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that is situated in the Swabian Alb

KERN & SOHN GmbH  
Balances, Test weights, Microscopes,  
DAkkS calibration laboratory  
Ziegelei 1  
72336 Balingen  
Germany  
Tel. +49 7433 9933-0  
info@kern-sohn.com



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2022

MICROSCOPES & REFRACTOMETERS – for laboratory, industry and food

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# MICROSCOPES & REFRACTOMETERS

for laboratory, industry and food



OUT NOW:  
THE NEW  
**VIDEO  
MICROSCOPE**



# 20 22

PROFESSIONAL  
MEASURING

Do you have questions about  
our products?  
Our customer consultants  
will be pleased to assist you:



**Maren Möwert**  
Tel. +49 7433 9933-132  
Mobil +49 151 46143240  
maren.moewert@kern-sohn.com

DK, SE, FI, NO, PL, LV, LT, EE



**Mark Hauder**  
Tel. +49 7433 9933-310  
Mobil +49 160 3378426  
mark.hauder@kern-sohn.com

GR, CY, BG, HU, RO, SK, CZ, AL,  
Ex-Yugoslavia, GUS



**Aleksandar Delić**  
Tel. +49 7433 9933-120  
Mobil +49 151 11196197  
aleksandar.delic@kern-sohn.com

North America, Near- & Middle East,  
Africa, Asia, Oceania, TR



**Corinna Matthes**  
Tel. +49 7433 9933-215  
Mobil +49 151 44568364  
corinna.matthes@kern-sohn.com

Technical sales KERN Optics



**Ralf Gutbrod**  
Tel. +49 7433 9933-306  
optics@kern-sohn.com



**Helga Biselli**  
Tel. +49 7433 9933-188  
optics@kern-sohn.com



**Daniel Bopp**  
Tel. +49 7433 9933-205  
optics@kern-sohn.com



**Irmgard Russo**  
Tel. +49 7433 9933-208  
optics@kern-sohn.com

Technical Service



**James Nelson**  
Tel. +49 7433 9933-148  
james.nelson@kern-sohn.com

Sales & Marketing Manager



**Stephan Ade**  
Tel. +49 7433 9933-121  
Mobil +49 171 3060086  
ade@kern-sohn.com

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## KERN Pictograms

 <b>360° rotatable microscope head</b>	 <b>Parallel optical system</b> For stereomicroscopes, enables fatigue-proof working
 <b>Monocular Microscope</b> For the inspection with one eye	 <b>Integrated scale</b> In the eyepiece
 <b>Binocular Microscope</b> For the inspection with both eyes	 <b>SD card</b> For data storage
 <b>Trinocular Microscope</b> For the inspection with both eyes and the additional option for the connection of a camera	 <b>USB 2.0 digital camera</b> For direct transmitting of the picture to a PC
 <b>Abbe Condenser</b> With high numerical aperture for the concentration and the focusing of light	 <b>USB 3.0 digital camera</b> For direct transmitting of the picture to a PC
 <b>Halogen illumination</b> For pictures bright and rich in contrast	 <b>WLAN data interface:</b> For transmitting of the picture to a mobile display device
 <b>LED illumination</b> Cold, energy-saving and especially long-life illumination	 <b>HDMI digital camera</b> For direct transmitting of the picture to a display device
 <b>Incident illumination</b> For non-transparent objects	 <b>PC software</b> To transfer the measurements from the device to a PC.
 <b>Transmitting illumination</b> For transparent objects	 <b>Automatic temperature compensation</b> For measurements between 10 °C and 30 °C
 <b>Fluorescence illumination</b> For stereomicroscopes	 <b>Protection against dust and water splashes IPxx:</b> The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989+A1:1999+A2:2013
 <b>Fluorescence illumination for compound microscopes</b> With 100 W mercury lamp and filter	 <b>Battery operation</b> Ready for battery operation. The battery type is specified for each device.
 <b>Fluorescence illumination for compound microscopes</b> With 3 W LED illumination and filter	 <b>Battery operation rechargeable</b> Prepared for a rechargeable battery operation
 <b>Phase contrast unit</b> For a higher contrast	 <b>Plug-in power supply</b> 230V/50Hz in standard version for EU. On request GB, AUS or USA version.
 <b>Darkfield condenser/unit</b> For a higher contrast due to indirect illumination	 <b>Integrated power supply unit</b> Integrated in microscope. 230V/50Hz standard EU. More standards e.g. GB, AUS or USA on request.
 <b>Polarising unit</b> To polarise the light	 <b>Package shipment</b> The time required to manufacture the product internally is shown in days in the pictogram.
 <b>Infinity system</b> Infinity corrected optical system	
 <b>Zoom magnification</b> For stereomicroscopes	
 <b>Auto-focus</b> For automatic control of the focus level	

### Abbreviations

<b>C-Mount</b>	Adapter for the connection of a camera to a trinocular microscope	<b>SLR camera</b>	Single-Lens Reflex camera
<b>FPS</b>	Frames per second	<b>SWF</b>	Super Wide Field (Field number at least Ø 23 mm for 10× eyepiece)
<b>H(S)WF</b>	High (Super) Wide Field (Eyepiece with high eye point for wearers of glasses)	<b>W.D.</b>	Working Distance
<b>LWD</b>	Long Working Distance	<b>WF</b>	Wide Field (Field number up to Ø 22 mm for 10× eyepiece)
<b>N.A.</b>	Numerical Aperture		

## 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 2022: 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 2022 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](http://www.kern-sohn.com)


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 **Online shop**  
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 **E-mail order**  
[info@kern-sohn.com](mailto:info@kern-sohn.com)

 **Fax Order**  
+49 7433 9933-149

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


## Retailer information


### Sales conditions

**All prices are valid as of January 1st 2022** until a new version of the KERN catalogue is released. In Europe, all prices do not include the applicable V.A.T.

**At KERN there is no minimum order value.** For orders less than € 15.00 there is no re-sale discount available.

**Delivery Conditions:** we supply ex works Balingen, i.e. the transport costs are invoiced. With our contract logistics partners we always offer you shipping at a good rate. When shipping to islands or other more distant areas, or areas which are difficult to access, the transport costs may possibly be higher, please ask for details. Any goods supplied remain KERN's property until complete payment for the goods sold has been received.

 **Delivery** is usually via courier service.

 When you see this symbol by truck, please ask for prices.

### Extract from general terms and conditions :

Court of jurisdiction/Legal domicile: 72336 Balingen, Germany; Commercial register N°: HRB 400865, AG Stuttgart; Managing director: Albert Sauter. For the full Terms and Conditions, please refer to the website. [www.kern-sohn.com/en/kern/agbs.html](http://www.kern-sohn.com/en/kern/agbs.html)

**Price changes and product changes** are likely in individual cases due to product modifications as well as error.

**Sale or return:** within 14 days of purchase. Not valid for custom processes, such as, for example, special orders.

### Warranty:

- 3 years for products with list price ≥ € 400.00
- 2 years for products with list price < € 400.00
- Does not apply to consumables such as batteries, rechargeable battery packs, illumination units, etc.

### Services

**KERN DirectCash:** The quick, secure COD procedure for protection against non-payment. With the KERN DirectCash COD system, you can safely deliver orders to end customers with unknown credit rating, with no risk of non-payment. Please request further details on this procedure.

### Hire Purchase

Financing is available using KERN hire purchase – easy and convenient. Hire Purchase gives you the option of purchasing any product from the range against a simple monthly installment. The product value is financed over the period of the agreement. On payment of the last installment, the ownership of the contract item automatically transfers from the contractor to the contractee. The Hire Purchase Agreement can – if you so choose – be set for a period of between one and five years. This package includes the transfer of items as well as the guarantee for the entire transfer period. Compared with buying the product, KERN hire

purchase offers the advantage that the initial financial investment is largely unnecessary. This is particularly relevant when purchasing a number of products, for example when refitting a laboratory, a company department or a hospital ward. In addition the monthly installments constitute a direct cost and the item does not have to be capitalised by the purchaser.

### After-Sales-Service

**Repair services** within 1 week at our plant in Balingen, transportation costs are additional. In urgent cases, if requested by customer, a replacement device will be provided until all repairs are completed; please ask.

**Price reduction on a new device:** if repair costs exceed the current value of the defective device, a new device will be offered at a discount price. This offer is valid only up to 2 years after warranty expiration.

**Spare parts service** within 48 hours, transportation costs are additional.

### Marketing support

**KERN catalogues, brochures, branch prospectuses – your own personalised marketing tools**

This catalogue and branch prospectuses are available free of charge. A neutral version of the catalogue, without the KERN address imprint, is also available for your marketing activities free of charge.

On demand, your company logo and address can be printed on the back of the KERN catalogue free of charge. In this way you have your own individual marketing tool. The KERN catalogue branch prospectuses are available in the following languages: DE, EN, FR, IT, ES.

### Important notice

#### Humidity

Our models are not suitable for rooms with a high level of air humidity (condensing). Please observe the applicable electrical regulations.

### Miscellaneous

#### Product pictures printed in catalogue

All product pictures contained in our catalogue show devices similar to our products. Please note that possible technical innovations might be the cause of such deviations.

#### Accessory for optical instruments

Further extensive accessories for our optical instruments you can also find in the KERN Online shop on [www.kern-sohn.com](http://www.kern-sohn.com)

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# NEWS 2022

Innovative products in familiar  
KERN quality:



## Video microscope with auto-focus KERN OIV-6

Expansion of our video microscope range. The integrated auto-focus makes quality control even more efficient.

Further details ► page 64  
only € 4440,-



## Digital desktop refractometer KERN ORL-B

Specially for laboratory use, these digital desktop refractometers offer above-average measurement accuracy and simplify sample analysis through their particularly large multi-function display.

Further details ► page 109  
only € 780,-

## Digital hand-held refractometer KERN ORM-B/ORM-R

The new range of our digital hand-held refractometers will impress you with its simple operation, flexible use and reliable measuring results.

Further details ► page 103  
from € 340,-



# HIGHLIGHTS 2022



## KERN Calibration service

Your partner for calibration services, management of test equipment and support

Further details ▶ page 110  
only € 109,-

## KERN Microscope VIS software

The perfect software for measuring, counting and documenting your samples



Further details ▶ page 90

Included with every KERN camera delivery

## Analogue beer refractometer KERN ORA-AL

This refractometer range provides several standard measuring scales for monitoring the brewing process. A sensible alternative to the beer spindle.



Further details ▶ page 97  
from € 80,-

## LED phase contrast microscopes OBL-14 · 15/OBN-13

Our phase contrast microscopes are now also available as LED variants which are even more user friendly.

Further details ▶ page 20/22  
from € 1420,-





# Microscopes

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**Ralf Gutbrod**  
Technical sales KERN Optics

Tel. +49 7433 9933-306  
optics@kern-sohn.com

# 1 Compound microscopes

Compound, Phase contrast, Digital, Fluorescence and Inverted microscopes







**Note**

Please request special conditions for a classroom set



Objectives OBS



OBS 101



OBS 104



OBS 106

**EDUCATIONAL LINE**

The school microscope – For the first steps in microscopy and for use in biology lessons

**Features**

- The KERN OBS range is a solid and simple school microscope range, which is easy to use due to its intuitive control elements
- The continuously dimmable 0.5W LED guarantees optimum illumination of the samples and also ensures long service life. Mobile use is also no problem through the use of rechargeable batteries
- The simple 0.65 condenser on the OBS 101 (condenser disc) and the OBS 102 (fixed condenser) ensures the very best concentration of light and illumination of the sample. The OBS 103, 104, 105 and 106 models have a 1.25 Abbe condenser which

is height-adjustable and can therefore be focussed and has an aperture diaphragm, which ensures the very best concentration of light

- To focus the object, all models have a coarse and fine focusing knob on both sides. The mechanical stage enables you to work with the samples and move them rapidly (only for OBS 105, 106)
- A large selection of different eyepieces and objectives is also available
- Please find detailed information in the following model outfit list

**Scope of application**

- Primary school, secondary school, training, hobby use

**Applications/Samples**

- Translucent, thin, high-contrast, less complex samples (e.g. plant tissue, coloured cells/parasites)

**Technical data**

- Finite optical system (DIN)
- Triple (OBS 101, 102) or quadplex (OBS 103, 104, 105, 106) nosepiece
- Tube 45° (OBS 101, 102, 103, 105) or 30° (OBS 104, 106) inclined/360° rotatable
- Diopter adjustment: Both-sided (for binocular models)
- Overall dimensions WxDxH 130x300x310 mm
- Net weight approx. 3 kg

STANDARD



not OBS 101, 102

Model KERN	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	Stage	
OBS 101	Monocular	WF 10x/φ 18 mm	Achromatic	4x/10x/40x	0,5W LED (transmitted) (battery incl., rechargeable)	fix	185,-
OBS 102	Monocular	WF 10x/φ 18 mm	Achromatic		0,5W LED (transmitted) (battery incl., rechargeable)	fix	195,-
OBS 103	Monocular	WF 10x/φ 18 mm	Achromatic		0,5W LED (transmitted) (battery incl., rechargeable)	fix	199,-
OBS 104	Binocular	WF 10x/φ 18 mm	Achromatic		0,5W LED (transmitted) (battery incl., rechargeable)	fix	280,-
OBS 105	Monocular	WF 10x/φ 18 mm	Achromatic		0,5W LED (transmitted) (battery incl., rechargeable)	mechanical	245,-
OBS 106	Binocular	WF 10x/φ 18 mm	Achromatic		0,5W LED (transmitted) (battery incl., rechargeable)	mechanical	320,-

Model outfit		Model KERN						Order number	Price/piece excl. of VAT ex works €
		OBS 101	OBS 102	OBS 103	OBS 104	OBS 105	OBS 106		
<b>Eyepieces</b> (23,2 mm)	WF 10×/∅ 18 mm	✓	✓	✓	✓✓	✓	✓✓	OBB-A1473	30,-
	WF 16×/∅ 13 mm	○	○	○	○○	○	○○	OBB-A1474	30,-
	WF 20×/∅ 11 mm	○	○	○	○○	○	○○	OBB-A1475	30,-
	WF 10×/∅ 18 mm (with Pointer)	○	○	○	○	○	○	OBB-A1561	30,-
<b>Achromatic objectives</b>	4×/0,10 W.D. 18,0 mm	✓	✓	✓	✓	✓	✓	OBB-A1476	35,-
	10×/0,25 W.D. 7,0 mm	✓	✓	✓	✓	✓	✓	OBB-A1477	40,-
	40×/0,65 (spring-loaded) W.D. 0,53 mm	✓	✓	✓	✓	✓	✓	OBB-A1478	45,-
	60×/0,85 (spring-loaded) W.D. 0,1 mm	○	○	○	○	○	○	OBB-A1479	60,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,07 mm	○	○	○	○	○	○	OBB-A1480	65,-
<b>E-Plan objectives</b>	4×/0,10 W.D. 14,5 mm	○	○	○	○	○	○	OBB-A1562	40,-
	10×/0,25 W.D. 5,65 mm	○	○	○	○	○	○	OBB-A1563	55,-
	40×/0,65 (spring-loaded) W.D. 0,85 mm	○	○	○	○	○	○	OBB-A1564	80,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,07 mm	○	○	○	○	○	○	OBB-A1565	85,-
	100×/0,80 (dry) (spring-loaded) W.D. 0,15 mm	○	○	○	○	○	○	OBB-A1442	170,-
	Plan 100×/1,0 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	○	○	OBB-A1441	175,-
<b>Monocular tube</b>	45° inclined/360° rotatable	✓	✓	✓		✓		OBB-A1471	
<b>Binocular tube</b>	<ul style="list-style-type: none"> <li>• 30° inclined/360° rotatable</li> <li>• Interpupillary distance 55-75 mm</li> <li>• Diopter adjustment: Both-sided</li> </ul>				✓		✓	OBB-A1472	
<b>Fixed stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 110×120 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2,5 µm</li> </ul>	✓	✓	✓	✓				
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 115×125 mm</li> <li>• Travel 75×18 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2,5 µm</li> </ul>					✓	✓		
<b>Condenser</b>	Simple condenser N.A. 0,65	✓							
	Simple condenser N.A. 0,65 (aperture diaphragm)		✓						
	Abbe N.A. 1,25 (aperture diaphragm)			✓	✓	✓	✓		
<b>Illumination</b>	0,5 W LED illumination system (transmitted) (rechargeable)	✓	✓	✓	✓	✓	✓		
<b>Colour filters for transmitted illumination</b>	Blue			✓	✓	✓	✓	OBB-A1466	19,-
	Green			○	○	○	○	OBB-A1467	19,-
	Yellow			○	○	○	○	OBB-A1468	19,-
	Grey			○	○	○	○	OBB-A1184	19,-

✓ = Included with delivery

○ = Option



**Note**

Please request special conditions for a classroom set



Monocular version



Objectives OBT

**EDUCATIONAL LINE**

The modern compound microscope for teaching in your classroom

**Features**

- The KERN OBT range is a high-quality school microscope, which will impress you with its intuitive control elements, sturdy construction and modern design
- The infinitely dimmable 1W LED guarantees optimum illumination of the samples and also ensures long service life. Mobile use is also no problem through optional battery operation
- The simple 0.65 condenser lens with adjustable aperture diaphragm on the OBT 101 ensures the very best concentration of light and illumination of the sample. The OBT 102, 103, 104, 105, 106 models have a 1.25 Abbe condenser which is height-adjustable and can therefore be focussed and has an aperture diaphragm, which ensures the very best concentration of light

- To focus the object accurately, all models have a coarse and fine focusing knob on both sides. The mechanical angle table enables you to work with the samples and move them rapidly (for OBT 103, 104, 105, 106 models)
- A large selection of different eyepieces and objectives is also available
- 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**

- Primary school, secondary school, training, hobby use

**Applications/Samples**

- Translucent, thin, high-contrast, less complex samples (e.g. plant tissue, coloured cells/parasites)

**Technical data**

- Finite optical system (DIN)
- Triple (OBT 101) or quadplex (OBT 102, 103, 104, 105, 106) nosepiece
- Tube 45° inclined/360° rotatable
- Diopter adjustment: Both-sided (for binocular models)
- Overall dimensions W×D×H 195×147×325 mm
- Net weight approx. 2,5 kg

STANDARD



OPTION



not OBT 101

Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	Stage	
<b>OBT 101</b>	Monocular	HWF 10×/∅ 18 mm	Achromatic	4×/10×/40×	1W LED (transmitted)	fix	<b>205,-</b>
<b>OBT 102</b>	Monocular	HWF 10×/∅ 18 mm	Achromatic		1W LED (transmitted)	fix	<b>220,-</b>
<b>OBT 103</b>	Monocular	HWF 10×/∅ 18 mm	Achromatic		1W LED (transmitted)	mechanical	<b>250,-</b>
<b>OBT 104</b>	Binocular	HWF 10×/∅ 18 mm	Achromatic		1W LED (transmitted)	mechanical	<b>330,-</b>
<b>OBT 105</b>	Monocular	HWF 10×/∅ 18 mm	Achromatic	4×/10×/40×/100×	1W LED (transmitted)	mechanical	<b>275,-</b>
<b>OBT 106</b>	Binocular	HWF 10×/∅ 18 mm	Achromatic		1W LED (transmitted)	mechanical	<b>350,-</b>

Compound microscope KERN OBT-1

Model outfit		Model KERN						Order number	Price/piece excl. of VAT ex works €
		OBT 101	OBT 102	OBT 103	OBT 104	OBT 105	OBT 106		
<b>Eyepieces</b> (23,2 mm)	WF 10×/∅ 18 mm	✓	✓	✓	✓✓	✓	✓✓	OBB-A3200	29,-
	WF 10×/∅ 18 mm (with Pointer)	○	○	○	○	○	○	OBB-A3201	29,-
	WF 10×/∅ 18 mm (reticule 0,1 mm)	○	○	○	○	○	○	OBB-A3202	29,-
<b>Achromatic objectives</b>	4×/0,10 W.D. 27 mm	✓	✓	✓	✓	✓	✓	OBB-A3203	25,-
	10×/0,25 W.D. 7 mm	✓	✓	✓	✓	✓	✓	OBB-A3204	29,-
	40×/0,65 (spring-loaded) W.D. 0,6 mm	✓	✓	✓	✓	✓	✓	OBB-A3205	39,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,2 mm	○	○	○	○	✓	✓	OBB-A3207	59,-
	60×/0,85 (spring-loaded) W.D. 0,4 mm	○	○	○	○	○	○	OBB-A3206	49,-
<b>Monocular tube</b>	45° inclined/360° rotatable	✓	✓	✓	○	✓	○	OBB-A3221	
<b>Binocular tube</b>	<ul style="list-style-type: none"> <li>• Siedentopf 45° inclined/360° rotatable</li> <li>• Interpupillary distance 48-75 mm</li> <li>• Diopter adjustment: One-sided</li> </ul>	○	○	○	✓	○	✓	OBB-A3222	
<b>Fixed stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 115×110 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2 µm</li> </ul>	✓	✓						
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 115×110 mm</li> <li>• Travel 52×20 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2 µm</li> <li>• One slide holder</li> </ul>			✓	✓	✓	✓		
<b>Condenser</b>	Simple condenser N.A. 0,65	✓							
	Abbe N.A. 1,25 (aperture diaphragm)		✓	✓	✓	✓	✓		
<b>Illumination</b>	1 W LED spare bulb (transmitted)	✓	✓	✓	✓	✓	✓	OBB-A3208	19,-
<b>Colour filters for transmitted illumination</b>	Blue	○	○	○	○	○	○	OBB-A3212	19,-
	Green	○	○	○	○	○	○	OBB-A3210	19,-
	Yellow	○	○	○	○	○	○	OBB-A3211	19,-
	Grey	○	○	○	○	○	○	OBB-A3209	19,-

✓ = Included with delivery

○ = Option



Trinocular version



Monocular version



### Note

Please request special conditions for a classroom set



Objectives OBE



Simple polarising unit



Darkfield unit

## EDUCATIONAL LINE

The fully equipped all-round compound microscope for school, training and laboratories

### Features

- The KERN OBE series is a range of high-quality, fully-equipped compound microscopes, which can't be beaten in terms of ease of use and ergonomic design
- The strong and continuously dimmable 3 W LED guarantees optimum illumination of the samples and also ensures long service life. Mobile use of several models is also no problem through the use of rechargeable batteries
- The height-adjustable and thereby focusable 1,25 Abbe condenser with aperture diaphragm is a further quality feature of the OBE series and ensures the very best concentration of light
- Height adjustment of the fully-equipped mechanical stage is carried out using a coarse and fine focusing knob on both

- sides. The ergonomically designed coaxial drive enables you to work with the samples and move them rapidly
- A large selection of different eyepieces and objectives, a simple polarising unit and a darkfield kit are available to you as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the 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

- Training, haematology, sediment investigation, doctor's practise

### Applications/Samples

- Translucent, thin, high-contrast, less complex samples (e.g. plant tissue, coloured cells/parasites)

### Technical data

- Finite optical system
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: One-sided (for binocular and trinocular models)
- Overall dimensions WxDxH 320x180x365 mm
- Net weight approx. 5,5 kg

#### STANDARD



#### OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OBE 101</b>	Monocular	HWF 10x/∅ 18 mm	Achromatic	4x/10x/40x	3 W LED (transmitted)	<b>395,-</b>
<b>OBE 102</b>	Binocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted)	<b>480,-</b>
<b>OBE 103*</b>	Binocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted) (battery incl., rechargeable)	<b>550,-</b>
<b>OBE 104</b>	Trinocular	HWF 10x/∅ 18 mm	Achromatic	4x/10x/40x/100x	3 W LED (transmitted)	<b>590,-</b>
<b>OBE 111</b>	Monocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted)	<b>450,-</b>
<b>OBE 112</b>	Binocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted)	<b>540,-</b>
<b>OBE 113</b>	Binocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted) (battery incl., rechargeable)	<b>610,-</b>
<b>OBE 114</b>	Trinocular	HWF 10x/∅ 18 mm	Achromatic		3 W LED (transmitted)	<b>650,-</b>

