✓	✓	✓	✓	OBB-A1259	405,-
	50×/0,70 (spring-loaded) W.D. 1,95 mm	○	○	○	○	OBB-A1266	450,-
	80×/0,80 (spring-loaded) W.D. 0,85 mm	○	○	○	○	OBB-A1271	500,-
Trinocular tube	<ul style="list-style-type: none"> • Siedentopf 30° inclined/360° rotatable • Interpupillary distance 50 – 75mm • Light distribution 100:0 • Diopter adjustment: Both-sided 	✓	✓	✓	✓		
	<ul style="list-style-type: none"> • Butterfly 30° inclined/360° rotatable • Interpupillary distance 50 – 75 mm • Light distribution 100:0 • Diopter adjustment: Both-sided 	○	○	○	○	OBB-A1382	520,-
Mechanical stage for reflection	<ul style="list-style-type: none"> • Stage size W×D 200×140 mm • Travel 78×55 mm • Stage fast lowering unit • Stage Up-Down moving range: max. 50 mm 	✓		✓			
Mechanical stage for transmitted illumination	<ul style="list-style-type: none"> • Stage size W×D 175×145 mm • Travel 78×55 mm • Coaxial coarse and fine focusing knobs 		✓		✓		
Stage plate	Plate for sample placement	✓	✓	✓	✓		
Glass plate	Glass plate		○		○	OBB-A1378	50,-
Reflected illumination unit	Polarising unit (Incl. analyser, polariser and blue filter slide)	✓	✓	✓	✓		
Condenser	Abbe N.A. 1,25 (aperture diaphragm)		✓		✓	OBB-A1380	100,-
Illumination	20 W Halogen spare bulb (transmitted)		✓		✓	OBB-A1370	25,-
	50 W Halogen spare bulb (incident)	✓	✓			OBB-A1207	19,-
	100 W Halogen spare bulb (incident)			✓	✓	OBB-A1377	35,-
Polarising unit	for transmitted illumination		✓		✓	OBB-A1470	135,-
Colour filters for transmitted illumination	Blue		✓		✓		
	Green		○		○	OBB-A1188	19,-
	Yellow		○		○	OBB-A1165	19,-
	Grey		○		○	OBB-A1183	19,-
C-Mount	1×	○	○	○	○	OBB-A1140	100,-
	0,57× (focus adjustable)	○	○	○	○	OBB-A1136	160,-

✓ = Included with delivery

○ = Option



Specimen stage and illumination unit



Analyser/Polariser

LAB LINE MET

The inverted metallurgical microscope for professional applications

Features

- The KERN OLM range is part of the range of inverted microscopes and stands out through its design which is ergonomic, robust and extremely stable. This range, with its large working distance is, for example, particularly suitable for surface quality testing of raw materials and finished products in industry
- Strong and continuously adjustable 50W halogen illumination unit ensures the optimum illumination of the materials to be tested
- As standard, the OLM range is fitted with a trinocular eyepiece tube
- A simple polarising unit (analyser and polariser) is included with delivery
- A large mechanical stage is included with delivery as standard. The coarse and fine focusing knob on both sides guarantees optimal adjustment and focusing
- Further options such as, for example, a large selection of objectives can be integrated as accessories
- A dust cover as well as user instructions are included with the delivery
- Please find detailed information in the following model outfit list

Scope of application

- Metallurgy, material testing, quality assurance

Applications/Samples

- Opaque and thick samples, workpieces (surfaces, fold lines, coatings)

Technical data

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 30° inclined
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 271×379×747 mm
- Net weight approx. 12,5 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
KERN						
OLM 171	Trinocular	HWF 10×/ø 22 mm	Infinity Plan	LWD5×/LWD10×/ LWD20×/LWD50×	50 W Halogen (incident)	3 190,-

Metallurgical inverted microscope KERN OLM-1

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OLM 171		
Eyepieces (30 mm)	HWF 10×/∅ 22 mm (adjustable)	✓	OBB-A1491	90,-
	HWF 10×/∅ 22 mm (reticule 0,1 mm) (adjustable)	✓	OBB-A1523	140,-
Infinity Plan achromatic objectives for long working distance	5×/0,13 W.D. 24,23 mm	✓	OBB-A1525	125,-
	10×/0,25 W.D. 18,48 mm	✓	OBB-A1526	185,-
	20×/0,40 W.D. 8,35 mm	✓	OBB-A1527	245,-
	50×/0,70 (spring-loaded) W.D. 1,95 mm	✓	OBB-A1528	320,-
	80×/0,80 (spring-loaded) W.D. 0,85 mm	○	OBB-A1530	480,-
	100×/0,90 (dry) W.D. 1,0 mm	○	OBB-A1531	720,-
Trinocular tube	<ul style="list-style-type: none"> • 30° inclined • Interpupillary distance 48-76 mm • Light distribution 100:0 • Diopter adjustment: Both-sided 	✓		
Mechanical stage	<ul style="list-style-type: none"> • Stage size W×D 210×180 mm • Travel 50×50 mm • Coaxial coarse and fine focusing knobs 	✓		
Illumination	50 W Halogen spare bulb (incident)	✓	OBB-A1207	19,-
Reflected illumination unit	Polarising unit (Incl. analyser, polariser and colour filter slide)	✓		
Colour filters for transmitted illumination	Blue	✓	OBB-A1510	19,-
	Green	○	OBB-A1511	19,-
	Yellow	○	OBB-A1512	19,-
	Grey	○	OBB-A1513	19,-
C-Mount	0,5×	○	OBB-A1515	185,-
	1×	○	OBB-A1514	120,-

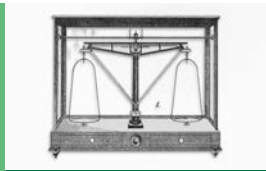
✓ = Included with delivery

○ = Option



1769

Ancestor Johann Jakob Sauter built the Hahn inclination scale out of iron, a foundation stone for weighing for the balance industry in Southern Germany



1844

KERN is founded – precision balances are produced



1863

A proud Gottlieb Kern with his staff



1880

Pharmaceutical balance with Aesculap



1923

Inflation – KERN wages are paid with self printed currency



1980

The electronic balance ousts mechanical devices



1994

Accredited DKD laboratory (ISO 17025)



2000

New premises in Balingen



2002

Existing QM system certification in accordance with DIN EN ISO 9001:2000 standards



2007

Approval for the manufacture of medical products (DIN EN 13485 and 93/42/EEC)



2008

Authorisation for initial verification by the manufacturer (2009/23/EC)



2009

Approval for the manufacture and sale of height rods (DIN EN 13485 and 93/42/EEC)



2012

Verification point for non-automatic balances and test weights.

New customer portal www.kern-sohn.com goes live



2014

Expansion of the product range to include optical instruments (microscopes and refractometers)



2015

Inauguration of Ziegelei 2.0 with computer-controlled high-bay warehouse



2017

Come with KERN into the digital future: Expansion of the model ranges compatible with Industry 4.0, as well as the related services



2019

Significant anniversary year! 25 years of accredited DKD laboratory 175 years of KERN & SOHN 250 years of balance manufacture in the Sauter family-owned company



2020

Construction of Ziegelei 3.0, extension of administration building