\* ONLY WHILE STOCKS LAST

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OBE 101	OBE 102	OBE 103	OBE 104		
<b>Eyepieces</b> (23,2 mm)	HWF 10×/∅ 18 mm	✓	✓✓	✓✓	✓✓	OBB-A1403	45,-
	WF 16×/∅ 13 mm	○	○○	○○	○○	OBB-A1354	45,-
	HWF 10×/∅ 18 mm (with Pointer)	○	○	○	○	OBB-A1348	40,-
	HWF 10×/∅ 18 mm (reticule 0,1 mm) (non-adjustable)	○	○	○	○	OBB-A1349	60,-
<b>Achromatic objectives</b>	4×/0,10 W.D. 18,6 mm	✓	✓	✓	✓	OBB-A1111	35,-
	10×/0,25 W.D. 6,5 mm	✓	✓	✓	✓	OBB-A1108	45,-
	40×/0,65 (spring-loaded) W.D. 0,47 mm	✓	✓	✓	✓	OBB-A1112	70,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,07 mm	○	○	○	○	OBB-A1109	105,-
	20×/0,40 (spring-loaded) W.D. 1,75 mm	○	○	○	○	OBB-A1110	85,-
	60×/0,85 (spring-loaded) W.D. 0,1 mm	○	○	○	○	OBB-A1113	105,-
	E-Plan 100×/0,80 (dry) (spring-loaded) W.D. 0,15 mm	○	○	○	○	OBB-A1442	170,-
	Plan 100×/1,0 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	OBB-A1441	175,-
<b>Monocular tube</b>	30° inclined/360° rotatable	✓				OBB-A1227	
<b>Binocular tube</b>	<ul style="list-style-type: none"> <li>• Siedentopf 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Diopter adjustment: One-sided</li> </ul>		✓	✓		OBB-A1123	
<b>Trinocular tube</b>	<ul style="list-style-type: none"> <li>• see binocular tube</li> <li>• Light distribution 20:80</li> </ul>				✓	OBB-A1341	
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 125×115 mm</li> <li>• Travel 50×70 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2 µm</li> </ul>	✓	✓	✓	✓		
<b>Condenser</b>	Abbe N.A. 1,25 (aperture diaphragm)	✓	✓	✓	✓	OBB-A1101	85,-
<b>Darkfield unit</b>	Usable for 4× – 40× objectives	○	○	○	○	OBB-A1148	85,-
<b>Polarising unit</b>	Analyser/Polariser	○	○	○	○	OBB-A1276	265,-
<b>Illumination</b>	3 W LED illumination system (transmitted) (non-rechargeable)	✓	✓		✓		
	3 W LED illumination system (transmitted) (rechargeable)			✓			
<b>Colour filters for transmitted illumination</b>	Blue	○	○	○	○	OBB-A1466	19,-
	Green	○	○	○	○	OBB-A1467	19,-
	Yellow	○	○	○	○	OBB-A1468	19,-
	Grey	○	○	○	○	OBB-A1184	19,-
<b>C-Mount</b>	0,5× (focus adjustable)				○	OBB-A1137	160,-
	1×				○	OBB-A1139	100,-

✓ = Included with delivery

○ = Option

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OBE 111	OBE 112	OBE 113	OBE 114		
<b>Eyepieces</b> (23,2 mm)	HWF 10×/∅ 18 mm	✓	✓✓	✓✓	✓✓	OBB-A1403	45,-
	WF 16×/∅ 13 mm	○	○○	○○	○○	OBB-A1354	45,-
	HWF 10×/∅ 18 mm (with Pointer)	○	○	○	○	OBB-A1348	40,-
	HWF 10×/∅ 18 mm (reticule 0,1 mm) (non-adjustable)	○	○	○	○	OBB-A1349	60,-
<b>Achromatic objectives</b>	4×/0,10 W.D. 18,6 mm	✓	✓	✓	✓	OBB-A1111	35,-
	10×/0,25 W.D. 6,5 mm	✓	✓	✓	✓	OBB-A1108	45,-
	40×/0,65 (spring-loaded) W.D. 0,47 mm	✓	✓	✓	✓	OBB-A1112	70,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,07 mm	✓	✓	✓	✓	OBB-A1109	105,-
	20×/0,40 (spring-loaded) W.D. 1,75 mm	○	○	○	○	OBB-A1110	85,-
	60×/0,85 (spring-loaded) W.D. 0,1 mm	○	○	○	○	OBB-A1113	105,-
	E-Plan 100×/0,80 (dry) (spring-loaded) W.D. 0,15 mm	○	○	○	○	OBB-A1442	170,-
	Plan 100×/1,0 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	OBB-A1441	175,-
<b>Monocular tube</b>	30° inclined/360° rotatable	✓				OBB-A1227	
<b>Binocular tube</b>	<ul style="list-style-type: none"> <li>Siedentopf 30° inclined/360° rotatable</li> <li>Interpupillary distance 50 – 75 mm</li> <li>Diopter adjustment: One-sided</li> </ul>		✓	✓		OBB-A1123	
<b>Trinocular tube</b>	<ul style="list-style-type: none"> <li>see binocular tube</li> <li>Light distribution 20:80</li> </ul>				✓	OBB-A1341	
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>Stage size W×D 125×115 mm</li> <li>Travel 50×70 mm</li> <li>Coaxial coarse and fine focusing knobs, scale: 2 µm</li> </ul>	✓	✓	✓	✓		
<b>Condenser</b>	Abbe N.A. 1,25 (aperture diaphragm)	✓	✓	✓	✓	OBB-A1101	85,-
<b>Darkfield unit</b>	Usable for 4× – 40× objectives	○	○	○	○	OBB-A1148	85,-
<b>Polarising unit</b>	Analyser/Polariser	○	○	○	○	OBB-A1276	265,-
<b>Illumination</b>	3 W LED illumination system (transmitted) (non-rechargeable)	✓	✓		✓		
	3 W LED illumination system (transmitted) (rechargeable)			✓			
<b>Colour filters for transmitted illumination</b>	Blue	○	○	○	○	OBB-A1466	19,-
	Green	○	○	○	○	OBB-A1467	19,-
	Yellow	○	○	○	○	OBB-A1468	19,-
	Grey	○	○	○	○	OBB-A1184	19,-
<b>C-Mount</b>	0,5× (focus adjustable)				○	OBB-A1137	160,-
	1×				○	OBB-A1139	100,-

✓ = Included with delivery

○ = Option



**Note**

Please request special conditions for a classroom set



Monocular version



Trinocular version



Butterfly tube

**EDUCATIONAL LINE**

Elegant, dynamic and impressive – the new all-round compound microscope for schools, training and laboratories

**Features**

- The brand new OBE-12/13 range stands out through its exclusive, dynamic device, which is second to none in terms of sturdy construction and ergonomics. The clever storage compartment on the back will enable quick practical storage for your power cable. Thanks to the USB connection technology, it is also possible to supply power using an external powerbank
- The impressive, infinitely dimmable 3 W LED guarantees bright illumination of your sample
- A further highlight is the Butterfly tube which is integrated as standard and which enables you to achieve the ideal viewing angle. The height-adjustable and thereby focusable 1.25 Abbe condenser with aperture diaphragm is a further quality feature of the OBE range and guarantees the very best concentration of light
- Height adjustment of the fully-equipped mechanical stage is carried out using a coarse and fine focusing knob on both sides. The ergonomically designed coaxial drive enables you to work with the samples and move them rapidly
- A large selection of different eyepieces and objectives are available to you as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the 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**

- Training, haematology, sediment investigation, doctor's practise

**Applications/Samples**

- Translucent, thin, high-contrast, less complex samples (e.g. plant tissue, coloured cells/parasites)

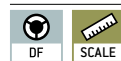
**Technical data**

- Finite optical system
- Quadplex nosepiece
- Butterfly 30° inclined
- Diopter adjustment: One-sided (for binocular and trinocular models)
- Overall dimensions W×D×H 360×150×320 mm
- Net weight approx. 4,6 kg

STANDARD



OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>OBE 121</b>	Monocular	HWF 10×/ø 18 mm	Achromatic	4×/10×/40×	3W LED (transmitted)	<b>440,-</b>
<b>OBE 122</b>	Binocular	HWF 10×/ø 18 mm	Achromatic		3W LED (transmitted)	<b>530,-</b>
<b>OBE 124</b>	Trinocular	HWF 10×/ø 18 mm	Achromatic		3W LED (transmitted)	<b>630,-</b>
<b>OBE 131</b>	Monocular	HWF 10×/ø 18 mm	Achromatic	4×/10×/40×/100×	3W LED (transmitted)	<b>495,-</b>
<b>OBE 132</b>	Binocular	HWF 10×/ø 18 mm	Achromatic		3W LED (transmitted)	<b>590,-</b>
<b>OBE 134</b>	Trinocular	HWF 10×/ø 18 mm	Achromatic		3W LED (transmitted)	<b>690,-</b>



Model outfit		Model KERN						Order number	Price/piece excl. of VAT ex works €
		OBE 121	OBE 122	OBE 124	OBE 131	OBE 132	OBE 134		
<b>Eyepieces</b> (23,2 mm)	HWF 10×/∅ 18 mm	✓	✓✓	✓✓	✓	✓✓	✓✓	OBB-A1403	45,-
	WF 16×/∅ 13 mm	○	○○	○○	○	○○	○○	OBB-A1354	45,-
	HWF 10×/∅ 18 mm (with pointer)	○	○	○	○	○	○	OBB-A1348	40,-
	HWF 10×/∅ 18 mm (reticule 0,1 mm) (non-adjustable)	○	○	○	○	○	○	OBB-A1349	60,-
<b>Achromatic objectives</b>	4×/0,10 W.D. 18,6 mm	✓	✓	✓	✓	✓	✓	OBB-A1111	35,-
	10×/0,25 W.D. 6,5 mm	✓	✓	✓	✓	✓	✓	OBB-A1108	45,-
	40×/0,65 (spring-loaded) W.D. 0,47 mm	✓	✓	✓	✓	✓	✓	OBB-A1112	70,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,07 mm	○	○	○	✓	✓	✓	OBB-A1109	105,-
	20×/0,40 (spring-loaded) W.D. 1,75 mm	○	○	○	○	○	○	OBB-A1110	85,-
	60×/0,85 (spring-loaded) W.D. 0,1 mm	○	○	○	○	○	○	OBB-A1113	105,-
	E-Plan 100×/0,80 (dry) (spring-loaded) W.D. 0,15 mm	○	○	○	○	○	○	OBB-A1442	170,-
	Plan 100×/1,0 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	○	○	OBB-A1441	175,-
<b>Monocular tube</b>	30° inclined	✓			✓				
<b>Binocular tube</b>	· Butterfly 30° inclined · Interpupillary distance 48 – 75 mm · Diopter adjustment: One-sided		✓			✓			
<b>Trinocular tube</b>	· see binocular tube · Light distribution 20:80			✓			✓		
<b>Mechanical stage</b>	· Stage size W×D 125×115 mm · Travel 50×70 mm · Coaxial coarse and fine focusing knobs, scale: 2 µm	✓	✓	✓	✓	✓	✓		
<b>Condenser</b>	Abbe N.A. 1,25 (aperture diaphragm)	✓	✓	✓	✓	✓	✓	OBB-A1101	85,-
<b>Darkfield unit</b>	Usable for 4× – 40× objectives	○	○	○	○	○	○	OBB-A1148	85,-
<b>Illumination</b>	3 W LED illumination system (transmitted)	✓	✓	✓	✓	✓	✓		
<b>Colour filters</b> for transmitted illumination	Blue	○	○	○	○	○	○	OBB-A1466	19,-
	Green	○	○	○	○	○	○	OBB-A1467	19,-
	Yellow	○	○	○	○	○	○	OBB-A1468	19,-
	Grey	○	○	○	○	○	○	OBB-A1184	19,-
<b>C-Mount</b>	0,5× (focus adjustable)			○			○	OBB-A1137	160,-
	1×			○			○	OBB-A1139	100,-

✓ = Included with delivery

○ = Option



Trinocular version



Simple polarising attachment

**LAB LINE**

The flexible laboratory assistant with infinity optical system and fixed, pre-centred Koehler illumination

**Features**

- The OBL series stands out through its infinity optical unit and is therefore ideally suited for all demanding transmitted illumination applications. The robust and ergonomic stand base guarantees safe and comfortable working
- Depending on the application, there is a choice of models with strong, continuously dimmable 3 W LED or 20 W halogen illumination (Philips)
- The fixed, pre-centred and focusable 1,25 Abbe condenser with aperture diaphragm and field diaphragm gives you a simplified Koehler illumination, without having to move the centre
- The large mechanical stage and its specimen holder holds up to two samples at the same time and is quick and easy to focus using a coaxial coarse and fine focusing knob on both sides
- A large selection of eyepieces, objectives and colour filters as well as a darkfield condenser, a simple polarising unit, different phase contrast kits through to HBO and LED fluorescence units are available to you as accessories
- 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**

- Haematology, urology, gynaecology, dermatology, pathology, microbiology and parasitology, immunology, oncology, entomology, vets, water analysis and breweries

**Applications/Samples**

- Translucent, thin, low-contrast, challenging samples (e.g. living mammal cells, bacteria, tissue)

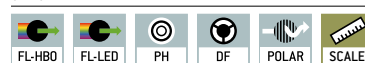
**Technical data**

- Infinity optical system
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: One-sided
- Overall dimensions W×D×H 395×200×380 mm
- Net weight approx. 6,7 kg

STANDARD



OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OBL 125*</b>	Binocular	HWF 10×/ø 20 mm	Infinity E-Plan	4×/10×/40×/100×	20 W Halogen (transmitted)	<b>900,-</b> ↓
<b>OBL 127</b>	Binocular	HWF 10×/ø 20 mm	Infinity E-Plan		3 W LED (transmitted)	<b>910,-</b>
<b>OBL 135*</b>	Trinocular	HWF 10×/ø 20 mm	Infinity E-Plan		20 W Halogen (transmitted)	<b>1010,-</b> ↓
<b>OBL 137</b>	Trinocular	HWF 10×/ø 20 mm	Infinity E-Plan		3 W LED (transmitted)	<b>1020,-</b>

\* ONLY WHILE STOCKS LAST

↓ Price reduction

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OBL 125	OBL 135	OBL 127	OBL 137		
Eyepieces (23,2 mm)	HWF 10×/∅ 20 mm	✓✓	✓✓	✓✓	✓✓	OBB-A1404	95,-
	WF 16×/∅ 13 mm	○	○	○	○	OBB-A1354	45,-
	HWF 10×/∅ 20 mm (with Pointer)	○	○	○	○	OBB-A1448	80,-
Infinity E-Plan objectives	4×/0,10 W.D. 12,1 mm	✓	✓	✓	✓	OBB-A1161	90,-
	10×/0,25 W.D. 2,1 mm	✓	✓	✓	✓	OBB-A1159	150,-
	40×/0,65 (spring-loaded) W.D. 0,58 mm	✓	✓	✓	✓	OBB-A1160	265,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,19 mm	✓	✓	✓	✓	OBB-A1158	335,-
	Plan 20×/0,40 (spring-loaded) W.D. 2,41 mm	○	○	○	○	OBB-A1250	265,-
	Plan 60×/0,80 (spring-loaded) W.D. 0,33 mm	○	○	○	○	OBB-A1270	360,-
	Plan 100×/1,15 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	OBB-A1437	445,-
Binocular tube	<ul style="list-style-type: none"> <li>Butterfly 30° inclined/360° rotatable</li> <li>Interpupillary distance 50 – 75 mm (for infinity system)</li> <li>Diopter adjustment: One-sided</li> </ul>	✓	○	✓	○	OBB-A1578	
Trinocular tube	<ul style="list-style-type: none"> <li>Butterfly 30° inclined/360° rotatable</li> <li>Interpupillary distance 50 – 75 mm</li> <li>Light distribution 20:80 (for infinity system)</li> <li>Diopter adjustment: One-sided</li> </ul>	○	✓	○		OBB-A1580	
Mechanical stage	<ul style="list-style-type: none"> <li>Stage size W×D 145×130 mm</li> <li>Travel 76×52 mm</li> <li>Coaxial coarse and fine focusing knobs, scale: 2 µm</li> <li>Two slide holder</li> </ul>	✓	✓	✓	✓		
Condenser	Abbe N.A. 1,25 precentered (aperture diaphragm)	✓	✓	✓	✓	OBB-A1103	85,-
Darkfield condenser	N.A. 0,85 – 0,91 (dry, paraboloid)	○	○	○	○	OBB-A1422	230,-
Illumination	20 W Halogen spare bulb (transmitted)	✓	✓			OBB-A1370	45,-
	3 W LED illumination system (transmitted) (non-rechargeable)			✓	✓		
Polarising unit	Analyser/Polariser	○	○	○	○	OBB-A1277	265,-
Phase contrast units (including PH-condenser and PH-slides)	Single unit with ∞ PH-Plan objective 10×	○	○	○	○	OBB-A1215	310,-
	Single unit with ∞ PH-Plan objective 20×	○	○	○	○	OBB-A1217	350,-
	Single unit with ∞ PH-Plan objective 40×	○	○	○	○	OBB-A1219	420,-
	Single unit with ∞ PH-Plan objective 100×	○	○	○	○	OBB-A1213	510,-
	If required, there are several magnification levels, please contact our OPTICS-Team						
Fluorescence unit	100 W HBO Epi Fluorescence unit, three-hole slide (B/G) including centering objective	○	○	○	○	OBB-A1154	2350,-
	3 W LED Epi Fluorescence unit, three-hole slide (B/G) including centering objective	○	○	○	○	OBB-A1157	3110,-
Colour filters for transmitted illumination	Blue (built-in)	✓	✓	✓	✓		
	Green	○	○	○	○	OBB-A1188	19,-
	Yellow	○	○	○	○	OBB-A1165	19,-
	Grey	○	○	○	○	OBB-A1183	19,-
C-Mount	0,5× (focus adjustable)		○		○	OBB-A1515	185,-
	1×		○		○	OBB-A1514	120,-

✓ = Included with delivery

○ = Option



Mounted phase contrast condenser



Simple PH condenser with 40× PH slide

**LAB LINE**

High-quality phase contrast microscope – specially pre-configured with a series of options for flexible expansion

**Features**

- We have developed this series specially for general applications with phase contrast method. In addition, the stable, modular construction system of the OBL series offers many more options
- Depending on the application, there is a choice of models with strong, infinitely dimmable 3W LED or 20W halogen illumination (Philips)
- A special fixed, pre-centred phase contrast condenser as well as field diaphragm give you a simplified Koehler illumination and thereby a powerful phase-contrast display of your sample
- The large mechanical stage and its specimen holder holds up to two samples at the same time and is quick and easy to focus using a coaxial coarse and fine focusing knob on both sides
- A large selection of eyepieces, objectives and colour filters, a simple polarising unit as well as further phase contrast units are available to you as accessories
- 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**

- Haematology, urology, gynaecology, dermatology, pathology, microbiology and parasitology, immunology, Sewage treatment plants, Oncology, entomology, vets, water analysis and breweries

**Applications/Samples**

- Specially for extremely translucent, thin, low-contrast, challenging samples (e.g. living mammal cells, bacteria, tissue) with phase contrast

**Technical data**

- Infinity optical system
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: One-sided
- Overall dimensions W×D×H 395×200×380 mm
- Net weight approx. 6,7 kg

STANDARD



OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OBL 145</b>	Binocular	HWF 10×/ø 20 mm	Infinity E-Plan/Plan	4×/PH10×/ PH40×/100×	20 W Halogen (transmitted)	<b>1390,-</b> ↓
<b>OBL 146</b> <small>NEW</small>	Binocular	HWF 10×/ø 20 mm	Infinity E-Plan/Plan		3 W LED (transmitted)	<b>1420,-</b>
<b>OBL 155</b>	Trinocular	HWF 10×/ø 20 mm	Infinity E-Plan/Plan		20 W Halogen (transmitted)	<b>1490,-</b> ↓
<b>OBL 156</b> <small>NEW</small>	Trinocular	HWF 10×/ø 20 mm	Infinity E-Plan/Plan		3 W LED (transmitted)	<b>1530,-</b>

NEW New model

↓ Price reduction

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OBL 145	OBL 155	OBL 146	OBL 156		
Eyepieces (23,2 mm)	HWF 10×/∅ 20 mm	✓✓	✓✓	✓✓	✓✓	OBB-A1404	95,-
	WF 16×/∅ 13 mm	○○	○○	○○	○○	OBB-A1354	45,-
	HWF 10×/∅ 20 mm (with Pointer)	○	○	○	○	OBB-A1448	80,-
Infinity E-Plan objectives	4×/0,10 W.D. 12,1 mm	✓	✓	✓	✓	OBB-A1161	90,-
	10×/0,25 W.D. 2,1 mm	○	○	○	○	OBB-A1159	150,-
	40×/0,65 (spring-loaded) W.D. 0,58 mm	○	○	○	○	OBB-A1160	265,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,19 mm	✓	✓	✓	✓	OBB-A1158	335,-
	Plan 20×/0,40 (spring-loaded) W.D. 2,41 mm	○	○	○	○	OBB-A1250	265,-
	Plan 60×/0,80 (spring-loaded) W.D. 0,33 mm	○	○	○	○	OBB-A1270	360,-
	Plan 100×/1,15 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	OBB-A1437	445,-
Binocular tube	<ul style="list-style-type: none"> <li>• Butterfly 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm (for infinity system)</li> <li>• Diopter adjustment: One-sided</li> </ul>	✓	○	✓	○	OBB-A1578	
Trinocular tube	<ul style="list-style-type: none"> <li>• Butterfly 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Light distribution 20:80 (for infinity system)</li> <li>• Diopter adjustment: One-sided</li> </ul>	○	✓	○	✓	OBB-A1582	
Mechanical stage	<ul style="list-style-type: none"> <li>• Stage size W×D 145×130 mm</li> <li>• Travel 76×52 mm</li> <li>• Coaxial coarse and fine focusing knobs, scale: 2 µm</li> <li>• Two slide holder</li> </ul>	✓	✓	✓	✓		
PH condenser	Abbe N.A. 1,25 precentered, for bright field and phase contrast	✓	✓	✓	✓	OBB-A1398	150,-
Phase contrast units	Infinity PH-Plan objective 10×	✓	✓	✓	✓	OBB-A1390	170,-
	Infinity PH-Plan objective 20×	○	○	○	○	OBB-A1391	200,-
	Infinity PH-Plan objective 40×	✓	✓	✓	✓	OBB-A1392	260,-
	Infinity PH-Plan objective 100×	○	○	○	○	OBB-A1393	345,-
	PH slide 10×	✓	✓	✓	✓	OBB-A1399	75,-
	PH slide 20×	○	○	○	○	OBB-A1400	75,-
	PH slide 40×	✓	✓	✓	✓	OBB-A1401	75,-
	PH slide 100×	○	○	○	○	OBB-A1402	75,-
	Centering eyepiece	✓	✓	✓	✓		
Darkfield condenser	N.A. 0,85 – 0,91 (dry, paraboloid)	○	○	○	○	OBB-A1422	230,-
Illumination	20 W Halogen spare bulb (transmitted)	✓	✓			OBB-A1370	45,-
	3 W LED illumination system (transmitted) (non-rechargeable)			✓	✓		
Colour filters for transmitted illumination	Blue (built-in)	✓	✓	✓	✓		
	Green	✓	✓	✓	✓	OBB-A1188	19,-
	Yellow	○	○	○	○	OBB-A1165	19,-
	Grey	○	○	○	○	OBB-A1183	19,-
C-Mount	0,5× (focus adjustable)		○		○	OBB-A1515	185,-
	1×		○		○	OBB-A1514	120,-

For further optional accessories, please see the list of items for the OBL-12 and OBL-13 series from page 19

✓ = Included with delivery

○ = Option



OBN-13



OBN-15



OBN-15: Mounted phase contrast condenser



Quintuple PH universal rotary condenser with 10×/20×/40×/100× Infinity PH-Plan objectives (complete set, for OBN-15 included)

**PROFESSIONAL LINE**

Professionalism and versatility united in one microscope – with Koehler illumination for demanding applications

**Features**

- The OBN series stands out because of its unbeatable and consistently high quality and its ergonomic design. The range of modular components means that the OBN series can be individually customised for the professional user
- Depending on the application, there is a choice of models with strong, continuously dimmable 3 W LED or 20 W halogen transmitted illumination (Philips)
- In addition the microscope is available as a pre-configured phase contrast microscope, which, through the combination of a professional quintuple condenser wheel, phase contrast condenser and Infinity Plan phase contrast objectives makes it a high-quality, fully-equipped microscope for all applications related to contrast procedures
- This series has a professional Koehler illumination unit with an adjustable field diaphragm as well as a height-adjustable 1,25 Abbe condenser which can be centred and which has an adjustable aperture diaphragm
- The extremely large mechanical stage with ergonomic, coaxial coarse and fine focusing knob on both sides enables you to adjust and focus your sample rapidly and accurately
- A wide variety of modular systems, such as, for example, a swing-out condenser, various eyepieces, objectives, colour filters, phase contrast units, a darkfield condenser, a simple polarising unit, Butterfly tube, through to complete fluorescence units are available to you as accessories
- The centring eyepiece for adjusting the phase contrast (OBN-15), a protective dust cover, eye cups as well as multi-lingual User instructions are included with the 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**

- Haematology, urology, gynaecology, dermatology, pathology, microbiology and parasitology, immunology, Sewage treatment plants, Oncology, entomology, vets, water analysis and breweries

**Applications/Samples**

- Translucent, thin, low-contrast, challenging samples (e.g. living mammal cells, bacteria, tissue)

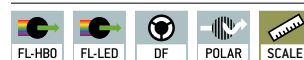
**Technical data**

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 390×200×400 mm
- Net weight approx. 9 kg

STANDARD



OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN OBN 132</b>	Trinocular	HWF 10×/ø 20 mm	Infinity Plan	4×/10×/20×/40×/100×	20 W Halogen (transmitted)	<b>1420,-</b>
<b>OBN 135</b>	Trinocular	HWF 10×/ø 20 mm	Infinity Plan	4×/10×/20×/40×/100×	3 W LED (transmitted)	<b>1420,-</b>
<b>OBN 158</b>	Trinocular	HWF 10×/ø 20 mm	Infinity Plan	4×/PH10×/PH20×/PH40×/PH100×	20 W Halogen (transmitted)	<b>2540,-</b>
<b>OBN 159</b> <small>NEW</small>	Trinocular	HWF 10×/ø 20 mm	Infinity Plan	4×/PH10×/PH20×/PH40×/PH100×	3 W LED (transmitted)	<b>2540,-</b>

NEW New model

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OBN 132	OBN 135	OBN 158	OBN 159		
Eyepieces (23,2 mm)	HWF 10×/∅ 20 mm	✓✓	✓✓	✓✓	✓✓	OBB-A1404	95,-
	WF 16×/∅ 13 mm	○○	○○	○○	○○	OBB-A1354	45,-
Infinity Plan achromatic objectives	4×/0,10 W.D. 12,1 mm	✓	✓	✓	✓	OBB-A1263	110,-
	10×/0,25 W.D. 4,64 mm	✓	✓	○	○	OBB-A1243	195,-
	20×/0,40 (spring-loaded) W.D. 2,41 mm	✓	✓	○	○	OBB-A1250	265,-
	40×/0,66 (spring-loaded) W.D. 0,65 mm	✓	✓	○	○	OBB-A1257	290,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,19 mm	✓	✓	○	○	OBB-A1240	315,-
	2,5×/0,07 W.D. 8,47 mm	○	○	○	○	OBB-A1247	265,-
	Plan 60×/0,80 (spring-loaded) W.D. 0,33 mm	○	○	○	○	OBB-A1270	360,-
	Plan 100×/1,15 (water) (spring-loaded) W.D. 0,18 mm	○	○	○	○	OBB-A1437	445,-
Trinocular tube	<ul style="list-style-type: none"> <li>• Siedentopf 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Light distribution 100:0</li> <li>• Diopter adjustment: Both-sided</li> </ul>	✓	✓	✓	✓		
	<ul style="list-style-type: none"> <li>• Butterfly 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Light distribution 100:0</li> <li>• Diopter adjustment: Both-sided</li> </ul>	○	○	○	○	OBB-A1382	520,-
Mechanical stage	<ul style="list-style-type: none"> <li>• Stage size W×D 175×145 mm</li> <li>• Travel 78×55 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> <li>• Two slide holder</li> </ul>	✓	✓	✓	✓		
Condenser	Abbe N.A. 1,25 center-adjustable (aperture diaphragm)	✓	✓	○	○	OBB-A1102	85,-
	Swing-out condenser N.A. 0,9/0,13 center-adjustable (aperture diaphragm)	○	○	○	○	OBB-A1104	220,-
Darkfield condenser	N.A. 0,85 – 0,91 (dry, paraboloid)	○	○	○	○	OBB-A1421	265,-
	N.A. 1,3 (oil, cardioid)	○	○	○	○	OBB-A1538	580,-
Koehler illumination	20 W Halogen spare bulb (transmitted)	✓		✓		OBB-A1370	45,-
	3 W LED illumination system (transmitted) (non-rechargeable)		✓		✓		
Polarising unit	Analyser/Polariser	○	○	○	○	OBB-A1283	265,-
Phase contrast units	Quintuple hole turret with 10×/20×/40×/100× Infinity-PH-Plan objectives (complete set)	○	○	✓	✓	OBB-A1237	1570,-
	Single unit with ∞ PH-Plan objective 10×	○	○			OBB-A1214	310,-
	Single unit with ∞ PH-Plan objective 20×	○	○			OBB-A1216	350,-
	Single unit with ∞ PH-Plan objective 40×	○	○			OBB-A1218	420,-
	Single unit with ∞ PH-Plan objective 100×	○	○			OBB-A1212	510,-
	Centering eyepiece	○	○	✓	✓		
If required, there are several magnification levels, please contact our OPTICS-Team							
C-Mount	1×	○	○	○	○	OBB-A1140	100,-
	0,57× (focus adjustable)	○	○	○	○	OBB-A1136	160,-
Fluorescence unit	100 W HBO Epi Fluorescence unit 6-filter disc (UV/V/B/G) including centering objective	○	○	○	○	OBB-A1155	4340,-
	100 W HBO Epi Fluorescence unit, two-hole slide (B/G) including centering objective	○	○	○	○	OBB-A1153	3080,-
	3 W LED Epi Fluorescence unit (B/G) including centering objective	○	○	○	○	OBB-A1156	3110,-
Colour filters for transmitted illumination	Blue	✓		✓	✓		
	Green	○	○	✓	✓	OBB-A1188	19,-
	Yellow	○	○	○	○	OBB-A1165	19,-
	Grey	○	○	○	○	OBB-A1183	19,-

✓ = Included with delivery

○ = Option



**Note**

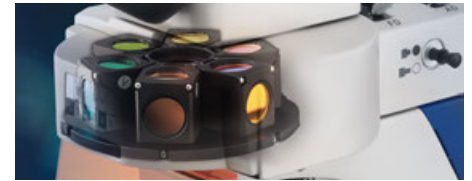
Semi apochromatic objectives available as accessories (see model outfit list Page 25)



OBN 141/OBN 147



Illumination unit



Sextuple filter wheel OBN 148

**PROFESSIONAL LINE**

The fluorescence microscope for the professional user

**Features**

- The fluorescence microscope in the OBN-14 series is based on the usual high quality and versatility of the OBN series. The outstanding, stable design in combination with high-quality optics set the standard in fluorescence microscopy in this class
- The powerful, dimmable 20W halogen illumination unit (Philips) and a 100W Epi fluorescence incident illumination unit on the OBN 147/OBN 148 models ensure perfect illumination and stimulation of your fluorescence samples
- As an alternative, with the OBN 141 model we can offer you a fluorescence microscope with a 3W LED transmitted illumination unit and 3W LED Epi fluorescence incident illumination unit
- This series has a professional Koehler illumination unit with an adjustable field diaphragm as well as a height-adjustable 1,25 Abbe condenser which can be centred and which has an adjustable aperture diaphragm
- The extremely large mechanical stage with ergonomic, coaxial coarse and fine focusing knob on both sides enables you to adjust and focus your sample rapidly and accurately
- With the OBN 147/OBN 148 halogen variant you have a filter wheel which has up to 6 fittings. As standard this is fitted with a B/G or B/G/UV/V fluorescence filter. The OBN 141 LED variant is fitted with a B/G fluorescence filter with a changeover slider as standard. The changeover slider and the filter wheel mean that you can change the stimulation filter quickly
- A large selection of eyepieces, objectives, colour filters, darkfield condensers as well as a Butterfly tube, polarising and phase contrast units can easily be integrated thanks to the modular construction system
- The centring objective for adjusting the fluorescence, 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**

- Haematology, urology, gynaecology, dermatology, pathology, microbiology and parasitology, immunology, Sewage treatment plants, Oncology, entomology, vets, water analysis and breweries

**Applications/Samples**

- Specially for translucent, thin, low-contrast, challenging samples (e.g. immunofluorescence, FISH, DAPI staining, etc.)

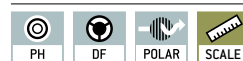
**Technical data**

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: Both-sided
- Overall dimensions WxDxH 530x220x490 mm
- Net weight approx. 23 kg

STANDARD



OPTION



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN OBN 141</b>	Trinocular	HWF 10x/φ 20 mm	Infinity Plan	4x/10x/20x/ 40x/100x	LED + 3 W LED Epi Fluorescence (B/G)	<b>4470,-</b>
<b>OBN 147</b>	Trinocular	WF 10x/φ 20 mm	Infinity Plan		Halogen + 100 W Epi Fluorescence (B/G)	<b>4390,-</b>
<b>OBN 148</b>	Trinocular	HWF 10x/φ 20 mm	Infinity Plan		Halogen + 100 W Epi Fluorescence (B/G/UV/V)	<b>5630,-</b>



Model outfit		Model KERN			Order number	Price/piece excl. of VAT ex works €
		OBN 141	OBN 147	OBN 148		
Eyepieces (23,2 mm)	HWF 10×/∅ 20 mm	✓✓		✓✓	OBB-A1404	95,-
	WF 10×/∅ 20 mm		✓✓		OBB-A1351	85,-
	WF 16×/∅ 13 mm	○○	○○	○○	OBB-A1354	45,-
	WF 10×/∅ 20 mm (reticule 0,1 mm) (adjustable)	○	○	○	OBB-A1352	140,-
Infinity Plan achromatic objectives	4×/0,10 W.D. 12,1 mm	✓	✓	✓	OBB-A1263	110,-
	10×/0,25 W.D. 4,64 mm	✓	✓	✓	OBB-A1243	195,-
	20×/0,40 (spring-loaded) W.D. 2,41 mm	✓	✓	✓	OBB-A1250	265,-
	40×/0,66 (spring-loaded) W.D. 0,65 mm	✓	✓	✓	OBB-A1257	290,-
	100×/1,25 (oil) (spring-loaded) W.D. 0,19 mm	✓	✓	✓	OBB-A1240	315,-
	2,5×/0,07 W.D. 8,47 mm	○	○	○	OBB-A1247	265,-
	Plan 60×/0,80 (spring-loaded) W.D. 0,33 mm	○	○	○	OBB-A1270	360,-
Infinity Plan Semi Achromatic objectives	10×/0,3 W.D. 7,68 mm	○	○	○	OBB-A1634	380,-
	20×/0,5 W.D. 1,96 mm	○	○	○	OBB-A1635	650,-
	40×/0,75 (spring-loaded) W.D. 0,78 mm	○	○	○	OBB-A1636	890,-
	100×/1,3 (oil) (spring-loaded) W.D. 0,15 mm	○	○	○	OBB-A1637	1150,-
Trinocular tube	<ul style="list-style-type: none"> <li>• Siedentopf 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Light distribution 100:0</li> <li>• Diopter adjustment: Both-sided</li> </ul>	✓	✓	✓		
Mechanical stage	<ul style="list-style-type: none"> <li>• Stage size W×D 175×145 mm</li> <li>• Travel 78×55 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> <li>• Two slide holder</li> </ul>	✓	✓	✓		
Condenser	Abbe N.A. 1,25 center-adjustable (aperture diaphragm)	✓	✓	✓	OBB-A1102	85,-
	Swing-out condenser N.A. 0,9/0,13 center-adjustable (aperture diaphragm)	○	○	○	OBB-A1104	220,-
Darkfield condenser	N.A. 0,85 – 0,91 (dry, paraboloid)	○	○	○	OBB-A1421	265,-
	N.A. 1,3 (oil, cardioid)	○	○	○	OBB-A1538	580,-
Koehler illumination	20 W Halogen spare bulb (transmitted)		✓	✓	OBB-A1370	45,-
	3 W LED illumination system (transmitted) (non-rechargeable)	✓				
Polarising unit	Analyser/Polariser	○	○	○	OBB-A1283	265,-
Phase contrast units	Quintuple hole turret with 10×/20×/40×/100× Infinity-PH-Plan objectives (complete set)	○	○	○	OBB-A1237	1570,-
	Single unit with ∞ PH-Plan objective 10×	○	○	○	OBB-A1214	310,-
	Single unit with ∞ PH-Plan objective 20×	○	○	○	OBB-A1216	350,-
	Single unit with ∞ PH-Plan objective 40×	○	○	○	OBB-A1218	420,-
	Single unit with ∞ PH-Plan objective 100×	○	○	○	OBB-A1212	510,-
	If required, there are several magnification levels, please contact our OPTICS-Team					
C-Mount	1×	○	○	○	OBB-A1140	100,-
	0,57× (focus adjustable)	○	○	○	OBB-A1136	160,-
Fluorescence unit	100 W HBO Epi Fluorescence unit 6-filter disc (UV/V/B/G) including centering objective			✓		
	100 W HBO Epi Fluorescence unit, two-hole slide (B/G) including centering objective		✓			
	3 W LED Epi Fluorescence unit (B/G) including centering objective	✓				
Colour filters for transmitted illumination	Blue	✓	✓	✓		
	Green	○	○	○	OBB-A1188	19,-
	Yellow	○	○	○	OBB-A1165	19,-
	Grey	○	○	○	OBB-A1183	19,-

✓ = Included with delivery      ○ = Option



OCM 161



OCM 165-168



N.A. 0,3 Abbe Condenser with phase contrast slide



Coaxial control knobs for x/y can be fitted either left or right

**LAB LINE**

The inverted biological laboratory microscope – also with fluorescence

**Features**

- The OCM range stands out through its design which is ergonomic, robust and extremely stable. This design, with its large working distance, is particularly suitable for the monitoring and analysis of cell cultures, for example
- A strong and continuously adjustable 30W halogen illumination unit ensures the optimum illumination in the bright field of your samples. In addition, either an Osram 100 W-HBO- (OCM 165/166) or a 5 W-LED Epi fluorescence incident illumination unit (OCM 167/168) are available to you as a fluorescence microscope for perfect illumination and stimulation of your fluorescence samples
- A special Abbe N.A. 0.3 condenser with aperture diaphragm and large working distance of 72 mm guarantees the very best working practise in the bright field and with fluorescence applications

- As standard, the OCM range is fitted with a trinocular eyepiece tube
- The mechanical stage including specimen holder (∅ 110 mm) means that you can work quickly and effectively. Further brackets for petri dishes are included with delivery or available as accessories
- Further options such as, for example, a selection of eyepieces, objectives, specimen holders and other phase contrast units 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**

- Research and breeding of cell cultures and tissue cultures

**Applications/Samples**

- Particularly for viewing samples in culture vessels (flasks, petri dishes, microtitre plates), translucent, thin, low-contrast, challenging samples (e.g. living mammal cells, tissue, microorganisms if necessary, immunofluorescence, FISH, DAPI staining etc.)

**Technical data**

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 45° inclined
- Diopter adjustment: Both-sided

**OCM 161**

- Overall dimensions W×D×H 304×599×530 mm
- Net weight approx. 13,5 kg

**OCM 165-168**

- Overall dimensions W×D×H 304×782×530 mm
- Net weight approx. 21 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>OCM 161</b>	Trinocular	HWF 10×/∅ 22 mm	Infinity Plan	LWD10×/LWD20×/LWD40×/LWD20×PH	30 W Halogen (transmitted)	<b>3190,-</b>
<b>OCM 165</b>	Trinocular	HWF 10×/∅ 22 mm	Infinity Plan		30 W Halogen + 100 W Epi Fluorescence (B/G)	<b>7790,-</b>
<b>OCM 166</b>	Trinocular	HWF 10×/∅ 22 mm	Infinity Plan		30 W Halogen + 100 W Epi Fluorescence (UV/V/B/G)	<b>9100,-</b>
<b>OCM 167</b>	Trinocular	HWF 10×/∅ 22 mm	Infinity Plan		5W-LED + 5W Epi Fluorescence (B/G)	<b>7790,-</b>
<b>OCM 168</b>	Trinocular	HWF 10×/∅ 22 mm	Infinity Plan		5W-LED + 5W Epi Fluorescence (UV/V/B/G)	<b>9100,-</b>

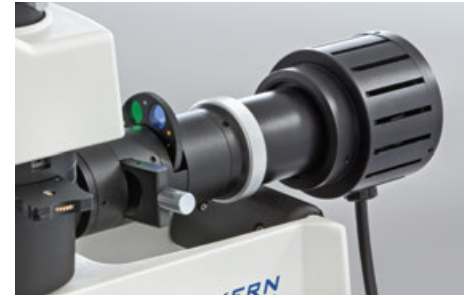
Model outfit		Model KERN					Order number	Price/piece excl. of VAT ex works €
		OCM 161	OCM 165	OCM 166	OCM 167	OCM 168		
<b>Eyepieces</b> (30 mm)	HWF 10×/ø 22 mm (adjustable)	✓✓	✓✓	✓✓	✓✓	✓✓	OBB-A1491	90,-
	HWF 10×/ø 22 mm (reticule 0,1 mm) (adjustable)	○	○	○	○	○	OBB-A1523	140,-
<b>Infinity Plan achromatic Fluor objectives</b> for long working distance	4×/0,11 W.D. 12,1 mm	○	○	○	○	○	OBB-A1600	120,-
	10×/0,25 W.D. 10,3 mm	✓	✓	✓	✓	✓	OBB-A1601	180,-
	20×/0,40 W.D. 5,8 mm	✓	✓	✓	✓	✓	OBB-A1602	250,-
	40×/0,60 W.D. 5,1 mm	✓	✓	✓	✓	✓	OBB-A1603	310,-
<b>Trinocular tube</b>	<ul style="list-style-type: none"> <li>• 45° inclined</li> <li>• Interpupillary distance 48–76 mm</li> <li>• Light distribution 100:0</li> <li>• Diopter adjustment: Both-sided</li> </ul>	✓	✓	✓	✓	✓		
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 210×241 mm</li> <li>• Travel 128×80 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> <li>• The x/y control knobs can be fitted either left or right</li> <li>• Suitable for attaching a 96-hole microtitre plate</li> </ul>	✓	✓	✓	✓	✓		
	Drop specimen holder (ø 110)	✓	✓	✓	✓	✓	OBB-A1503	30,-
	Specimen holder for 35 mm culture dish	○	○	○	○	○	OBB-A1507	60,-
	Specimen holder for 54 mm culture dish	✓	✓	✓	✓	✓	OBB-A1506	60,-
	Specimen holder for 65 mm culture dish	○	○	○	○	○	OBB-A1505	60,-
<b>Condenser</b>	Abbe N.A. 0,3 (aperture diaphragm), LWD 72 mm	✓	✓	✓	✓	✓		
<b>Illumination</b>	30 W Halogen spare bulb (transmitted)	✓	✓	✓			OBB-A1372	35,-
	5 W LED spare bulb (transmitted)				✓	✓	OBB-A1589	75,-
<b>Phase contrast units</b>	Phase contrast slide 4x	○	○	○	○	○	OBB-A1608	80,-
	Phase contrast slide 10x	✓	✓	✓	✓	✓	OBB-A1609	80,-
	Phase contrast slide 20x/40x	✓	✓	✓	✓	✓	OBB-A1610	80,-
	Infinity PH-Plan Fluor objective 4×	○	○	○	○	○	OBB-A1604	590,-
	Infinity PH-Plan Fluor objective 10x	○	○	○	○	○	OBB-A1605	220,-
	Infinity PH-Plan Fluor objective 20x	✓	✓	✓	✓	✓	OBB-A1606	310,-
	Infinity PH-Plan Fluor objective 40x	○	○	○	○	○	OBB-A1607	350,-
	Centering eyepiece	○	○	○	○	○	OBB-A1544	110,-
<b>Fluorescence unit</b>	100 W HBO Epi Fluorescence unit, two-hole slide (B/G)		✓					
	100 W HBO Epi Fluorescence unit, four-hole slide (UV/V/B/G)			✓				
	5 W HBO Epi Fluorescence unit, two-hole slide (B/G)				✓			
	5 W HBO Epi Fluorescence unit, four-hole slide (UV/V/B/G)					✓		
<b>Colour filters</b> for transmitted illumination	Blue	✓	✓	✓	✓	✓	OBB-A1510	19,-
	Green	✓	✓	✓	✓	✓	OBB-A1511	19,-
	Yellow	○	○	○	○	○	OBB-A1512	19,-
	Grey	○	○	○	○	○	OBB-A1513	19,-
<b>C-Mount</b>	0,5×	○	○	○	○	○	OBB-A1515	185,-
	1×	○	○	○	○	○	OBB-A1514	120,-

✓ = Included with delivery

○ = Option

## 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	
<b>KERN</b>						
<b>OKM 173</b>	Trinocular	HWF 10×/ø 18 mm	Infinity Plan	5×/10×/ LWD 20×/ LWD40×	30 W Halogen (incident)	<b>1890,-</b>

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		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	5×/0,11 W.D. 6,80 mm	✓	OBB-A1268	105,-
	10×/0,25 W.D. 4,3 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 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"> <li>• Siedentopf 30° inclined/360° rotatable</li> <li>• Interpupillary distance 50 – 75 mm</li> <li>• Light distribution 80:20</li> <li>• Diopter adjustment: One-sided</li> </ul>	✓	OBB-A1346	
Mechanical stage	<ul style="list-style-type: none"> <li>• Stage size W×D 200×140 mm</li> <li>• Travel 76×52 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> </ul>	✓		
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	120,-
	0,5× (focus adjustable)	○	OBB-A1515	185,-

✓ = Included with delivery

○ = Option



Stage OKO



Illumination unit

**PROFESSIONAL LINE MET**

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

**Features**

- This device is a professional, versatile, metallurgical microscope, which is used in testing metals and analysing surfaces
- The KERN OKO 178 is a combi variant of LED incident illumination and LED transmitted illumination. A height-adjustable 1.25 Abbe condenser which can be centred as well as a field diaphragm for complete professional Köhler illumination are part of the standard version.
- An open, mechanical angle table is integrated as standard
- A simple polarising unit (analyser and polariser) is included with delivery
- A large selection of accessories, such as, for example, 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	
<b>KERN</b>						
<b>OKO 178</b>	Trinocular	HWF 10×/ø 22 mm	Infinity Plan	5x/ 10x/20x/50x	5 W LED (incident + transmitted)	<b>2830,-</b>

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OKO 178		
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 objectives for long working distance	5×/0,13 W.D. 16,04 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×/0,85 (dry) W.D. 3,00 mm	○	OBB-A1531	720,-
Trinocular tube	<ul style="list-style-type: none"> <li>• Siedentopf 30° inclined/360° rotatable</li> <li>• Interpupillary distance 48-76 mm</li> <li>• Light distribution 100:0</li> </ul>	✓		
Mechanical stage for transmitted illumination	<ul style="list-style-type: none"> <li>• Stage size W×D 182×140 mm</li> <li>• Travel 77×52 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> </ul>	✓		
Reflected illumination unit	Polarising unit (Incl. analyser, polariser and blue filter slide)	✓		
Condenser	Abbe N.A. 1,25 (aperture diaphragm)	✓	OBB-A1380	100,-
Koehler illumination	5 W LED spare bulb (transmitted)	✓	OBB-A1589	75,-
Illumination polarising unit	5 W LED spare bulb (incident)			
Polariser	for transmitted illumination	✓	OBB-A1470	135,-
Colour filters for transmitted illumination	Blue	✓	OBB-A1170	19,-
	Green	○	OBB-A1188	19,-
	Yellow	○	OBB-A1165	19,-
	Grey	○	OBB-A1183	19,-
C-Mount	1×	○	OBB-A1514	120,-
	0,75×	○	OBB-A1590	170,-
	0,5× (focus adjustable)	○	OBB-A1515	185,-

✓ = 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	
<b>KERN</b>						
<b>OLM 171</b>	Trinocular	HWF 10×/ø 22 mm	Infinity Plan	LWD5×/LWD10×/ LWD20×/LWD50×	50 W Halogen (incident)	<b>3190,-</b>

# Metallurgical inverted microscope KERN OLM-1

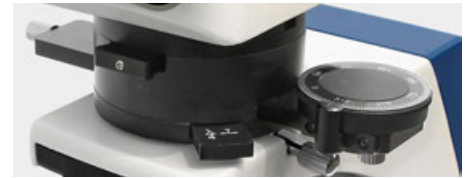
Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OLM 171		
<b>Eyepieces</b> (30 mm)	HWF 10×/∅ 22 mm (adjustable)	✓	OBB-A1491	90,-
	HWF 10×/∅ 22 mm (reticule 0,1 mm) (adjustable)	✓	OBB-A1523	140,-
<b>Infinity Plan achromatic objectives</b> for long working distance	5×/0,13 W.D. 16,04 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×/0,85 (dry) W.D. 3,00 mm	○	OBB-A1531	720,-
<b>Trinocular tube</b>	<ul style="list-style-type: none"> <li>• 30° inclined</li> <li>• Interpupillary distance 48-76 mm</li> <li>• Light distribution 100:0</li> <li>• Diopter adjustment: Both-sided</li> </ul>	✓		
<b>Mechanical stage</b>	<ul style="list-style-type: none"> <li>• Stage size W×D 210×180 mm</li> <li>• Travel 50×50 mm</li> <li>• Coaxial coarse and fine focusing knobs</li> </ul>	✓		
<b>Illumination</b>	50 W Halogen spare bulb (incident)	✓	OBB-A1207	19,-
<b>Reflected illumination unit</b>	Polarising unit (Incl. analyser, polariser and colour filter slide)	✓		
<b>Colour filters</b> for transmitted illumination	Blue	✓	OBB-A1510	19,-
	Green	○	OBB-A1511	19,-
	Yellow	○	OBB-A1512	19,-
	Grey	○	OBB-A1513	19,-
<b>C-Mount</b>	0,5×	○	OBB-A1515	185,-
	1×	○	OBB-A1514	120,-

✓ = Included with delivery

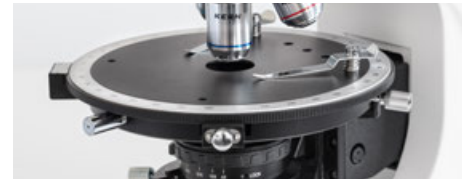
○ = Option

### 3 Polarising microscopes





Bertrand lens,  $\lambda$  Slip, 360° rotatable analyser (removable)



Center-adjustable and turnable polarisation stage



"Swing-Out" condenser

### PROFESSIONAL LINE POL

The flexible and powerful polarising microscope for all professional applications with reflected and transmitted light

#### Features

- This device is a professional, fully-equipped polarising microscope, which uses the polarisation of light to analyse minerals, crystals and isotropic materials
- The KERN OKO 185 is a combi variant of LED incident illumination and LED transmitted illumination. A height-adjustable 0.9/0.13 Swing-out Abbe condenser which can be centred for complete Köhler illumination are part of the standard version.
- A 360° revolving stage with 1° division, 6' fine division and locking function is integrated into all series as standard
- As standard all series are fitted with a complete polarising unit with scale, a Bertrand lens, a  $\lambda + \frac{1}{4} \lambda$  Slip as well as a quartz wedge
- A large selection of accessories such as, for example, a mechanical stage attachment as well as further objectives for a long working distance and filter units 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. You can select this adapter from the following model outfit list
- Please find detailed information in the following model outfit list

#### Scope of application

- Mineralogy, texture observations, material testing, observation of crystals

#### Applications/Samples

- More complex samples with polarising properties

#### Technical data

- Infinity optical system
- Quintuple nosepiece
- Siedentopf 30° inclined
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 500×200×500 mm
- Net weight approx. 14,5 kg

#### STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OPO 185</b>	Trinocular	HWF 10×/ø 20 mm	Infinity Plan	Non-stress 4×/10×/20×/40×/50×	5W LED (incident + transmitted)	<b>4840,-</b>

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OPO 185		
<b>Eyepieces</b> (23,2 mm)	HWF 10×/20 mm	✓	OBB-A1591	80,-
	HWF 10×/20 mm (reticule 0,1 mm) (adjustable)	✓	OBB-A1592	110,-
<b>Non-stress Infinity Plan objectives</b> (transmitted)	4×/0,10 W.D. 12,1 mm	✓	OBB-A1294	105,-
	10×/0,25 W.D. 4,64 mm	✓	OBB-A1289	200,-
	20×/0,40 (spring-loaded) W.D. 2,41 mm	✓	OBB-A1290	265,-
	40×/0,66 (spring-loaded) W.D. 0,65 mm	✓	OBB-A1292	310,-
<b>Non-stress Infinity Plan objectives</b> (incident) for long working distance	5×/0,13 W.D. 16,04 mm	○	OBB-A1593	95,-
	10×/0,25 W.D. 18,48 mm	○	OBB-A1594	190,-
	20×/0,40 W.D. 8,35 mm	○	OBB-A1291	345,-
	50×/0,70 (spring-loaded) W.D. 1,95 mm	✓	OBB-A1295	415,-
	100×/0,85 (dry) (spring-loaded) W.D. 3,00 mm	○	OBB-A1595	1080,-
<b>Trinocular tube</b>	<ul style="list-style-type: none"> <li>• Siedentopf 30° inclined</li> <li>• Interpupillary distance 48 - 76 mm</li> <li>• Light distribution 100:0</li> </ul>	✓		
<b>Analyser unit with scale</b>	360° rotatable, lockable	✓		
<b>Bertrand lens</b>	Insertable, center-adjustable	✓	OBB-A1121	305,-
<b>λ + ¼ λ Slip</b>	λ Slip and ¼ λ Slip (combination)	✓	OBB-A1316	140,-
<b>Quartz wedge</b>	I - IV Class	✓	OBB-A1321	240,-
<b>Revolving round stage</b>	360° rotatable, center-adjustable, division 1°, Vernier division 6'	✓		
<b>Polarising attached mechanical stage</b>	Polarising attached mechanical stage	○	OBB-A1337	270,-
<b>Swing-out condenser</b>	N.A. 0,9/0,13 swing-out achromatic condenser (aperture diaphragm)	✓	OBB-A1107	135,-
<b>Polarising unit with scale</b> (transmitted)	360° rotatable, lockable	✓		
<b>Koehler illumination</b>	5 W LED spare bulb (transmitted)	✓	OBB-A1589	75,-
<b>Illumination polarising unit</b>	5 W LED spare bulb (incident)			
<b>Colour filters</b> for transmitted illumination	Blue	✓	OBB-A1170	19,-
	Green	○	OBB-A1188	19,-
	Yellow	○	OBB-A1165	19,-
	Grey	○	OBB-A1183	19,-
<b>C-Mount</b>	1×	○	OBB-A1514	120,-
	0,75×	○	OBB-A1590	170,-
	0,5× (focus adjustable)	○	OBB-A1515	185,-

✓ = Included with delivery

○ = Option



## Cleaning sets for microscopes

### Features

- This economical and fully equipped 7-piece cleaning set contains everything you need for the very best care of your microscope
- A silicon hand blower, dust brush, 60 ml of cleaning liquid, lint-free duster, optical cleaning cloths and cleaning swabs. You get all that in a high-quality KERN storage bag which you can also easily fix onto your belt
- You can use this set not only to gently clean your microscope, but also for example your camera, binoculars or all other optical surfaces

Model	Description	Price excl. of VAT ex works €
KERN		
OCS 901	7-piece cleaning sets for microscopes und other optical instruments	27,-

## Microscopy, measuring technology and testing services from a single source



Optical instruments catalogue



Balances & test service catalogue



Medical scales catalogue



SAUTER measuring equipment catalogue



DAkkS calibration service brochure

# 4 Stereomicroscopes

Stereo, Stereo-Zoom, Coaxial and Gem microscopes





Side view

**EDUCATIONAL LINE**

Stereo microscope with robust, ergonomic design, ideal for workshops, schools and training

**Features**

- With its integrated handle as well as its stable arm curved stand, the KERN OSE OSE-42 has been specially developed for schools and workshops
- The incident and transmitted illumination unit included as standard can be optionally enabled for the very best illumination of your sample. Mobile use is also no problem due to the integrated battery compartment.
- Despite its low price it has very good optical characteristics, which enable you to have sharp images over a large field of view
- An turnable objective with predefined magnifications is available to make your working procedures quicker and more efficient
- The eyepieces are fixed in the eyepiece tube, to stop them getting damaged or lost
- A special feature of this adaptable and yet robust microscope series is the stable mechanism of the microscope stand which can be adjusted precisely. It will also impress you with its functionality and ergonomic design
- A large selection of eyepieces as well as various additional external illumination units are available as accessories

**Scope of application**

- Training, in vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

**Applications/Samples**

- Samples with focus on three-dimensional impression (depth, thickness), e.g. insects, seeds, circuit boards, components

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable
- Tube 45° inclined
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 200×180×300 mm
- Net weight approx. 2 kg

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective	Stand	Illumination	
<b>KERN</b>							
<b>OSE 421</b>	Binocular	WF 10×/ø 20 mm	ø 20	2×/4×	Arm curved	1 W LED (incident); 1 W LED (transmitted)	<b>275,-</b>



Eyepiece	Specifications - Objectives		
	Magnification	2×	4×
WF 5×	Total magnification	10×	20×
	Field of view mm	∅ 10	∅ 5
WF 10×	Total magnification	20×	40×
	Field of view mm	∅ 10	∅ 5
WF 15×	Total magnification	30×	60×
	Field of view mm	∅ 7,5	∅ 3,7
WF 20×	Total magnification	40×	80×
	Field of view mm	∅ 6,5	∅ 3,2
Working distance		57 mm	57 mm

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OSE 421		
Eyepieces (30,5 mm)	WF 5×/∅ 16,2 mm	○ ○	OZB-A4101	35,-
	WF 10×/∅ 20 mm	✓ ✓	OZB-A4102	30,-
	WF 15×/∅ 15 mm	○ ○	OZB-A4103	30,-
	WF 20×/∅ 10 mm	○ ○	OZB-A4104	35,-
	WF 10×/∅ 20 mm (reticule 0,1 mm)	○	OZB-A4151	45,-
Stand	Arm curved, with 1 W LED illumination (transmitted + incident)	✓		
Stage plate	Frosted glass/∅ 59,5 mm	✓	OZB-A4815	19,-
	Black-white/∅ 59,5 mm	✓	OZB-A4816	19,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>			

✓ = Included with delivery

○ = Option



Stage plate black



Stage plate white

### EDUCATIONAL LINE

The practical and robust product for schools, training centres, the workshop and laboratory

#### Features

- With its integrated handle as well as its stable arm curved stand, the KERN OSF-4G has been specially developed for schools and workshops
- The LED reflected and transmitted illumination included as standard guarantees the very best, continuously dimmable illumination of your sample
- As well as very good optical characteristics, its ergonomic working surface means that it offers the highest level of convenience in this class
- A turnable objective with three predefined magnifications is available to make your working procedures quicker and more effective
- The eyepieces are fixed in the eyepiece tube, to stop them getting damaged or lost
- The ergonomic shape and the stable mechanism which can be adjusted extremely accurately offer a high level of functionality and enable you to work quickly and efficiently with very little effort
- A large selection of eyepieces as well as various additional external illumination units are available as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- Please find detailed information in the following model outfit list

#### Scope of application

- Training, in vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

#### Applications/Samples

- Samples with focus on three-dimensional impression (depth, thickness), e.g. insects, seeds, circuit boards, components

#### Technical data

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: One-sided
- Overall dimensions W×D×H 230×180×275 mm
- Net weight approx. 2,5 kg

#### STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective	Stand	Illumination	
<b>KERN</b>							
<b>OSF 438</b>	Binocular	WF 10×/ø 20 mm	ø 20	1×/2×/3×	Arm curved	1 W LED (incident); 0,35 W LED (transmitted)	<b>345,-</b>
<b>OSF 439</b>	Binocular	WF 10×/ø 20 mm	ø 20	1×/2×/4×	Arm curved	1 W LED (incident); 0,35 W LED (transmitted)	<b>345,-</b>

Eyepiece	Specifications – Objectives				
	Magnification	1×	2×	3×	4×
WF 5×	Total magnification	5×	10×	15×	20×
	Field of view mm	∅ 20	∅ 10	∅ 6,7	∅ 5
WF 10×	Total magnification	10×	20×	30×	40×
	Field of view mm	∅ 20	∅ 10	∅ 6,7	∅ 5
WF 15×	Total magnification	15×	30×	45×	60×
	Field of view mm	∅ 15	∅ 7,5	∅ 5	∅ 3,7
WF 20×	Total magnification	20×	40×	60×	80×
	Field of view mm	∅ 10	∅ 6,5	∅ 4,3	∅ 3,2
Working distance		57 mm	57 mm	57 mm	57 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OSF 438	OSF 439		
Eyepieces (30,5 mm)	WF 5×/∅ 16,2 mm	○ ○	○ ○	OZB-A4101	35,-
	WF 10×/∅ 20 mm	✓ ✓	✓ ✓	OZB-A4102	30,-
	WF 15×/∅ 15 mm	○ ○	○ ○	OZB-A4103	30,-
	WF 20×/∅ 10 mm	○ ○	○ ○	OZB-A4104	35,-
	WF 10×/∅ 20 mm (reticule 0,1 mm)	○	○	OZB-A4151	45,-
Stand	Arm curved, incl. handle, with LED illumination (0,35 W transmitted + 1 W incident)	✓	✓		
Stage plate	Frosted glass/∅ 59,5 mm	✓	✓	OZB-A4815	19,-
	Black-white/∅ 59,5 mm	✓	✓	OZB-A4816	19,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>				

✓ = Included with delivery

○ = Option



**LAB LINE**

The affordable and flexible stereo zoom microscope for laboratories, inspection authorities and quality controls

**Features**

- The products in the KERN OZL-44 series are stereo zoom microscopes, which will impress you with their easy handling, flexibility as well as their stability and economical price
- The LED reflected and transmitted illumination included as standard guarantees the very best illumination of your sample
- As well as excellent optical characteristics and their large working surface, these models offer the highest level of comfort in this class – ideal for training companies, workshops as well as assembly and repair workstations, e.g. in the electronics industry
- The zoom objective gives you continuous magnification of 7,5× – 36×
- The OZL-44 series is available as a binocular version. The eyepieces are fixed in the eyepiece tube, to stop them getting damaged or lost
- The pillar stand offers you the highest level of flexibility and the freedom to remove the microscope head and to integrate it into other modular systems, for example into a universal stand
- A large selection of eyepieces, external illumination units as well as auxiliary objectives are available as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- Please find detailed information in the following model outfit list

**Scope of application**

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

**Applications/Samples**

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Magnification ratio: 4,8:1
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 330×235×380 mm
- Net weight approx. 5 kg

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZL 445</b>	Binocular	WF 10×/ø 20 mm	ø 26,7 – 5,6	0,75× – 3,6×	Pillar style	1 W LED (incident); 0,35 W LED (transmitted)	<b>460,-</b>

OZL 445		Specifications - Objectives				
Eyepiece	Magnification	Standard 1,0×	Auxiliary objectives			
			0,5×	0,75×	1,5×	2,0×
WF 5×	Total magnification	3,75× - 18×	1,875× - 9×	2,81× - 13,5×	5,625× - 27×	7,5× - 36×
	Field of view mm	∅ 26 - 6	∅ 60 - 13	∅ 32 - 7	∅ 16 - 4	∅ 12,5 - 3
WF 10×	Total magnification	7,5× - 36×	3,75× - 18×	5,625× - 27×	11,25× - 54×	15× - 72×
	Field of view mm	∅ 26,7 - 5,6	∅ 53,3 - 11,1	∅ 35,5 - 7,4	∅ 17,8 - 3,7	∅ 13,3 - 2,8
WF 15×	Total magnification	11,25× - 54×	5,625× - 27×	8,44× - 40,5×	16,875× - 81×	22,5× - 108×
	Field of view mm	∅ 19 - 4,5	∅ 43 - 9,5	∅ 24 - 5,5	∅ 12 - 3	∅ 9,5 - 2
WF 20×	Total magnification	15× - 72×	7,5× - 36×	56,25× - 54×	22,5× - 108×	30× - 144×
	Field of view mm	∅ 12,5 - 3	∅ 28 - 6	∅ 16 - 3,5	∅ 8 - 2	∅ 6 - 1,5
<b>Working distance</b>		86 mm	178 mm	96 mm	42,5 mm	25,5 mm
<b>Maximum sample height</b>		100 mm	10 mm	60 mm	120 mm	135 mm

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OZL 445		
Eyepieces (30,5 mm)	WF 5×/∅ 16,2 mm	○ ○	OZB-A4101	35,-
	WF 10×/∅ 20 mm	✓ ✓	OZB-A4102	30,-
	WF 15×/∅ 15 mm	○ ○	OZB-A4103	30,-
	WF 20×/∅ 10 mm	○ ○	OZB-A4104	35,-
	WF 10×/∅ 20 mm (reticule 0,1 mm)	○	OZB-A4151	45,-
Auxiliary objectives	0,5×	○	OZB-A4201	75,-
	0,75×	○	OZB-A4202	75,-
	1,5×	○	OZB-A4204	75,-
	2,0×	○	OZB-A4205	80,-
	Soldering protection lens	○	OZB-A4251	19,-
Stand	Pillar style, with LED illumination (0,35 W transmitted + 1 W incident)	✓		
Stage plate	Frosted glass/∅ 95 mm	✓	OZB-A4805	19,-
	Black-white/∅ 95 mm	✓	OZB-A4806	19,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>			

✓ = Included with delivery

○ = Option



OZL 464  
With standard stand



OZL 465  
With ring illumination



OZL 467  
With handle

**LAB LINE**

The flexible, affordable all-rounder with zoom function for schools, training companies, inspection authorities and laboratories

**Features**

- The products in the KERN OZL-46 series are stereo zoom microscopes, which will impress you with their quality, easy handling, flexibility as well as their stability and economical price
- The LED reflected and transmitted illumination included as standard guarantees the very best illumination of your sample
- The highlight of the OZL 465/OZL 466 is the strong, continuously dimmable, integrated LED ring illumination in the objective housing, which ensures uniform, shadow-free illumination. An LED transmitted light variant is also included
- As well as excellent optical characteristics and their large working surface, these models offer the highest level of comfort in this class – ideal for training companies, workshops as well as assembly and repair workstations, e.g. in the electronics industry
- The zoom objective offers you continuous magnification from 7×–45×
- The KERN OZL-46 series is available as a binocular or trinocular version
- The pillar stand offers you the highest level of flexibility and the freedom to remove the microscope head and to integrate it into other modular systems, for example into a universal stand
- With its integrated handle as well as its stable arm curved stand, the KERN OZL 467/OZL 468 has been specially developed for schools and workshops
- A large selection of eyepieces, external illumination units as well as auxiliary objectives are available as accessories
- 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**

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

**Applications/Samples**

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Magnification ratio: 6,4:1
- Light distribution 50:50
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 300×240×420 mm
- Net weight approx. 4 kg

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZL 463</b>	Binocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>520,-</b>
<b>OZL 464</b>	Trinocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>570,-</b>
<b>OZL 465</b>	Binocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>550,-</b>
<b>OZL 466</b>	Trinocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>620,-</b>
<b>OZL 467</b>	Binocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Arm curved	3 W LED (incident); 3 W LED (transmitted)	<b>510,-</b>
<b>OZL 468</b>	Trinocular	HWF 10×/ø 20 mm	ø 28,6 – 4,4	0,7× – 4,5×	Arm curved	3 W LED (incident); 3 W LED (transmitted)	<b>580,-</b>

Eyepiece	Specifications - Objectives					
	Magnification	Standard 1,0×	Auxiliary objectives			
			0,5×	0,75×	1,5×	2,0×
HSWF 10×	Total magnification	7× - 45×	3,5× - 22,5×	5,3× - 33,8×	10,5× - 67,5×	14× - 90×
	Field of view mm	∅ 28,6 - 4,4	∅ 57,1 - 8,9	∅ 38,1 - 5,9	∅ 19 - 3	∅ 14,3 - 2,2
HWF 15×	Total magnification	10,5× - 67,5×	5,3× - 33,8×	7,9× - 50,6×	15,5× - 101,3×	21× - 135×
	Field of view mm	∅ 21,4 - 3,3	∅ 42,9 - 6,7	∅ 28,5 - 4,4	∅ 14,3 - 2,2	∅ 10,7 - 1,7
HSWF 20×	Total magnification	14× - 90×	7× - 45×	10,5× - 67,5×	21× - 135×	28× - 180×
	Field of view mm	∅ 14,3 - 2,2	∅ 28,6 - 4,4	∅ 19,1 - 2,9	∅ 9,5 - 1,5	∅ 7,1 - 1,1
HWF 25×	Total magnification	17,5× - 112,5×	8,8× - 56,3×	13,1× - 91,9×	26,3× - 168,8×	35× - 225×
	Field of view mm	∅ 12,9 - 2,0	∅ 25,7 - 4,0	∅ 17,2 - 2,7	∅ 8,6 - 1,3	∅ 6,4 - 1,0
<b>Working distance</b>		105 mm	177 mm	120 mm	47 mm	26 mm
<b>Maximum sample height</b>		140 mm	35 mm	80 mm	165 mm	185 mm

Model outfit	Model KERN						Order number	Price/piece excl. of VAT ex works €	
	OZL 463	OZL 464	OZL 465	OZL 466	OZL 467	OZL 468			
Eyepieces (30,0 mm)	HWF 10×/∅ 20 mm	✓✓	✓✓	✓✓	✓✓	✓✓	✓✓	OZB-A4631	40,-
	HSWF 15×/∅ 15 mm	○	○	○	○	○	○	OZB-A4632	50,-
	HWF 20×/∅ 10 mm	○	○	○	○	○	○	OZB-A4633	50,-
	HSWF 25×/∅ 9 mm	○	○	○	○	○	○	OZB-A4634	55,-
Auxiliary objectives	0,5×	○	○			○	○	OZB-A4641	80,-
	0,75×	○	○			○	○	OZB-A4644	80,-
	1,5×	○	○			○	○	OZB-A4642	80,-
	2,0×	○	○			○	○	OZB-A4643	80,-
	Soldering protection lens	○	○			○	○	OZB-A4645	35,-
C-Mount	1× (focus adjustable)		✓		✓		✓	OZB-A4809	50,-
	0,3× (focus adjustable)		○		○		○	OZB-A4810	85,-
	0,5× (focus adjustable)		○		○		○	OZB-A4811	95,-
Eyepiece camera adapter	1,0×; for fitting an eyepiece camera to the trinocular connection of the microscope		○		○		○	OZB-A4863	35,-
Stand	Pillar style, with 3 W-LED illumination (transmitted + incident)	✓	✓						
	Pillar style, with 3 W-LED illumination (transmitted)			✓	✓				
	Arm curved, incl. handle, with 3 W-LED illumination (transmitted + incident)					✓	✓		
Ring illumination	Integrated into the microscope head as incident illumination			✓	✓				
Stage plate	Frosted glass/∅ 95 mm	✓	✓	✓	✓	✓	✓	OZB-A4670	19,-
	Black-white/∅ 95 mm	✓	✓	✓	✓	✓	✓	OZB-A4806	19,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>								

✓ = Included with delivery

○ = Option



### LAB LINE

Stereo zoom microscope with or without halogen illumination, for the laboratory, training centres, quality control or agriculture

#### Features

- The KERN OZL-45 stereo zoom microscope series will impress you with its excellent optical characteristics, easy operation and high level of ergonomic working comfort
- The Halogen incident and transmitted illumination included as standard guarantees the very best illumination of your sample
- The high-quality optics, together with a large working surface offers the highest level of comfort for your applications
- The zoom objective offers you continuous magnification from 7,5×–50×
- The KERN OZL-45 series is available as a binocular version
- The pillar stand offers you the highest level of flexibility and the freedom to remove the microscope head and to integrate it into other modular systems, for example into a universal stand
- A large selection of eyepieces, external illumination units as well as auxiliary objectives are available as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- Please find detailed information in the following model outfit list

#### Scope of application

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

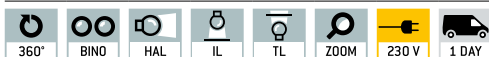
#### Applications/Samples

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

#### Technical data

- Optical system: Greenough optics
- Brightness adjustable
- Tube 45° inclined
- Magnification ratio: 6,7:1
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 330×270×460 mm
- Net weight approx. 5 kg

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZL 45 1</b>	Binocular	HSWF 10×/ø 23 mm	ø 33 – 5	0,75× – 5,0×	Pillar style	10 W Halogen (incident) 10 W Halogen (transmitted)	<b>650,-</b>



Eyepiece	Specifications - Objectives				
	Magnification	Standard 1,0×	Auxiliary objectives		
			0,5×	0,75×	2,0×
HWF 5×	Total magnification	3,75× - 25×	1,875× - 12,5×	2,813× - 18,75×	7,5× - 50×
	Field of view mm	∅ 31 - 4,6	∅ 61,3 - 9,2	∅ 41,3 - 6,1	∅ 16 - 2,5
HSWF 10×	Total magnification	7,5× - 50×	3,75× - 25×	5,625× - 37,5×	15× - 100×
	Field of view mm	∅ 33 - 5	∅ 65 - 10	∅ 44 - 6,7	∅ 16 - 2,5
HWF 15×	Total magnification	11,25× - 75×	5,625× - 37,5×	8,438× - 56,25×	22,5× - 150×
	Field of view mm	∅ 24 - 4,2	∅ 48 - 8,5	∅ 32 - 5,6	∅ 12 - 2
HSWF 20×	Total magnification	15× - 100×	7,5× - 50×	11,25× - 75×	30× - 200×
	Field of view mm	∅ 20 - 3,5	∅ 40 - 7	∅ 26,7 - 4,7	∅ 10 - 1,8
HWF 25×	Total magnification	18,75× - 125×	9,375× - 62,5×	14,063× - 93,75×	37,5× - 255×
	Field of view mm	∅ 15,8 - 2,4	∅ 31,5 - 4,8	∅ 24,1 - 3,2	∅ 7,9 - 1,2
<b>Working distance</b>		113 mm	177 mm	117 mm	35 mm
<b>Maximum sample height</b>		120 mm	60 mm	90 mm	165 mm

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OZL 451		
Eyepieces (30,0 mm)	HWF 5×/∅ 23,2 mm	○ ○	OZB-A4112	40,-
	HSWF 10×/∅ 23 mm	✓ ✓	OZB-A4118	40,-
	HWF 15×/∅ 15 mm	○ ○	OZB-A4119	40,-
	HSWF 20×/∅ 14,5 mm	○ ○	OZB-A4120	60,-
	HWF 25×/∅ 11,7 mm	○ ○	OZB-A4121	60,-
Auxiliary objectives	0,5×	○	OZB-A4209	120,-
	0,75×	○	OZB-A4210	120,-
	2,0×	○	OZB-A4206	115,-
Stand	Pillar style, with 12 V/ 10 W Halogen Illumination (transmitted + incident)	✓		
Stage plate	Frosted glass/∅ 95 mm	✓	OZB-A4805	19,-
	Black-white/∅ 95 mm	✓	OZB-A4806	19,-
Illumination	10 W spare bulb (transmitted + incident)	✓	OZB-A4804	19,-
Mechanical stage (Pre-assembling on request)	Stage size W×D 180×155 mm, Travel 75×55 mm, for transmitted and incident illumination	○	OZB-A4605	235,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>			

✓ = Included with delivery

○ = Option



Dimmable, integrated LED ring illumination

### LAB LINE

The practical and flexible stereo zoom microscope with integrated LED ring illumination and large zoom range

#### Features

- The KERN OZL-456 stereo zoom microscope series will impress you with its excellent optical characteristics, easy operation and its integrated LED ring illumination unit
- The highlight of the KERN OZL-456 is the strong, continuously dimmable, integrated LED ring illumination in the objective housing, which ensures uniform, shadow-free illumination. An LED transmitted light variant is also included
- With its built-in, top-quality optics and powerful, integrated LED illumination unit, this model is a special all-rounder for all areas of application
- The zoom objective offers you continuous magnification from 7,5× – 50×
- As standard, the KERN OZL-45R series is provided as a binocular version with 10× eyepieces with a field of view with a diameter of 23 mm
- The arm curved stand gives you a large working area as well as a precise adjustment mechanism
- A large selection of eyepieces as well as auxiliary objectives are available as accessories
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- Please find detailed information in the following model outfit list

#### Scope of application

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control

#### Applications/Samples

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

#### Technical data

- Optical system: Greenough optics
- Incident illumination dimmable
- Tube 45° inclined
- Magnification ratio: 6,7:1
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 320×275×420 mm
- Net weight approx. 4,5 kg

#### STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZL 456</b>	Binocular	HSWF 10×/ø 23 mm	ø 33 – 5	0,75× – 5,0×	Arm curved	1 W LED (incident); 0,21 W LED (transmitted)	<b>730,-</b>

Eyepiece	Specifications – Objectives	
	Magnification	Standard 1,0×
HWF 5×	Total magnification	3,75× – 25×
	Field of view mm	∅ 31 – 4,6
HSWF 10×	Total magnification	7,5× – 50×
	Field of view mm	∅ 33 – 5
HWF 15×	Total magnification	11,25× – 75×
	Field of view mm	∅ 24 – 4,2
HSWF 20×	Total magnification	15× – 100×
	Field of view mm	∅ 20 – 3,5
HWF 25×	Total magnification	18,75× – 125×
	Field of view mm	∅ 15,8 – 2,4
Working distance		113 mm
Maximum sample height		45 mm

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OZL 456		
Eyepieces (30,0 mm)	HWF 5×/∅ 23,2 mm	○ ○	OZB-A4112	40,-
	HSWF 10×/∅ 23 mm	✓ ✓	OZB-A4118	40,-
	HWF 15×/∅ 15 mm	○ ○	OZB-A4119	40,-
	HSWF 20×/∅ 14,5 mm	○ ○	OZB-A4120	60,-
	HWF 25×/∅ 11,7 mm	○ ○	OZB-A4121	60,-
Stand	Arm curved, with LED illumination (0,21 W transmitted + 1 W incident)	✓		
Stage plate	Frosted glass/∅ 95 mm	✓	OZB-A4805	19,-
	Black-white/∅ 95 mm	✓	OZB-A4806	19,-
Mechanical stage (Pre-assembling on request)	Stage size W×D 180×155 mm, Travel 75×55 mm, for transmitted and incident illumination	○	OZB-A4605	235,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>			

✓ = Included with delivery

○ = Option



## LAB LINE

First-class optics and strong illumination combined with a high level of flexibility

### Features

- The KERN OZM series is a range of excellent stereo zoom microscopes with above-average optical features
- The ergonomic shape allows a simple, effortless working over a period of several hours
- The extraordinarily strong and continuously dimmable 3 W LED reflected and transmitted illumination ensures a flexible and particularly good level of illumination for your sample
- With its large working distance, an extra large field of view and its brilliant resolution, the KERN OZM provides sharp, high-contrast, colour-true images
- The zoom objective gives you continuous magnification from 7,5×–45×
- There is a choice of a binocular model as well as a trinocular model for connecting a camera for documentation purposes and for quality reports
- The pillar stand is particularly flexible due to its variable and sturdy adjustment mechanism and therefore enables ergonomic working procedures
- A large selection of eyepieces, (universal) stands, a darkfield kit, external illumination units as well as auxiliary objectives and more are available as accessories
- 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

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control, electronics and semiconductor industry, assembly and repair

### Applications/Samples

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

### Technical data

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Magnification ratio: 6,4:1
- Light distribution OZM 543/544: 50:50
- Interpupillary distance 52 – 76 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H  
330×285×440 mm
- Net weight approx. 4,5 kg

#### STANDARD



#### OPTION



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZM 542</b>	Binocular	HSWF 10×/ø 23 mm	ø 32,8 – 5,1	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>1130,-</b>
<b>OZM 544</b>	Trinocular	HSWF 10×/ø 23 mm	ø 32,8 – 5,1	0,7× – 4,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>1420,-</b>

Eyepiece	Specifications - Objectives					
	Magnification	Standard 1,0×	Auxiliary objectives			
			0,5×	0,7×	1,5×	2×
HSWF 10×	Total magnification	7× - 45×	3,5× - 22,5×	4,9× - 31,5×	10,5× - 67,5×	14× - 90×
	Field of view mm	∅ 32,8 - 5,1	∅ 65,7 - 10,2	∅ 46,9 - 7,3	∅ 21,9 - 3,4	∅ 16,4 - 2,6
SWF 15×	Total magnification	10,5× - 67,5×	5,3× - 33,8×	7,4× - 47,2×	15,8× - 101,3×	21× - 135×
	Field of view mm	∅ 24,3 - 3,8	∅ 48,6 - 7,6	∅ 34,7 - 5,4	∅ 16,2 - 2,5	∅ 12,1 - 1,9
SWF 20×	Total magnification	14× - 90×	7× - 45×	9,8× - 63×	21× - 135×	28× - 180×
	Field of view mm	∅ 20 - 3,1	∅ 40 - 6,2	∅ 28,6 - 4,4	∅ 13,3 - 2,1	∅ 10 - 1,6
SWF 30×	Total magnification	21× - 135×	10,5× - 67,5×	14,7× - 94,5×	31,5× - 202,5×	42× - 270×
	Field of view mm	∅ 12,9 - 2	∅ 25,7 - 4	∅ 18,4 - 2,9	∅ 8,6 - 1,6	∅ 6,4 - 1
<b>Working distance</b>		110 mm	195 mm	145 mm	50 mm	35 mm
<b>Maximum sample height</b>		130 mm	30 mm	65 mm	160 mm	175 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZM 542	OZM 544		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○○	○○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○○	○○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○○	○○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	OZB-A5514	115,-
Achromatic auxiliary objectives	0,5×	○	○	OZB-A5612	140,-
	0,7×	○	○	OZB-A5613	140,-
	1,5×	○	○	OZB-A5615	140,-
	2,0×	○	○	OZB-A5616	145,-
	Soldering protection lens	○	○	OZB-A5614	45,-
C-Mount	0,3× (focus adjustable)		○	OZB-A5701	125,-
	0,5× (focus adjustable)		○	OZB-A5702	125,-
	1,0× (focus adjustable)		○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703		○	OZB-A5704	260,-
	for SLR cameras (Nikon)		○	OZB-A5706	260,-
	for SLR cameras (Olympus)		○	OZB-A5707	260,-
	for SLR cameras (Canon)		○	OZB-A5708	260,-
Darkfield unit	Darkfield unit	○	○	OZB-A4601	70,-
Object clamp	Object clamp	○	○	OBB-A6205	35,-
Stand	Pillar style, without illumination				
	Pillar style, with 3 W LED illumination (transmitted + incident)	✓	✓		
	Please find more stands in the catalogue on page 79 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>				
Stage plate	Frosted glass/∅ 94,5 mm	✓	✓	OZB-A5192	19,-
	Black-white/∅ 94,5 mm	✓	✓	OZB-A5191	19,-
	Clear glass/∅ 94,5 mm	○	○	OZB-A5190	19,-
Mechanical stage (Pre-assembling on request)	Stage size W×D 188×160 mm, Travel 76×65 mm, for transmitted and incident illumination	○	○	OZB-A5781	210,-
	Stage size W×D 180×175 mm, Travel 100×86 mm, for incident illumination only	○	○	OZB-A5782	245,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>				

✓ = Included with delivery

○ = Option



**LAB LINE**

Professional and powerful – thanks to its extremely large magnification range, strong illumination and first-class optics

**Features**

- The KERN OZP stereo zoom microscope stands out through its above-average magnification range and its robust shape which is also ergonomic, it enables effortless, simple working over a period of several hours
- The KERN OZP series is available as a strong, continuously adjustable 3 W LED reflected and transmitted light variant for the very best illumination of your sample or as a variant without illumination
- With its large working distance, an extra large field of view and brilliant resolution, the KERN OZP provides sharp, high-contrast and colour-true images
- The extremely large, continuously adjustable magnification range from 6 to 55 times magnification means that you can work quickly and effectively
- There is a choice of a binocular model as well as a trinocular model for connecting a camera for documentation purposes and for quality reports
- The pillar stand is particularly flexible due to its variable and sturdy adjustment mechanism and therefore enables ergonomic working procedures
- A large selection of eyepieces, (universal) stands, a darkfield kit, external illumination units as well as auxiliary objectives and more are available as accessories
- 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**

- Zoology and botany, quality control, electronics and semiconductor industry, assembly and repair

**Applications/Samples**

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube: 35° inclined
- Magnification ratio: 9,2:1
- Light distribution OZP 557/558: 50:50
- Interpupillary distance 52 – 76 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 330×285×470 mm
- Net weight approx. 4,5 kg

STANDARD



OPTION



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZP 556</b>	Binocular	HSWF 10×/ø 23 mm	ø 38,3 – 4,2	0,6× – 5,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>1300,-</b>
<b>OZP 558</b>	Trinocular	HSWF 10×/ø 23 mm	ø 38,3 – 4,2	0,6× – 5,5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>1600,-</b>

Eyepiece	Specifications - Objectives					
	Magnification	Standard 1,0×	Auxiliary objectives			
			0,5×	0,7×	1,5×	2×
HSWF 10×	Total magnification	6× - 55×	3× - 27,5×	4,2× - 38,5×	9× - 82,5×	12× - 110×
	Field of view mm	∅ 38,3 - 4,2	∅ 76,7 - 8,4	∅ 54,8 - 6	∅ 25,6 - 2,8	∅ 19,2 - 2,1
SWF 15×	Total magnification	9× - 82,5×	4,5× - 41,25×	6,3× - 57,75×	13,5× - 123,75×	18× - 165×
	Field of view mm	∅ 28,3 - 3,1	∅ 56,7 - 6,2	∅ 40,5 - 4,4	∅ 18,9 - 2,1	∅ 14,2 - 1,5
SWF 20×	Total magnification	12× - 110×	6× - 55×	8,4× - 77×	18× - 165×	24× - 220×
	Field of view mm	∅ 23,3 - 2,5	∅ 46,7 - 5,1	∅ 33,3 - 3,6	∅ 15,6 - 1,7	∅ 11,7 - 1,3
SWF 30×	Total magnification	18× - 165×	9× - 82,5×	12,6× - 115,5×	27× - 247,5×	36× - 330×
	Field of view mm	∅ 15 - 1,6	∅ 30 - 3,3	∅ 21,4 - 2,3	∅ 10 - 1,1	∅ 7,5 - 0,8
<b>Working distance</b>		108 mm	195 mm	145 mm	50 mm	35 mm
<b>Maximum sample height</b>		110 mm	10 mm	45 mm	140 mm	150 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZP 556	OZP 558		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○○	○○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○○	○○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○○	○○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	OZB-A5514	115,-
Achromatic auxiliary objectives	0,5×	○	○	OZB-A5612	140,-
	0,7×	○	○	OZB-A5613	140,-
	1,5×	○	○	OZB-A5615	140,-
	2,0×	○	○	OZB-A5616	145,-
	Soldering protection lens	○	○	OZB-A5614	45,-
C-Mount	0,3× (focus adjustable)		○	OZB-A5701	125,-
	0,5× (focus adjustable)		○	OZB-A5702	125,-
	1,0× (focus adjustable)		○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703		○	OZB-A5704	260,-
	for SLR cameras (Nikon)		○	OZB-A5706	260,-
	for SLR cameras (Olympus)		○	OZB-A5707	260,-
	for SLR cameras (Canon)		○	OZB-A5708	260,-
Darkfield unit	Darkfield unit	○	○	OZB-A4601	70,-
Object clamp	Object clamp	○	○	OBB-A6205	35,-
Stand	Pillar style, without illumination				
	Pillar style, with 3 W LED illumination (transmitted + incident)	✓	✓		
	Please find more stands in the catalogue on page 79 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>				
Stage plate	Frosted glass/∅ 94,5 mm		✓	OZB-A5192	19,-
	Black-white/∅ 94,5 mm	✓	✓	OZB-A5191	19,-
	Clear glass/∅ 94,5 mm		○	OZB-A5190	19,-
Mechanical stage (Pre-assembling on request)	Stage size W×D 188×160 mm, Travel 76×65 mm, for incident and transmitted illumination	○	○	OZB-A5781	210,-
	Stage size W×D 180×175 mm, Travel 100×86 mm, for incident illumination only	○	○	OZB-A5782	245,-
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>				

✓ = Included with delivery

○ = Option



OZR 564/OZS 574  
With illumination



OZR 563/OZS 573  
Without illumination

**PROFESSIONAL LINE**

Professional stereo zoom microscope with parallel optics for excellent images, depth of field, contrast and fatigue-free working

**Features**

- The KERN OZR/OZS series is a special, high-quality stereo zoom microscope with parallel optics for demanding analyses
- The KERN OZR/OZS series is available as a strong, continuously adjustable 3 W LED reflected and transmitted light variant for the very best illumination of your sample or as a variant without illumination
- The parallel optical system is a high-quality optical system and provides excellent images with the best contrast, colour and depth of field with fatigue-free working. Refocusing is also only necessary in very few cases when magnifying the zoom
- The continuously adjustable magnification range from 8 to 50 times (OZR-5) or 80 times (OZS-5) magnification means that you can work quickly and effectively
- As standard, the models of the KERN OZR/OZS series are trinocular and are therefore equipped for connecting a camera for documentation purposes and for quality reports
- The pillar stand is particularly flexible due to its variable and sturdy adjustment mechanism and therefore enables ergonomic working procedures
- A large selection of eyepieces, (universal) stands, a darkfield kit, external illumination units as well as auxiliary objectives and more are available as accessories
- 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**

- In vitro fertilisation, detection of parasites, zoology and botany, tissue preparation, section, quality control, electronics and semiconductor industry, assembly and repair

**Applications/Samples**

- Samples with focus on three-dimensional impression, zoom with variable magnification (depth, thickness), e.g. insects, seeds, circuit boards, components

**Technical data**

- Optical system: Parallel optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Magnification ratio OZR-5: 6,25:1
- Magnification ratio OZS-5: 10:1
- Light distribution 50:50
- Interpupillary distance 52 – 76 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 305×300×540 mm
- Net weight approx. 5,5 kg

STANDARD



OPTION



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZR 563*</b>	Trinocular	HWF 10×/ø 22 mm	ø 27,5 – 4,4	0,8× – 5×	Pillar style	–	<b>990,-</b>
<b>OZR 564*</b>	Trinocular	HWF 10×/ø 22 mm	ø 27,5 – 4,4	0,8× – 5×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>1750,-</b>
<b>OZS 573*</b>	Trinocular	HWF 10×/ø 22 mm	ø 27,5 – 2,75	0,8× – 8×	Pillar style	–	<b>1950,-</b>
<b>OZS 574</b>	Trinocular	HWF 10×/ø 22 mm	ø 27,5 – 2,75	0,8× – 8×	Pillar style	3 W LED (incident); 3 W LED (transmitted)	<b>3090,-</b>

\*ONLY WHILE STOCKS LAST

Price reduction



Eyepiece	Specifications - Objectives								
	Magnification	Standard Plan 1,0×		Achr. objective 0,5×		Achr. objective 0,7×		Achr. objective 1,5× (Auxiliary)	
		OZR 563	OZS 573	OZR 563	OZS 573	OZR 563	OZS 573	OZR 563	OZS 573
HWF 10×	Total magnification	8× - 50×	8× - 80×	4× - 25×	4× - 40×	5,6× - 35×	5,6× - 56×	12× - 75×	12× - 120×
	Field of view mm	∅ 27,5 - 4,4	∅ 27,5 - 2,75	∅ 55 - 8,8	∅ 55 - 5,5	∅ 39,3 - 6,3	∅ 39,3 - 3,93	∅ 18,33 - 2,93	∅ 18,33 - 1,83
SWF 15×	Total magnification	12× - 75×	12× - 120×	6× - 37,5×	6× - 60×	8,4× - 5,5×	8,4× - 84×	18× - 112,5×	18× - 180×
	Field of view mm	∅ 21,25 - 3,4	∅ 21,25 - 2,13	∅ 42,5 - 6,8	∅ 42,5 - 4,25	∅ 30,36 - 4,86	∅ 30,36 - 3,04	∅ 14,17 - 2,27	∅ 14,17 - 1,42
SWF 20×	Total magnification	16× - 100×	16× - 160×	8× - 50×	8× - 80×	11,2× - 70×	11,2× - 112×	24× - 150×	24× - 240×
	Field of view mm	∅ 17,5 - 2,8	∅ 17,5 - 1,75	∅ 35 - 5,6	∅ 35 - 3,5	∅ 25 - 4	∅ 25 - 2,5	∅ 11,67 - 1,87	∅ 11,67 - 1,17
SWF 30×	Total magnification	24× - 150×	24× - 240×	12× - 75×	12× - 120×	16,8× - 105×	16,8× - 168×	36× - 225×	36× - 360×
	Field of view mm	∅ 11,25 - 1,8	∅ 11,25 - 1,13	∅ 22,5 - 3,6	∅ 22,5 - 2,25	∅ 16,1 - 2,57	∅ 16,1 - 1,61	∅ 7,5 - 1,2	∅ 7,5 - 0,75
<b>Working distance</b>		91 mm		186 mm		135 mm		40 mm	
<b>Maximum sample height</b>		100 mm		30 mm		80 mm		125 mm	

Model outfit		Model KERN				Order number	Price/piece excl. of VAT ex works €
		OZR 563	OZR 564	OZS 573	OZS 574		
Eyepieces (30,0 mm)	HWF 10×/∅ 22 mm	✓✓	✓✓	✓✓	✓✓	OZB-A5502	65,-
	SWF 15×/∅ 17 mm	○○	○○	○○	○○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○○	○○	○○	○○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○○	○○	○○	○○	OZB-A5506	90,-
	HWF 10×/∅ 22 mm (reticule 0,1 mm)	○	○	○	○	OZB-A5511	115,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	○	○	OZB-A5514	115,-
<b>Plan achromatic objective</b>	1,0×	✓	✓	✓	✓	OZB-A5603	500,-
<b>Achromatic objectives</b>	0,5×	○	○	○	○	OZB-A5601	210,-
	0,7×	○	○	○	○	OZB-A5602	210,-
	1,5× Only in combination with OZB-A5603	○	○	○	○	OZB-A5604	270,-
<b>Trinocular beamsplitter</b>	Division 100:0	✓	✓	✓	✓	OZB-A5401	580,-
	Division 50:50	○	○	○	○	OZB-A5402	580,-
<b>C-Mount</b>	0,3× (focus adjustable)	○	○	○	○	OZB-A5701	125,-
	0,5× (focus adjustable)	○	○	○	○	OZB-A5702	125,-
	1,0× (focus adjustable)	○	○	○	○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703	○	○	○	○	OZB-A5704	260,-
	for SLR cameras (Nikon)	○	○	○	○	OZB-A5706	260,-
	for SLR cameras (Olympus)	○	○	○	○	OZB-A5707	260,-
	for SLR cameras (Canon)	○	○	○	○	OZB-A5708	260,-
<b>Darkfield unit</b>	Darkfield unit		○		○	OZB-A4601	70,-
<b>Object clamp</b>	Object clamp	○	○	○	○	OBB-A6205	35,-
<b>Stand</b>	Pillar style, without illumination	✓		✓			
	Pillar style, with 3 W LED illumination (transmitted + incident)		✓		✓		
<b>Stage plate</b>	Frosted glass/∅ 94,5 mm		✓		✓	OZB-A5192	19,-
	Black-white/∅ 94,5 mm	✓	✓	✓	✓	OZB-A5191	19,-
	Clear glass/∅ 94,5 mm		○		○	OZB-A5190	19,-
<b>Mechanical stage</b> (Pre-assembling on request)	Stage size W×D 188×160 mm, Travel 76×65 mm, for incident and transmitted illumination	○	○	○	○	OZB-A5781	210,-
	Stage size W×D 180×175 mm, Travel 100×86 mm, for incident illumination only	○	○	○	○	OZB-A5782	245,-
<b>External illumination</b>	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>						

✓ = Included with delivery

○ = Option



Plug in for power supply

**PROFESSIONAL LINE**

The coaxial with parallel optics for excellent contrast and depth of field

**Features**

- The KERN OZC has been developed specially to meet requirements for high contrast and depth of field. These devices are absolutely essential for the LCD/LED electronics industry
- The coaxial 2 W LED reflected illumination which is integrated into the objective guarantees selective depth of focus, so that even low-lying sections can be recorded (e.g. the bottom of a drilled hole)
- The parallel optics is a high-quality optical system and provides excellent images with the best contrast, colour and depth of field with fatigue-free working. Refocusing is also only necessary in very few cases when magnifying the zoom
- The large, adjustable magnification range from 18 to 65 times gives you continuous zoom when you are working
- As standard, the KERN OZC is trinocular and is therefore equipped for connecting a camera for documentation purposes and for quality reports
- The arm curved stand ensures precise adjustment and focusing of your sample. The stand base is particularly heavy and therefore offers a high level of stability and an extremely secure footing
- A large selection of eyepieces and a mechanical stage extension are available as accessories
- 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**

- LCD/LED electronics, semiconductor technology

**Applications/Samples**

- Samples with focus on three-dimensional impression (depth, thickness), zoom for variable magnification, e.g. LCD/LED electronics, circuit boards, ICs

**Technical data**

- Optical system: Parallel optics
- Brightness adjustable
- Tube 45° inclined
- Magnification ratio: 3,6:1
- Light distribution 50:50
- Interpupillary distance 52 - 76 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 305×180×405 mm
- Net weight approx. 6,6 kg.

STANDARD



OPTION



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZC 583</b>	Trinocular	HSWF 10×/ø 23 mm	ø 12,78 - 3,5	1,8× - 6,5×	Arm curved	2 W LED (coaxial incident)	<b>900,-</b>

ONLY WHILE STOCKS LAST

Price reduction

# Coaxial microscope KERN OZC-5

Eyepiece	Specifications - Objectives	
	Magnification	Standard 1,0×
HWF 10×	Total magnification	18× - 65×
	Field of view mm	∅ 12,78 - 3,5
SWF 15×	Total magnification	27× - 97,5×
	Field of view mm	∅ 9,5 - 2,6
SWF 20×	Total magnification	36× - 130×
	Field of view mm	∅ 7,78 - 2,2
SWF 30×	Total magnification	54× - 195×
	Field of view mm	∅ 5 - 1,4
<b>Working distance</b>		92 mm
<b>Maximum sample height</b>		35 mm

04

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OZC 583		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	OZB-A5514	115,-
C-Mount	0,3× (focus adjustable)	○	OZB-A5701	125,-
	0,5× (focus adjustable)	○	OZB-A5702	125,-
	1,0× (focus adjustable)	○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703	○	OZB-A5704	260,-
	for SLR cameras (Nikon)	○	OZB-A5706	260,-
	for SLR cameras (Olympus)	○	OZB-A5707	260,-
	for SLR cameras (Canon)	○	OZB-A5708	260,-
Stand	Arm curved, without illumination	✓		
External illumination	Please find the information about external illumination units in the catalogue on page 83 and on our website <a href="http://www.kern-sohn.com">www.kern-sohn.com</a>			

✓ = Included with delivery

○ = Option



Side view

**LAB LINE**

The specialist for jewellers and the gem industry

**Features**

- The KERN OZG series has been specially developed for jewellers and mineral observations in the gem industry. Precious stones and gems can be checked and handled with this stereo zoom microscope
- You have a choice of a strong halogen transmitted illumination unit as well as halogen reflected and transmitted illumination variants, each with an additional frontal illumination
- As well as very good optical characteristics, this model forms an ideal package with its dark field unit with object clamp which is included in the scope of delivery
- The KERN OZG 493 is fitted with a pole stand which has both integrated bright halogen light units with incident and transmitted illumination, as well as additional front lighting
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of delivery
- Please find detailed information in the following model outfit list

**Scope of application**

- Jewellers and gem industry

**Applications/Samples**

- Samples with focus on three-dimensional impression (depth, thickness), zoom for variable magnification, special stand for processing workpieces e.g. gems, components, precious stones

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable
- Tube 45° inclined
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Magnification ratio: 5,1:1
- Overall dimensions W×D×H 310×170×350 mm
- Net weight approx. 5 kg

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Tube	Eyepiece	Field of view mm	Objective Zoom	Stand	Illumination	
<b>KERN</b>							
<b>OZG 493</b>	Binocular	WF 10×/ø 20 mm	ø 26,7 – 5,6	0,7× – 3,6×	Pillar style	10 W Halogen (incident) 10 W Halogen (transmitted) 10 W Fluorescence (front illumination)	<b>520,-</b>

# Gem microscope KERN OZG-4

OZG 493		
Specifications - Objectives		
Eyepiece	Magnification	Standard 1,0×
WF 5×	Total magnification	3,75× - 18×
	Field of view mm	∅ 26 - 6
WF 10×	Total magnification	7,5× - 36×
	Field of view mm	∅ 26,7 - 5,6
WF 15×	Total magnification	11,25× - 54×
	Field of view mm	∅ 19 - 4,5
WF 20×	Total magnification	15× - 72×
	Field of view mm	∅ 12,5 - 3
Working distance		86 mm

04

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OZG 493		
Eyepieces (30,5 mm)	WF 5×/∅ 16,2 mm	○ ○	OZB-A4101	35,-
	WF 10×/∅ 20 mm	✓ ✓	OZB-A4102	30,-
	WF 15×/∅ 15 mm	○ ○	OZB-A4103	30,-
	WF 20×/∅ 10 mm	○ ○	OZB-A4104	35,-
Darkfield unit	Darkfield unit	✓	OZB-A4601	70,-
Object clamp	Object clamp (steel wire)	✓	OZB-A4604	30,-
Stand	Pillar style, with 12 V/ 10 W Halogen (transmitted + incident) and 10 W Fluorescent illumination (front)	✓		
Stage plate	Frosted glass/∅ 95 mm	✓	OZB-A4805	19,-
	Black-white/∅ 95 mm	✓	OZB-A4806	19,-
Illumination	10 W spare bulb (transmitted + incident)	✓	OZB-A4804	19,-

✓ = Included with delivery

○ = Option

## 5 Video microscopes





OIV 254 Snapshot button

The comprehensive digital solution for increased working comfort when carrying out continuous monitoring work in industry.

**Features** **Technical data**

- The Kern OIV-2 is a video microscope which has been constructed to optimise digital stereo microscopy. Our well-conceived, comprehensive solution with axial optical unit enables immediate, simple display of your samples on the screen.
- The LED incident illumination unit (ring) included as standard guarantees the very best illumination of your sample.
- Combined with the large working surface, recording objects on the screen is ideally suited for monitoring, analysis and documentation in industrial environments.
- The excellent optical unit enables continuous sharp image tracking across the entire zoom range from 0.7×–5×.
- The powerful 2.0 megapixel camera of the microscope without eyepieces offers, thanks to the HDMI output, smooth live monitoring of your samples from the HD monitor. In addition, the software which is easy to use, the USB stick as well as the USB mouse which are integral components of the delivery, mean you can process and store your results digitally.
- With the OIV 254 model, there is the option of image capture at the push of a button, without having to detour via the software. Whereas the OIV 255 guarantees software-controlled taking of images and videos with additional, documentation functions
- A protective dust cover, as well as multi-lingual user instructions are included in the scope of the delivery

- Optical system: Axial
- Brightness adjustable
- Screen: 12", 1920×1080 HD, -5°–15° inclination
- Magnification ratio: 7,1:1
- Stand: arm curved
- Illumination: 2 W LED ring (incident)
- Data storage: External using USB (Max 128 GB)
- Working distance: 105 mm
- Maximum sample height: 100 mm
- Overall dimensions W×D×H 320×260×483 mm
- Net weight approx. 6 kg

**Accessories**

- Auxiliary objective 0,5×, KERN OZB-A2101, € 230,-

STANDARD

LED	IL	ZOOM	USB 2.0	HDMI	230 V	1 DAY

Model	Standard configuration						Price excl. of VAT ex works €
	Resolution camera	Interface	Sensor	Field of view mm	Objective Zoom	Software functions	
<b>KERN OIV 254</b>	2 MP	HDMI (60 FPS)	CMOS 1/2"	∅ 29,82–4,18	0,7×–5×	Image capture	<b>2450,-</b>
<b>OIV 255</b>	2 MP	HDMI (60 FPS)	CMOS 1/2"	∅ 29,82–4,18	0,7×–5×	Images and videos, documentation	<b>2790,-</b>

NEW



Side view with screen connected (not included with delivery)

05

## The professional video microscope with auto-focus

### Features

- The Kern OIV-6 is a video microscope which has been constructed to optimise digital stereo microscopy. Our well-conceived, comprehensive solution with axial optical unit enables immediate, simple display of your samples on the screen.
- The LED incident illumination unit (ring) included as standard guarantees the very best illumination of your sample.
- Combined with the large working surface, recording objects on the screen is ideally suited for monitoring, analysis and documentation suitable in the industrial sector
- The excellent optical unit enables continuous sharp image tracking across the entire zoom range from 0,7×-4,5×
- Through the integrated auto-focus, the focus level can also be optimised within a defined image section.
- The powerful 2.0 megapixel camera of the microscope without eyepieces offers, thanks to the HDMI output, smooth live monitoring of your samples using an external monitor (not included with delivery). In addition, the software which is easy to use, the USB stick as well as the USB mouse which are integral components of the delivery, mean you can process and store your results digitally
- The OIV 656 guarantees software-controlled taking of images and videos with additional, documentation functions
- Multi-lingual user instructions are included in the scope of the delivery

### Technical data

- Optical system: Axial
- Brightness adjustable
- Magnification ratio: 6,5:1
- Stand: arm curved
- Illumination: 3 W LED ring (incident)
- Data storage: External using USB (Max 128 GB)
- Working distance: 91 mm
- Maximum sample height: 85 mm
- Overall dimensions W×D×H 372×285×482 mm
- Net weight approx. 7 kg

### Accessories

- Auxiliary objective 0,5×, KERN OZB-A6101, € 280,-
- Auxiliary objective 2,0×, KERN OZB-A6102, € 280,-

STANDARD



Model	Standard configuration						Price excl. of VAT ex works €
	Resolution camera	Interface	Sensor	Field of view mm	Objective Zoom	Software functions	
<b>KERN</b> <b>OIV 656</b>	2 MP	HDMI (30 FPS)	CMOS 1/2,8"	∅ 12,64-2,65	0,7×-4,5×	Images and videos, documentation	<b>4440,-</b>



## 6 Digital microscope sets





OBE-1 with camera

OBE-1 with tablet

OBF-1 with camera

OBF-1 with tablet

06

## Our all-round compound microscope as a comprehensive digital solution for schools, training and laboratories

### Features

- Laboratory microscopes from the OBE and OBF range are now also available to you as a comprehensive digital solution for your live investigations. Optionally available with an mounted tablet or C-mount camera. Naturally, the appropriate C-mount adapter is included with the delivery
- The mounted KERN ODC 241 tablet-camera has been specially developed for simple, convenient and direct investigation of the sample on the screen. Ideally suited for school pupils and students in education or for demonstration purposes in the laboratory
- The mounted C-mount camera is available in different versions and can be used anywhere

- For detailed information on the individual components, see the relevant product description of the individual item
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the delivery

- Net weight approx. 5,5 kg
- Objective quality: Achromatic
- Objectives OBE 104: 4×/10×/40×
- Objectives OBE 114: 4×/10×/40×/100×
- Illumination: 3 W LED (transmitted)

### Technical data

- Finite optical system
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Diopter adjustment: One-sided
- Eyepiece: HWF 10×/∅ 18 mm

### OBE-1

- Overall dimensions W×D×H  
320×180×365 mm

### OBF-1

- Overall dimensions W×D×H  
395×200×380 mm
- Net weight approx. 7,7 kg
- Objective quality OBF 131: Achromatic
- Objective quality OBF 132/133: Plan
- Objectives: 4×/10×/40×/100×
- Illumination OBF 131/132:  
20 W Halogen (transmitted)
- Illumination OBF 133: 3 W LED (transmitted)

Model	Standard configuration (camera)					Price excl. of VAT ex works €
	Included camera	Resolution camera	Interface	Sensor	Details microscope, camera	
<b>KERN</b>						
<b>OBE 104C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 13, 85	<b>1040,-</b>
<b>OBE 114C825</b>						<b>1100,-</b>
<b>OBE 104C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"		<b>1180,-</b>
<b>OBE 114C832</b>						<b>1230,-</b>
<b>OBE 104T241</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 13, 89	<b>1650,-</b>
<b>OBE 114T241</b>						<b>1700,-</b>
<b>OBF 131C825*</b>					www.kern-sohn.com, KERN Optics catalogue Page 85	<b>1280,-</b>
<b>OBF 132C825*</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"		<b>1390,-</b>
<b>OBF 133C825*</b>						<b>1370,-</b>
<b>OBF 131C832*</b>					www.kern-sohn.com, KERN Optics catalogue Page 85	<b>1430,-</b>
<b>OBF 132C832*</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"		<b>1540,-</b>
<b>OBF 133C832*</b>						<b>1520,-</b>
<b>OBF 131T241*</b>					www.kern-sohn.com, KERN Optics catalogue Page 89	<b>1860,-</b>
<b>OBF 132T241*</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"		<b>1970,-</b>
<b>OBF 133T241*</b>						<b>1950,-</b>

\* ONLY WHILE STOCKS LAST



OBL-1 with camera

OBL-1 with tablet

OBN-1 with camera

OBN-1 with tablet

## The digital laboratory assistant with infinity optical unit and fixed, Köhler illumination

### Features

- Laboratory microscopes from the OBL and OBN range are now also available to you as a comprehensive digital solution for your live investigations. Optionally available with an mounted tablet or C-mount camera. Naturally, the appropriate C-mount adapter is included with the delivery.
- The mounted KERN ODC 241 tablet-camera has been specially developed for simple, convenient and direct investigation of the sample on the screen. Ideally suited for school pupils and students in education or for demonstration purposes in the laboratory
- The mounted C-mount camera is available in different versions and can be used anywhere
- For detailed information on the individual components, see the relevant product description of the individual item

- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the delivery

### Technical data

- Infinity optical system
- Siedentopf 30° inclined/360° rotatable
- Eyepiece: HWF 10×/φ 20 mm

#### OBL-1

- Quadplex nosepiece
- Diopter adjustment: One-sided
- Overall dimensions W×D×H 395×200×380 mm
- Net weight approx. 7,7 kg
- Objective quality: Infinity E-Plan
- Objectives: 4×/10×/40×/100×
- Illumination OBL 135: 20 W Halogen (transmitted)
- Illumination OBL 137: 3 W LED (transmitted)

#### OBN-1

- Quintuple nosepiece
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 390×200×400 mm
- Net weight approx. 10 kg
- Objective quality: Infinity Plan
- Objectives: 4×/10×/20×/40×/100×
- Illumination OBN 132: 20 W Halogen (transmitted)
- Illumination OBN 135: 3 W LED (transmitted)

Model	Standard configuration (camera)					Price excl. of VAT ex works €
	Included camera	Resolution camera	Interface	Sensor	Details microscope, camera	
<b>OBL 135C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 18, 85	<b>1470,-</b>
<b>OBL 137C825</b>						<b>1490,-</b>
<b>OBL 135C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 18, 85	<b>1620,-</b>
<b>OBL 137C832</b>						<b>1630,-</b>
<b>OBL 135T241</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 18, 89	<b>2050,-</b>
<b>OBL 137T241</b>						<b>2100,-</b>
<b>OBN 132C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 22, 85	<b>1880,-</b>
<b>OBN 135C825</b>						<b>1880,-</b>
<b>OBN 132C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 22, 85	<b>2010,-</b>
<b>OBN 135C832</b>						<b>2010,-</b>
<b>OBN 132T241</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 22, 89	<b>2470,-</b>
<b>OBN 135T241</b>						<b>2470,-</b>



OZL 464 with camera



OZL 466 with camera



OZL 468 with camera



OZL 464 with tablet



OZL 466 with tablet



OZL 468 with tablet

06

The flexible, affordable all-rounder with zoom function as a digital solution for schools, training companies, inspection authorities and laboratories

**Features**

- The flexible, cost-effective OZL-46 range is now also available to you as a comprehensive digital solution for your live investigations. Optionally available with an mounted tablet or C-mount camera. Naturally, the appropriate C-mount adapter is included with the delivery.
- The mounted KERN ODC 241 tablet-camera has been specially developed for simple, convenient and direct investigation of the sample on the screen. Ideally suited for school pupils and students in education or for demonstration purposes in the laboratory
- The mounted C-mount camera is available in different versions and can be used anywhere

- For detailed information on the individual components, see the relevant product description of the individual item
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the delivery

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Tube 45° inclined
- Magnification ratio: 6,4:1
- Light distribution 50:50
- Interpupillary distance 55 – 75 mm
- Diopter adjustment: Both-sided
- Overall dimensions W×D×H 300×240×420 mm
- Net weight approx. 5 kg
- Eyepiece: HWF 10×/ø 20 mm
- Field of view: ø 28,6 – 4,4 mm
- Objective: 0,7× – 4,5×
- Stand OZL 464/466: Pillar style
- Stand OZL 468: Arm curved
- Illumination: 3 W LED (incident + transmitted)

Model	Standard configuration (camera)				Price excl. of VAT ex works €
	Included camera	Resolution camera	Interface	Sensor	
<b>KERN</b>					
<b>OZL 464C825</b>					<b>970,-</b>
<b>OZL 466C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	<b>990,-</b>
<b>OZL 468C825</b>					<b>970,-</b>
<b>OZL 464C832</b>					<b>1110,-</b>
<b>OZL 466C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"	<b>1130,-</b>
<b>OZL 468C832</b>					<b>1110,-</b>
<b>OZL 464T241</b>					<b>1580,-</b>
<b>OZL 466T241</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"	<b>1600,-</b>
<b>OZL 468T241</b>					<b>1580,-</b>



OZM-5 with camera



OZP-5 with camera



OZP-5 with tablet

First-class optics as well as strong illumination combined with a high level of flexibility and digital tools

**Features**

- Stereomicroscopes from the OZM and OZP range are now also available to you as a comprehensive digital solution for your live investigations. Optionally available with an mounted tablet or C-mount camera. Naturally, the appropriate C-mount adapter is included with the delivery
- The mounted KERN ODC 241 tablet-camera has been specially developed for simple, convenient and direct investigation of the sample on the screen. Ideally suited for school pupils and students in education or for demonstration purposes in the laboratory
- The mounted C-mount camera is available in different versions and can be used anywhere
- For detailed information on the individual components, see the relevant product description of the individual item
- A protective dust cover, eye cups, as well as multi-lingual user instructions are included in the scope of the delivery

**Technical data**

- Optical system: Greenough optics
- Brightness adjustable (separate)
- Light distribution: 50:50
- Diopter adjustment: Both-sided
- Net weight approx. 5,5 kg
- Eyepiece: HSWF 10×/ø 23 mm
- Stand: Pillar style
- Illumination: 3 W LED (incident + transmitted)

**OZM-5**

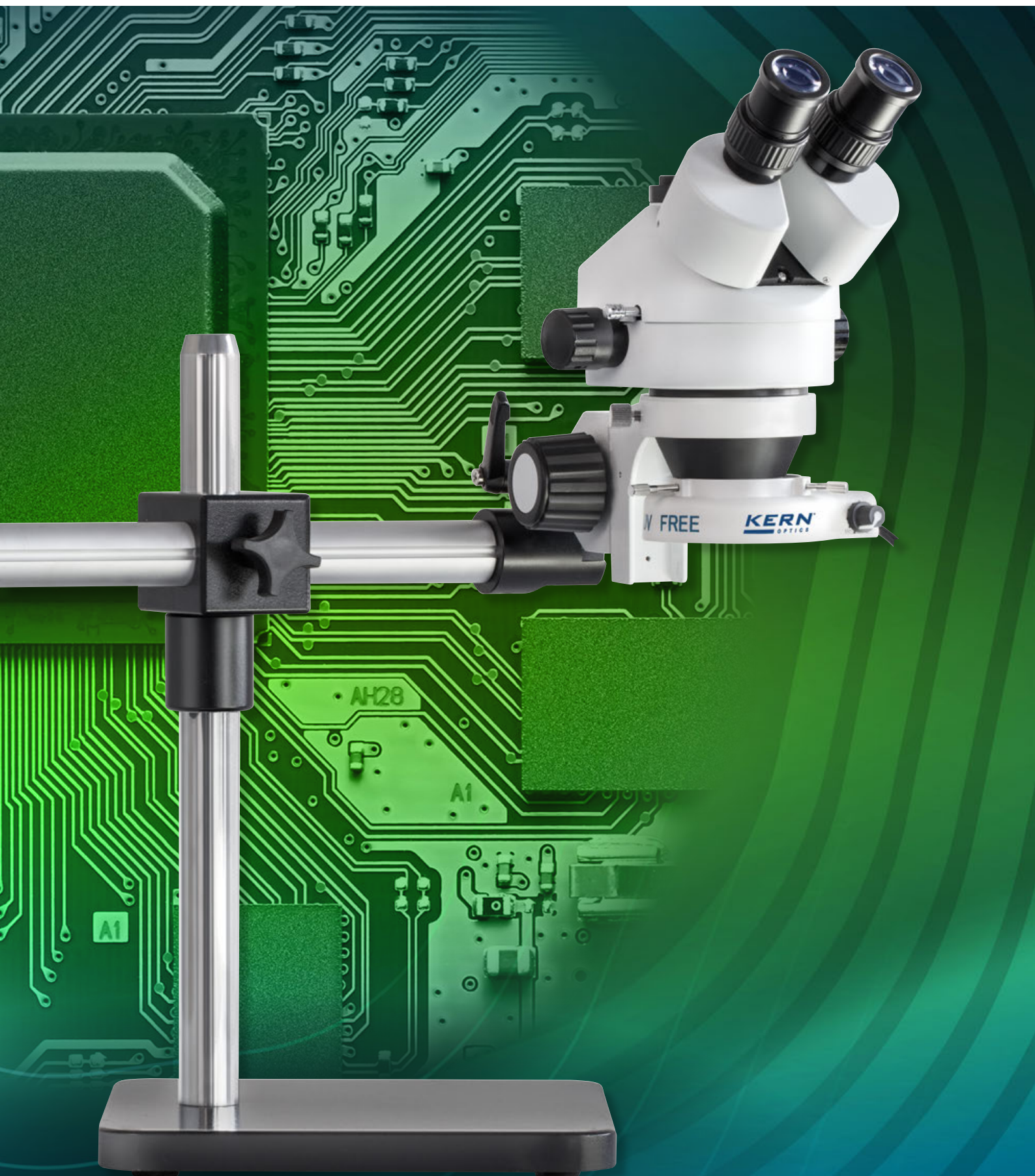
- Tube 45° inclined
- Magnification ratio: 6,4:1
- Interpupillary distance 52 – 76 mm
- Overall dimensions W×D×H 330×285×440 mm
- Field of view: ø 32,8 – 5,1 mm
- Objective: 0,7× – 4,5×

**OZP-5**

- Tube: 35° inclined
- Magnification ratio: 9,2:1
- Interpupillary distance 52 – 76 mm
- Overall dimensions W×D×H 330×285×470 mm
- Field of view: ø 38,3 – 4,2 mm
- Objective: 0,6× – 5,5×

Model	Standard configuration (camera)					Price excl. of VAT ex works €
	Included camera	Resolution camera	Interface	Sensor	Details microscope, camera	
<b>OZM 544C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 52, 85	<b>1850,-</b>
<b>OZM 544C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 52, 85	<b>1980,-</b>
<b>OZP 558C825</b>	ODC 825	5 MP	USB 2.0 (6,8 – 55 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 54, 85	<b>2030,-</b>
<b>OZP 558C832</b>	ODC 832	5 MP	USB 3.0 (14,2 – 101,2 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 54, 85	<b>2160,-</b>
<b>OZP 558T241</b>	ODC 241	5 MP	WLAN, USB 2.0, HDMI, SD (15 – 30 FPS)	CMOS 1/2,5"	KERN Optics catalogue Page 54, 89	<b>2560,-</b>

## 7 Stereo microscope sets





OZM 912/913



OZM 932/933



OZM 952/953



OZM 982/983

## Predefined stereo microscope sets with PREMIUM universal stand and illumination for your functional workplace

### Features

- Sets which have already been defined, consisting of a stereo microscope head (p. 74), a universal stand (p. 79/80), a holder (p. 81), a ring illumination (p. 83) and a dust cover (p. 81) from our range
- Simple – convenient – affordable
- This saves you spending time on configuration and being spoilt for choice in the combination of different components. In this way you get an expensive and highly-flexible solution for your microscope workplace

Model KERN	Microscope head		Stand	Holder	Illumination	Price excl. of VAT ex works €
	Tube	Objective Zoom				
OZM 912	Binocular (OZM 546)	0,7× – 4,5×	Telescopic arm with plate (OZB-A5201)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	1440,-
OZM 913	Trinocular (OZM 547)	0,7× – 4,5×	Telescopic arm with plate (OZB-A5201)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	1740,-
OZM 932	Binocular (OZM 546)	0,7× – 4,5×	ball-bearing double telescopic arm with plate (OZB-A5203)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	1730,-
OZM 933	Trinocular (OZM 547)	0,7× – 4,5×	ball-bearing double telescopic arm with plate (OZB-A5203)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	2030,-
OZM 952	Binocular (OZM 546)	0,7× – 4,5×	Jointed arm with clamp (OZB-A5212)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	1460,-
OZM 953	Trinocular (OZM 547)	0,7× – 4,5×	Jointed arm with clamp (OZB-A5212)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	1740,-
OZM 982	Binocular (OZM 546)	0,7× – 4,5×	Spring loaded arm with clamp (OZB-A6302)	With coarse focusing knob Adjustable torque of the hand wheels	4,5 W LED ring light (OBB-A6102)	1560,-
OZM 983	Trinocular (OZM 547)	0,7× – 4,5×	Spring loaded arm with clamp (OZB-A6302)	With coarse focusing knob Adjustable torque of the hand wheels	4,5 W LED ring light (OBB-A6102)	1860,-



OSE 409



OZL 961/963



OZM 902/903



OZM 922/923

07

Predefined stereo microscope sets with ECO universal stand and illumination for your functional workplace

Features

- Sets which have already been defined (except OSE 409), consisting of a stereo microscope head (p. 74), a universal stand (p. 79/80), a holder (p. 83), a ring illumination (p. 83) and a dust cover (p. 81) from our range
- Simple – convenient – affordable
- This saves you spending time on configuration and being spoilt for choice in the combination of different components. In this way you get an expensive and highly-flexible solution for your microscope workplace

Model	Microscope head		Stand	Holder	Illumination	Price excl. of VAT ex works €
	Tube	Objective Zoom				
<b>OSE 409</b>	Binocular (WF 10×/ ∅ 20 mm)	1x (WD: 230 mm)	Swivel arm with block pedestal	With coarse focusing knob Adjustable torque of the hand wheels	3W LED goose neck (integrated)	<b>375,-</b>
<b>OZL 961</b>	Binocular (OZL 461)	0,7× – 4,5×	Telescopic arm with plate	With coarse focusing knob Adjustable torque of the hand wheels	4,5 W LED ring light (OBB-A6102)	<b>880,-</b>
<b>OZL 963</b>	Trinocular (OZL 462)	0,7× – 4,5×	Telescopic arm with plate	With coarse focusing knob Adjustable torque of the hand wheels	4,5 W LED ring light (OBB-A6102)	<b>950,-</b>
<b>OZM 902</b>	Binocular (OZM 546)	0,7× – 4,5×	Telescopic arm with plate (OZB-A1201)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	<b>1290,-</b>
<b>OZM 903</b>	Trinocular (OZM 547)	0,7× – 4,5×	Telescopic arm with plate (OZB-A1201)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	<b>1570,-</b>
<b>OZM 922</b>	Binocular (OZM 546)	0,7× – 4,5×	ball-bearing double telescopic arm with plate (OZB-A1203)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	<b>1340,-</b>
<b>OZM 923</b>	Trinocular (OZM 547)	0,7× – 4,5×	ball-bearing double telescopic arm with plate (OZB-A1203)	With coarse focusing knob Adjustable torque of the hand wheels (OZB-A5301)	4,5 W LED ring light (OBB-A6102)	<b>1620,-</b>



# 8 Stereo microscope modular system

You can find sample diagrams of showing the configuration of a modular system like this on pages 76, 77 and 78 below.





Head of the microscope series OSF-5  
(OSF 512, 514, 516)



Head of the microscope series OZL-46  
(OZL 461, 462)



Head of the microscope series OZM-5  
(OZM 546, 547)



Head of the microscope series OZP-5  
(OZP 551, 552)



Head of the microscope series OZO-5  
(OZO 556, 557)

## Individuality, variety and flexible working through our modular construction system ► Stereo microscope heads

### Features

- To enable the highest level of flexibility for your special requirements and applications, we have a large selection of stereo microscope heads, universal stands and external illumination units, which are easy to combine
- Through the different properties of the stereo microscope heads, as well as the flexibility of the universal stands and the professional fixing of our brackets, we can configure your ideal microscope to suit your needs
- There are various microscope heads available from our product range for this purpose, both as binocular or trinocular versions
- A C-mount adapter is required to connect a camera to the trinocular version. You can select this adapter from the corresponding model outfit lists on the following pages

### Technical data

- Optical system: Greenough optics
- Further technical data and model features is located in the tables below on the following pages
  - OSF-5: p. 75
  - OZL-46: p. 75
  - OZM-5: p. 76
  - OZP-5: p. 77
  - OZO-5: p. 78

Model	Tube	Tube angle	Eyepieces (included)	Interpupillary distance	Objective	Magnification ratio	Diopter adjustment	Price excl. of VAT ex works €
<b>KERN</b>					Zoom			
<b>OSF 512*</b>	Binocular	45°	HSWF 10×/∅ 23 mm	52–76 mm	1×/2×	–	One-sided (-6/6)	<b>190,-</b>
<b>OSF 516*</b>	Binocular	45°	HSWF 10×/∅ 23 mm	52–76 mm	2×/4×	–	One-sided (-6/6)	<b>190,-</b>
<b>OZL 461</b>	Binocular	45°	HWF 10×/∅ 20 mm	55–75 mm	0,7× – 4,5×	6,4:1	Both-sided (-5/5)	<b>405,-</b>
<b>OZL 462</b>	Trinocular	45°	HWF 10×/∅ 20 mm	52–76 mm	0,7× – 4,5×	6,4:1	Both-sided (-5/5)	<b>460,-</b>
<b>OZM 546</b>	Binocular	45°	HSWF 10×/∅ 23 mm	52–76 mm	0,7× – 4,5×	6,4:1	Both-sided (-6/6)	<b>750,-</b>
<b>OZM 547</b>	Trinocular	45°	HSWF 10×/∅ 23 mm	52–76 mm	0,7× – 4,5×	6,4:1	Both-sided (-6/6)	<b>1060,-</b>
<b>OZP 551</b>	Binocular	35°	HSWF 10×/∅ 23 mm	52–76 mm	0,6× – 5,5×	9,2:1	Both-sided (-6/6)	<b>940,-</b>
<b>OZP 552</b>	Trinocular	35°	HSWF 10×/∅ 23 mm	52–76 mm	0,6× – 5,5×	9,2:1	Both-sided (-6/6)	<b>1250,-</b>
<b>OZO 556*</b>	Binocular	35°	HSWF 10×/∅ 23 mm	52–76 mm	0,8× – 7×	8,8:1	Both-sided (-6/6)	<b>1350,-</b>
<b>OZO 557*</b>	Trinocular	35°	HSWF 10×/∅ 23 mm	52–76 mm	0,8× – 7×	8,8:1	Both-sided (-6/6)	<b>1690,-</b>

\*ONLY WHILE STOCKS LAST

Price reduction

Fittings and accessories for the heads for the OSF-5 microscope range (OSF 512, OSF 514, OSF 516)

Eyepiece	Specifications - Objectives				
	Magnification	1×	2×	3×	4×
HSWF 10×	Total magnification	10×	20×	30×	40×
	Field of view mm	∅ 23	∅ 11,5	∅ 7,67	∅ 5,75
SWF 15×	Total magnification	15×	30×	45×	60×
	Field of view mm	∅ 17	∅ 8,5	∅ 5,67	∅ 4,25
SWF 20×	Total magnification	20×	40×	60×	80×
	Field of view mm	∅ 14	∅ 7	∅ 4,67	∅ 3,5
SWF 30×	Total magnification	30×	60×	90×	120×
	Field of view mm	∅ 9	∅ 4,5	∅ 3	∅ 2,25
<b>Working distance</b>		105 mm	105 mm	105 mm	105 mm

Model outfit		Model KERN			Order number	Price/piece excl. of VAT ex works €
		OSF 512	OSF 514	OSF 516		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○ ○	○ ○	○ ○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○ ○	○ ○	○ ○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○ ○	○ ○	○ ○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	○	OZB-A5514	115,-

✓ = Included with delivery

○ = Option

Fittings and accessories for the heads for the OZL-46 microscope range (OZL 461, OZL 462)

Eyepiece	Specifications - Objectives					
	Magnification	Standard 1,0×	Auxiliary objectives			
			0,5×	0,75×	1,5×	2,0×
HSWF 10×	Total magnification	7× - 45×	3,5× - 22,5×	5,3× - 33,8×	10,5× - 67,5×	14× - 90×
	Field of view mm	∅ 28,6 - 4,4	∅ 57,1 - 8,9	∅ 38,1 - 5,9	∅ 19 - 3	∅ 14,3 - 2,2
HWF 15×	Total magnification	10,5× - 67,5×	5,3× - 33,8×	7,9× - 50,6×	15,5× - 101,3×	21× - 135×
	Field of view mm	∅ 21,4 - 3,3	∅ 42,9 - 6,7	∅ 28,5 - 4,4	∅ 14,3 - 2,2	∅ 10,7 - 1,7
HSWF 20×	Total magnification	14× - 90×	7× - 45×	10,5× - 67,5×	21× - 135×	28× - 180×
	Field of view mm	∅ 14,3 - 2,2	∅ 28,6 - 4,4	∅ 19,1 - 2,9	∅ 9,5 - 1,5	∅ 7,1 - 1,1
HWF 25×	Total magnification	17,5× - 122,5×	8,8× - 56,3×	13,1× - 91,9×	26,3× - 168,8×	35× - 225×
	Field of view mm	∅ 12,9 - 2,0	∅ 25,7 - 4,0	∅ 17,2 - 2,7	∅ 8,6 - 1,3	∅ 6,4 - 1,0
<b>Working distance</b>		105 mm	177 mm	120 mm	47 mm	26 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZL 461	OZL 462		
Eyepieces (30,0 mm)	HWF 10×/∅ 20 mm	✓✓	✓✓	OZB-A4631	40,-
	HSWF 15×/∅ 15 mm	○ ○	○ ○	OZB-A4632	50,-
	HWF 20×/∅ 10 mm	○ ○	○ ○	OZB-A4633	50,-
	HSWF 25×/∅ 9 mm	○ ○	○ ○	OZB-A4634	55,-
Auxiliary objectives	0,5×	○	○	OZB-A4641	80,-
	0,75×	○	○	OZB-A4644	80,-
	1,5×	○	○	OZB-A4642	80,-
	2,0×	○	○	OZB-A4643	80,-
C-Mount	1× (focus adjustable)		✓	OZB-A4809	50,-
	0,3× (focus adjustable)		○	OZB-A4810	85,-
	0,5× (focus adjustable)		○	OZB-A4811	95,-

✓ = Included with delivery

○ = Option

## Fittings and accessories for the heads for the OZM-5 microscope range (OZM 546, OZM 547)

Eyepiece	Specifications - Objectives						
	Magnification	Standard 1,0×	Auxiliary objectives				
			0,37×	0,5×	0,7×	1,5×	2×
HSWF 10×	Total magnification	7× - 45×	2,59× - 16,65×	3,5× - 22,5×	4,9× - 31,5×	10,5× - 67,5×	14× - 90×
	Field of view mm	∅ 32,8 - 5,1	∅ 88,8 - 13,8	∅ 65,7 - 10,2	∅ 46,9 - 7,3	∅ 21,9 - 3,4	∅ 16,4 - 2,6
SWF 15×	Total magnification	10,5× - 67,5×	3,89× - 25×	5,3× - 33,8×	7,4× - 47,2×	15,8× - 101,3×	21× - 135×
	Field of view mm	∅ 24,3 - 3,8	∅ 65,6 - 10,2	∅ 48,6 - 7,6	∅ 34,7 - 5,4	∅ 16,2 - 2,5	∅ 12,1 - 1,9
SWF 20×	Total magnification	14× - 90×	5,18× - 33,3×	7× - 45×	9,8× - 63×	21× - 135×	28× - 180×
	Field of view mm	∅ 20 - 3,1	∅ 54,1 - 8,4	∅ 40 - 6,2	∅ 28,6 - 4,4	∅ 13,3 - 2,1	∅ 10 - 1,6
SWF 30×	Total magnification	21× - 135×	7,77× - 50×	10,5× - 67,5×	14,7× - 94,5×	31,5× - 202,5×	42× - 270×
	Field of view mm	∅ 12,9 - 2	∅ 34,7 - 5,4	∅ 25,7 - 4	∅ 18,4 - 2,9	∅ 8,6 - 1,6	∅ 6,4 - 1
<b>Working distance</b>		110 mm	275 mm	195 mm	145 mm	50 mm	35 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZM 546	OZM 547		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○	○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○	○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○	○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	OZB-A5514	115,-
Achromatic auxiliary objectives	0,37× only in combination with a universal stand	○	○	OZB-A5611	155,-
	0,5×	○	○	OZB-A5612	140,-
	0,7×	○	○	OZB-A5613	140,-
	1,5×	○	○	OZB-A5615	140,-
	2,0×	○	○	OZB-A5616	145,-
	Soldering protection lens	○	○	OZB-A5614	45,-
C-Mount	0,3× (focus adjustable)		○	OZB-A5701	125,-
	0,5× (focus adjustable)		○	OZB-A5702	125,-
	1,0× (focus adjustable)		○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703		○	OZB-A5704	260,-
	for SLR cameras (Nikon)		○	OZB-A5706	260,-
	for SLR cameras (Olympus)		○	OZB-A5707	260,-
	for SLR cameras (Canon)		○	OZB-A5708	260,-

✓ = Included with delivery

○ = Option

### Functionality of our stereo microscope modular system

#### Step 1:

Select a microscope head (from page 74), a universal stand (page 79/80), a bracket (page 81) and a ring illumination unit (page 81), in order to generate a customised model.



## Fittings and accessories for the heads for the OZP-5 microscope range (OZP 551, OZP 552)

Eyepiece	Specifications - Objectives						
	Magnification	Standard 1,0×	Auxiliary objectives				
			0,37×	0,5×	0,7×	1,5×	2×
HSWF 10×	Total magnification	6× - 55×	2,96× - 25,9×	3× - 27,5×	4,2× - 38,5×	9× - 82,5×	12× - 110×
	Field of view mm	∅ 38,3 - 4,2	∅ 74,3 - 8,5	∅ 76,7 - 8,4	∅ 54,8 - 6	∅ 25,6 - 2,8	∅ 19,2 - 2,1
SWF 15×	Total magnification	9× - 82,5×	4,44× - 38,9×	4,5× - 41,25×	6,3× - 57,75×	13,5× - 123,75×	18× - 165×
	Field of view mm	∅ 28,3 - 3,1	∅ 57,4 - 6,6	∅ 56,7 - 6,2	∅ 40,5 - 4,4	∅ 18,9 - 2,1	∅ 14,2 - 1,5
SWF 20×	Total magnification	12× - 110×	5,92× - 51,8×	6× - 55×	8,4× - 77×	18× - 165×	24× - 220×
	Field of view mm	∅ 23,3 - 2,5	∅ 47,3 - 5,4	∅ 46,7 - 5,1	∅ 33,3 - 3,6	∅ 15,6 - 1,7	∅ 11,7 - 1,3
SWF 30×	Total magnification	18× - 165×	8,88× - 77,7×	9× - 82,5×	12,6× - 115,5×	27× - 247,5×	36× - 330×
	Field of view mm	∅ 15 - 1,6	∅ 30,4 - 3,5	∅ 30 - 3,3	∅ 21,4 - 2,3	∅ 10 - 1,1	∅ 7,5 - 0,8
<b>Working distance</b>		108 mm	275 mm	195 mm	145 mm	50 mm	35 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZP 551	OZP 552		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○	○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○	○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○	○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	OZB-A5514	115,-
Achromatic auxiliary objectives	0,37× only in combination with a universal stand	○	○	OZB-A5611	155,-
	0,5×	○	○	OZB-A5612	140,-
	0,7×	○	○	OZB-A5613	140,-
	1,5×	○	○	OZB-A5615	140,-
	2,0×	○	○	OZB-A5616	145,-
	Soldering protection lens	○	○	OZB-A5614	45,-
C-Mount	0,3× (focus adjustable)		○	OZB-A5701	125,-
	0,5× (focus adjustable)		○	OZB-A5702	125,-
	1,0× (focus adjustable)		○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703		○	OZB-A5704	260,-
	for SLR cameras (Nikon)		○	OZB-A5706	260,-
	for SLR cameras (Olympus)		○	OZB-A5707	260,-
	for SLR cameras (Canon)		○	OZB-A5708	260,-

✓ = Included with delivery

○ = Option

### Functionality of our stereo microscope modular system

#### Step 2:

Further illumination units (page 83) and a suitable protective dust cover (page 81) give you the opportunity to adapt the configuration, expansion and field of application of your ideal microscope individually to suit your own requirements

Fiber illumination



Polarising ring light



Dust cover



## Fittings and accessories for the heads for the OZO-5 microscope range (OZO 556, OZO 557)

Eyepiece	Specifications - Objectives						
	Magnification	Standard 1,0×	Auxiliary objectives				
			0,37×	0,5×	0,7×	1,5×	2×
HSWF 10×	Total magnification	8× - 70×	2,96× - 25,9×	4× - 35×	5,6× - 49×	12× - 105×	16× - 140×
	Field of view mm	∅ 28,75 - 3,3	∅ 74,3 - 8,5	∅ 57,5 - 6,6	∅ 41,1 - 4,7	∅ 19,2 - 2,2	∅ 14,4 - 1,6
SWF 15×	Total magnification	12× - 105×	4,44× - 38,9×	6× - 52,5×	8,4× - 73,5×	18× - 157,5×	24× - 210×
	Field of view mm	∅ 21,25 - 2,4	∅ 57,4 - 6,6	∅ 42,5 - 4,9	∅ 30,4 - 3,5	∅ 14,2 - 1,6	∅ 10,6 - 1,2
SWF 20×	Total magnification	16× - 140×	5,92× - 51,8×	8× - 70×	11,2× - 98×	24× - 210×	32× - 280×
	Field of view mm	∅ 17,5 - 2	∅ 47,3 - 5,4	∅ 35 - 4	∅ 25 - 2,9	∅ 11,7 - 1,3	∅ 8,75 - 1
SWF 30×	Total magnification	24× - 210×	8,88× - 77,7×	12× - 105×	16,8× - 147×	36× - 315×	48× - 420×
	Field of view mm	∅ 11,25 - 1,3	∅ 30,4 - 3,5	∅ 22,5 - 2,6	∅ 16,1 - 1,8	∅ 7,5 - 0,9	∅ 5,625 - 0,6
<b>Working distance</b>		108 mm	275 mm	195 mm	145 mm	50 mm	35 mm

Model outfit		Model KERN		Order number	Price/piece excl. of VAT ex works €
		OZO 556	OZO 557		
Eyepieces (30,0 mm)	HSWF 10×/∅ 23 mm	✓✓	✓✓	OZB-A5503	60,-
	SWF 15×/∅ 17 mm	○○	○○	OZB-A5504	65,-
	SWF 20×/∅ 14 mm	○○	○○	OZB-A5505	75,-
	SWF 30×/∅ 9 mm	○○	○○	OZB-A5506	90,-
	HSWF 10×/∅ 23 mm (reticule 0,1 mm)	○	○	OZB-A5512	95,-
	SWF 15×/∅ 17 mm (reticule 0,05 mm)	○	○	OZB-A5513	115,-
	SWF 20×/∅ 14 mm (reticule 0,05 mm)	○	○	OZB-A5514	115,-
Achromatic auxiliary objectives	0,37× only in combination with a universal stand	○	○	OZB-A5611	155,-
	0,5×	○	○	OZB-A5612	140,-
	0,7×	○	○	OZB-A5613	140,-
	1,5×	○	○	OZB-A5615	140,-
	2,0×	○	○	OZB-A5616	145,-
	Soldering protection lens	○	○	OZB-A5614	45,-
C-Mount	0,3× (focus adjustable)		○	OZB-A5701	125,-
	0,5× (focus adjustable)		○	OZB-A5702	125,-
	1,0× (focus adjustable)		○	OZB-A5703	95,-
	1,0× (with micrometer) only in combination with OZB-A5703		○	OZB-A5704	260,-
	for SLR cameras (Nikon)		○	OZB-A5706	260,-
	for SLR cameras (Olympus)		○	OZB-A5707	260,-
	for SLR cameras (Canon)		○	OZB-A5708	260,-

✓ = Included with delivery

○ = Option

### Functionality of our stereo microscope modular system

#### Step 3:

When using a trinocular microscope configuration, select the microscope camera (from page 85) which meets your requirements. To find the appropriate C-mount adapter, which is essential to correctly connect the camera, please see the fitting lists of the selected microscope head (from page 75).





OZB-A5201



OZB-A5203



OZB-A5211



OZB-A5212



OZB-A5213



OZB-A5221



OZB-A5222



OZB-A5223

Individuality, variety and flexible working through our modular construction system ► PREMIUM universal stands

**Features**

- With our universal stands and basic stands, as well as microscope heads and external illumination units, you can configure your microscope to your own specifications and adapt it to your application
- Thanks to the versatile, adjustable universal stands it is possible to work in the very best way in all areas with the most varied of samples
- Large universal stands are available as stand base variants as well as with the option of a clamp for the edge or the centre of a bench. Depending on the model, you have the choice of a telescopic arm stand, a jointed arm stand or a telescopic double arm universal stand with ball bearings

**Technical data**

- Column height: 515 mm

**OZB-A5201/OZB-A5211/OZB-A5221**

- Length telescopic arm: 614 mm

**OZB-A5212/OZB-A5222**

- Length jointed arm: 553 mm

**OZB-A5203/OZB-A5213/OZB-A5223**

- Length double arm: 545 mm

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>OZB-A5201</b>	Telescopic arm – Plate – excl. holder	<b>480,-</b>
<b>OZB-A5211</b>	Telescopic arm – Clamp Edge of bench (Range: max. 62 mm) – excl. holder	<b>480,-</b>
<b>OZB-A5221</b>	Telescopic arm – Clamp Centre of bench (hole required) – excl. holder	<b>520,-</b>
<b>OZB-A5212</b>	Jointed arm – Clamp Edge of bench (Range: max. 62 mm) – excl. holder	<b>520,-</b>
<b>OZB-A5222</b>	Jointed arm – Clamp Centre of bench (hole required) – excl. holder	<b>550,-</b>
<b>OZB-A5203</b>	Telescopic double arm with ball bearings – Plate – excl. holder	<b>770,-</b>
<b>OZB-A5213</b>	Telescopic double arm with ball bearings – Clamp Edge of bench (Range: max. 62 mm) – excl. holder	<b>770,-</b>
<b>OZB-A5223</b>	Telescopic double arm with ball bearings – Clamp Centre of bench (hole required) – excl. holder	<b>800,-</b>



OZB-A1201



OZB-A1203



OZB-A6302



OZB-A1211



OZB-A1213



OZB-A6303



OZB-A6301

Individuality, variety and flexible working through our modular construction system ► ECO universal stands

### Features

- With our universal stands and basic stands, as well as microscope heads and external illumination units, you can configure your microscope to your own specifications and adapt it to your application
- Thanks to the versatile, adjustable universal stands it is possible to work in the very best way in all areas with the most varied of samples
- Small universal stands are available as stand base variants as well as with the option of a clamp for the edge of a bench. Depending on the model, you have the choice of a telescopic arm stand or a telescopic double arm universal stand with ball bearings
- The spring loaded universal stands including bench clamp will make your daily work with your stereo microscope easier. Now including coarse adjustment knob for easy, flexible focussing

### Technical data

#### OZB-A1201/OZB-A1211

- Column height: 430 mm
- Length telescopic arm: 385 mm

#### OZB-A1203/OZB-A1213

- Column height: 430 mm
- Length telescopic arm: 480 mm

#### OZB-A6302

- Height spring loaded arm: 525 mm
- Length spring loaded arm: 620 mm

#### OZB-A6301

- Column height: 300 mm

#### OZB-A6303

- Height spring loaded arm: 400 mm
- Length spring loaded arm: 850 mm

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>OZB-A1201</b>	Telescopic arm – Plate – excl. holder	<b>350,-</b>
<b>OZB-A1211</b>	Telescopic arm – Clamp Edge of bench (Range: max. 40 mm) – excl. holder	<b>320,-</b>
<b>OZB-A1203</b>	Jointed arm – Plate – excl. holder	<b>380,-</b>
<b>OZB-A1213</b>	Jointed arm – Clamp Edge of bench (Range: max. 40 mm) – excl. holder	<b>360,-</b>
<b>OZB-A6302</b>	Spring loaded arm (Pneumatic spring) – Clamp (Range: max. 50 mm) – with holder (Coarse focusing knob)	<b>730,-</b>
<b>OZB-A6303</b>	Spring loaded arm (Compression spring) – Clamp (Range: max. 50 mm) – with holder (Coarse focusing knob)	<b>470,-</b>
<b>OZB-A6301</b>	Pillar style stand with “C”-shape base – excl. holder	<b>300,-</b>





OZB-A5301



OZB-A5306

## Individuality, variety and flexible working through our modular construction system ► Holders

### Features

- There are two microscope head holders available for these flexible, modular systems. These brackets are suitable for all stereo microscope stands and universal stands (excluding spring loaded arm), to make focusing possible
- The first variant available is a holder with adjustable handwheel as well as adjustment of the torque for your configuration
- For professional applications you have the choice of a mount with coarse and fine focusing knob for the very best focusing operation
- Diameter of the connector for the microscope head: 76 mm
- Diameter of the connector for the stand: 25 mm

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>OZB-A5301</b>	Holder with adjustable torque of the hand wheel. Suitable for all universal stands (except of spring loaded arm) and for all basic stands as possible accessories.	<b>155,-</b>
<b>OZB-A5306</b>	Holder with coaxial coarse and fine focusing knob and adjustable torque of the hand wheel. Suitable for all universal stands (except of spring loaded arm) and for all basic stands as possible accessories.	<b>250,-</b>



## Individuality, variety and flexible working through our modular construction system ► Dust covers

### Features

- When working with microscopes, we offer dust covers to give greater ease of use. By using these, you can easily avoid the time-consuming cleaning work which is necessary with routine use of your microscope
- Depending on the size of your microscope set or your microscope configuration you can select between three different models
- Please find detailed information in the following model outfit list

Model	Description	Suitable for	Price excl. of VAT ex works €
<b>KERN</b>			
<b>OBB-A1387</b>	Size 1: 485×440 mm	Stereo microscope heads	<b>30,-</b>
<b>OBB-A1388</b>	Size 2: 600×600 mm	Stereo microscope heads in combination with basic stands	<b>30,-</b>
<b>OBB-A1389</b>	Size 3: 650×750 mm	Stereo microscope sets, stereo microscope heads in combination with universal stands	<b>30,-</b>

# 9 External light sources for stereomicroscopes

Ring illumination and cold light sources



## Ring illumination KERN OZB-IR

Professional illumination units guarantee outstanding, uniform and strong illumination

These illumination units are also available with UK mains plug. For more information on this, visit our online shop or give us a ring



OZB-A4571



OZB-A4572



OBB-A6102



OZB-A7101

### Features

- Choose your favourite external illumination here to achieve maximum flexibility and greatest possible ease of use in stereo microscopy
- These professional illumination units provide a quality of light at a high, constant intensity at all times
- Regardless of whether your choice is space-saving ring lights or cold light sources using optical fiber, our range is all you can wish for
- With the OZB-A7101 polarisation ring illumination unit, you also have an excellent component which has been specially optimised for observing shiny surfaces
- Naturally, these external illumination units also fit your standard stereo microscope
- Exception: The ring illumination units cannot be used in combination with the following ranges: OSE-1, OSF-4G, OZL-45R, OZC-5 and OZG-4

Model	Illuminance	Inner $\varnothing$	Colour temperature	Brightness adjustable	Illumination by segments	Polarising filter	Price excl. of VAT ex works €
<b>KERN</b>		mm	K				
OZB-A4571	4W-LED	60	7000 – 11000	✓			90,-
OZB-A4572	4W-LED	60	6500 – 7000	✓	✓		140,-
OBB-A6102	4,5W-LED	63	approx. 7600	✓			135,-
OZB-A7101	4,5W-LED	62	6500 – 7000	✓		✓	590,-

✓ = Included with delivery

○ = Option

## Fiber illumination KERN OZB-IF



OZB-A4516



OZB-A4515



Application example

### Features

- With the **OZB-A4516** 20 W-LED goose neck illumination unit with focusable light beam, you can adjust the illumination to suit your needs. Spot or scattered radiation means that you can achieve the very best illumination of your sample.

Model	Description	Length	Illuminance	Colour temperature	Brightness adjustable	Price excl. of VAT ex works €
<b>KERN</b>		mm		K		
OZB-A4515	Dual fiber LED unit	300	6W	5600 – 6300	✓	150,-
OZB-A4516	Dual fibre LED cold light source	540	20W	6400	✓	620,-

✓ = Included with delivery

○ = Option

# 10 Microscope cameras & Software



## Specialists in microscopy for measurement, counting, documentation, archiving and image processing

### Features

- A large selection of microscope cameras is available for your individual applications
- The universal microscope cameras can be used anywhere and can be connected to the microscope as well as to a laptop or PC using the USB cable (USB 2.0 or USB 3.0, see table)
- The power supply is through the USB cable, which means that no additional power supply is required
- Your daily work is made significantly easier with the very best synchronisation, a high frame rate as well as stable image performance together with our camera software microscope VIS KERN OXM 901 which we deliver with the product
- For details about our software please refer to the "Camera software microscope VIS KERN OXM 901" product group in the catalogue (page 90) or see [www.kern-sohn.com](http://www.kern-sohn.com)
- These universal cameras can also be connected to all microscopes available on the market offering the appropriate C-mount adapter for the particular microscope

### Accessories

- Object micrometer, for calibrating the software measuring function, division 0.01 mm, KERN ODC-A2403, € 20,-

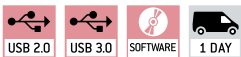
### C-mount cameras – USB 2.0/3.0 KERN ODC-82 · ODC-83



### Features

- Through the proven CMOS technology, in connection with the USB 2.0 or USB 3.0 the images are shown quickly and clearly
- These cameras are also ideal for more demanding applications, such as, for example, darkfield, phase contrast and for fluorescence applications
- As well as the camera, the delivery includes our multi-lingual camera software Microscope VIS Basic KERN OXM 901, a USB cable (length: 2 m) various eyepiece adapters and an object micrometer to calibrate the software
- Please order the appropriate C-mount adapter to fit your KERN microscope now

STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Colour/ Monochrome	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>								
<b>ODC 824</b>	3,1 MP	USB 2.0	11,5 – 45	CMOS	1/2"	colour	Win XP, Vista, 7, 8, 10	<b>370,-</b>
<b>ODC 825</b>	5,1 MP	USB 2.0	6,8 – 55	CMOS	1/2,5"	colour	Win XP, Vista, 7, 8, 10	<b>385,-</b>
<b>ODC 831</b>	3,1 MP	USB 3.0	27,3 – 53,3	CMOS	1/3"	colour	Win XP, Vista, 7, 8, 10	<b>500,-</b>
<b>ODC 832</b>	5,1 MP	USB 3.0	14,2 – 101,2	CMOS	1/2,5"	colour	Win XP, Vista, 7, 8, 10	<b>530,-</b>

### C-mount camera – High resolution KERN ODC-84



### Features

- The high-resolution, professional ODC-84 range offers you an impressive 20 megapixel resolution which will give you bright detailed views of your sample. By using the integrated USB 3.0 interface, live images are transferred to the KERN OXM 902 for processing and documentation
- Power supply is through the USB interface so that there is no requirement for an external power source.
- As well as the camera, the delivery includes our multi-lingual camera software Microscope VIS Pro KERN OXM 902, a USB cable (length: 2 m), various eyepiece adapters and an object micrometre to calibrate the software
- Please order the appropriate C-mount adapter (only 1,0x possible) to fit your KERN microscope now



Can only be used in combination with compound microscopes

STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Colour/ Monochrome	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>								
<b>ODC 841</b>	20 MP	USB 3.0	15 – 60	CMOS	1"	colour	Win XP, Vista, 7, 8, 10	<b>1090,-</b>



**Features**

- The ODC 851 HDMI microscope camera has been specially developed for direct HDMI connection to your HDMI compatible display device. The images can be stored straight onto the SD card which is delivered with the product or can be transferred to your PC or laptop for further processing using the USB 2.0 cable in combination with the OXM 901 software.
- The HDMI autofocus camera ODC 852 offers you a perfect, effective solution for modern microscopy. The autofocus function automatically detects and adjusts the focus level so that you always have a razor-sharp image. Ideal for all applications in connection with a KERN stereo microscope.
- Realtime images can be transferred to an HDMI-compatible display device using the HDMI connection and they can also be stored on the SD card which was delivered with the product. As an alternative, data can also be transferred using the WLAN module (ODC 852) to a PC or laptop in combination with the KERN OXM 902 software which is included with the delivery
- Power supply is from an external 12 V power unit
- Scope of delivery ODC 851: Camera, USB mouse, USB 2.0 cable (length: 2 m), HDMI cable (length: 2 m), SD card (16 GB) and camera software Microscope VIS Basic KERN OXM 901
- Scope of delivery ODC 852: Camera, USB mouse, HDMI cable (length: 2 m), SD card (16 GB), WiFi adapter and camera software Microscope VIS Pro KERN OXM 902
- Please order the appropriate C-mount adapter to fit your KERN microscope now

STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Colour/ Monochrome	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>								
<b>ODC 851</b>	2 MP	HDMI, USB 2.0, SD	30 – 60	CMOS	1/2,8"	colour	Win XP, Vista, 7, 8, 10	<b>990,-</b>
<b>ODC 852*</b>	5 MP	HDMI, USB 2.0, SD, WLAN	25 – 60	CMOS	1/1,8"	colour	Win XP, Vista, 7, 8, 10	<b>1060,-</b>

\*can only be used in combination with stereo microscopes

C-mount camera – High resolution KERN ODC-86

The cooled camera for professional fluorescence examinations



**Features**

- The ODC 861 camera with Peltier cooling technology has been specially designed for fluorescent applications. It is able to significantly compensate for image noise associated with weak lighting. Due to its high resolution and light-sensitive Sony CMOS colour sensor it proves first-class images. The practical, sturdy storage box serves as protection and for transportation of this premium camera
- Realtime images can be transferred straight to a PC or laptop using the integrated USB 3.0 interface. As an alternative, 2 USB 2.0 interfaces are available, to operate the camera with the KERN OXM 902 software which is included with the delivery
- Power supply is from an external 12 V power unit
- Please order the appropriate C-mount adapter (only 1,0x possible) to fit your KERN microscope now



Can only be used in combination with compound microscopes

STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Colour/ Monochrome	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>								
<b>ODC 861</b>	20 MP	USB 3.0	5 – 30	CMOS	1"	colour	Win XP, Vista, 7, 8, 10	<b>2020,-</b>



ODC-87, ODC-88

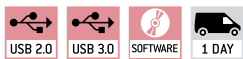


Eyepiece camera fixed into the tube

### Features

- With the KERN eyepiece cameras you can convert your standard microscope to a digital microscope, by replacing one eyepiece of your non-digital microscope with an eyepiece camera and connect this to your computer via USB
- The universal eyepiece can be connected to the microscope as well as to a laptop or PC using the USB cable (2.0 or 3.0, see table)
- The power supply is through the USB cable, which means that no additional power supply is required
- Your daily work is made significantly easier with the very best synchronisation, a high frame rate as well as stable image performance together with our software
- As well as the camera, the delivery includes a simplified version of our multi-lingual camera software Microscope VIS KERN OXM 901 (OXM 902 for model ODC 881), a USB cable (length: 1,5m), two eyepiece adapters and an object micrometer to calibrate the software
- Possible tube diameters:  
23,2 mm (Standard)  
30,0 mm (Eyepiece adapter)  
30,5 mm (Eyepiece adapter)

#### STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Colour/ Monochrome	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>								
<b>ODC 872</b>	1,3 MP	USB 2.0	7,5 – 12,5	CMOS	1/3"	colour	Win XP, Vista, 7, 8, 10	<b>185,-</b>
<b>ODC 874</b>	3 MP	USB 2.0	3 – 7,5	CMOS	1/2,7"	colour	Win XP, Vista, 7, 8, 10	<b>220,-</b>
<b>ODC 881</b>	5 MP	USB 3.0	15 – 30	CMOS	1/2,5"	colour	Win XP, Vista, 7, 8, 10	<b>295,-</b>

## USB microscope – USB 2.0 KERN ODC-89

The digital USB microscope for rapid testing or for hobby use



ODC 895

### Features

- The USB hand-held microscope is designed for rapid and simple observations. Ideally suited for coins, plants, insects and skin samples for all hobby scientists, children and students
- With the USB microscope you can easily adjust the magnification to suit all conventional samples. The zoom range can be adjusted to a magnification of 10× as well as 200×
- The eight LEDs fitted in the ring shape ensure strong and effective illumination of your sample. Use the adjustment wheel on the cable to control the illumination setting
- As well as the camera, you will also find a simplified version of our multi-lingual camera software Microscope VIS KERN OXM 901 included with delivery
- Cable length: 1,4 m

#### Stand with focus wheel:

- Work area: 150×80mm
- Focus range: 60 mm
- Overall dimensions: 150×80×135 mm

#### STANDARD



Model	Resolution	Interface	FPS	Sensor	Sensor size	Supported operating system	Magnification levels	Focusing stand	Illumination	Price excl. of VAT ex works €
<b>KERN</b>										
<b>ODC 895</b>	2 MP	USB 2.0	15 – 30	CMOS	1/3,2"	Win XP, Vista, 7, 8, 10	10×, 200×	Focus wheel	8× LED	<b>195,-</b>



ODC 910



Innovative hand-held microscope for mobile applications with immediate display of the image on a smartphone or tablet

**Features**

- The digital WLAN hand-held microscope is designed for rapid and simple surface observations. Ideally suited for coins, bank notes, stamps, circuit boards, plants, insects, gems and skin samples for industrial use, for all hobby scientists, children and students
- The KERN ODC 910 WLAN microscope has been specially developed for direct connection to your WLAN-enabled smartphone or tablet with iOS or android
- During the live transfer to your smartphone or tablet you can take photos and videos of the sample you are investigating, and these can also be stored on your device. For larger videos you can also insert a mini SD card directly into the microscope
- With the WLAN microscope you can easily adjust the magnification to suit all conventional samples. The focus can be adjusted to a magnification of 10× as well as 200×
- The six LEDs fitted in a ring shape ensure strong and effective illumination of your sample. Use the adjustment wheel on the microscope to control the illumination setting.
- You can download the app for the ODC 910 WLAN microscope from the Apple App Store or the Android Google Play Store free of charge and this app enables you to directly transfer images and videos from the microscope to your smartphone or tablet through a simple connection
- The scope of delivery includes the WLAN microscope with integrated rechargeable battery pack, a flexible column which is easy to adjust and which has a swan neck so that you can achieve the ideal height setting, as well as a mains adapter

STANDARD

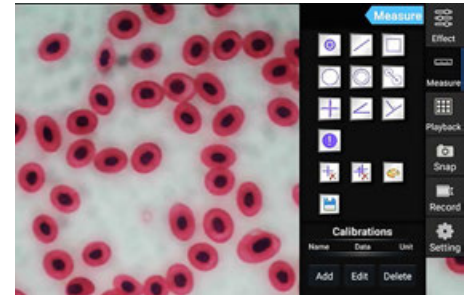


Model	Resolution	Interface	FPS	Sensor	Sensor size	Supported operating system	Magnification levels	Focusing stand	Illumination	Price excl. of VAT ex works €
<b>KERN ODC 910</b>	2 MP	WLAN, SD	15 – 30	CMOS	1/4"	Android, iOS	10×, 200×	Goose neck	6× LED	<b>170,-</b>





ODC 241



Integrated software with measuring function

Digital microscopy brought up to date – tablet with integrated camera for optimal observation and digital documentation of the sample

**Features**

- A 2-in-1 solution in digital microscopy as a universal system for trinocular microscopes with C-mount adapter. The ODC 241 microscope-tablet-camera consists of a large Android tablet in combination with a 5-MP camera
- The KERN ODC 241 tablet-camera has been specially developed for simple and direct observation of the sample on the screen. Ideally suited for school pupils and students in education or for demonstration purposes in the laboratory
- As well a live transfer of the image to the Android table, the integrated 5-MP camera also means that images and videos can be created for the documentation.
- Simple measuring functions such as, for example, functions for measuring distance, surfaces and angles as well as a manual counting function are also available
- Automatic white balance and automatic contrast adjustment can be performed quickly and easily, which enables efficient working procedures
- A range of additional functions are provided through the integrated interfaces, such as, for example
  - Data storage on a USB stick or SD card
  - Connection to a USB mouse
  - Transfer of the live image to an external screen using HDMI
  - Transfer of stored data to external receivers using WLAN
- The delivery includes the tablet camera with pre-installed software as well as the mains adapter

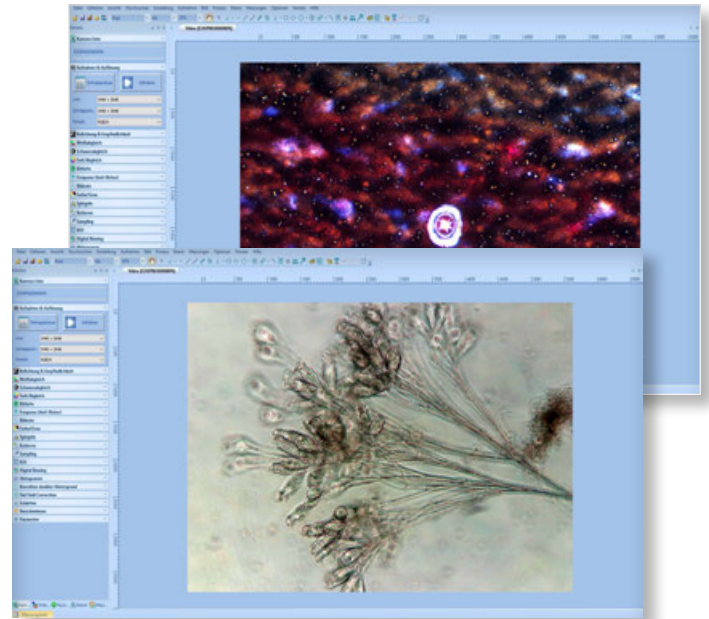
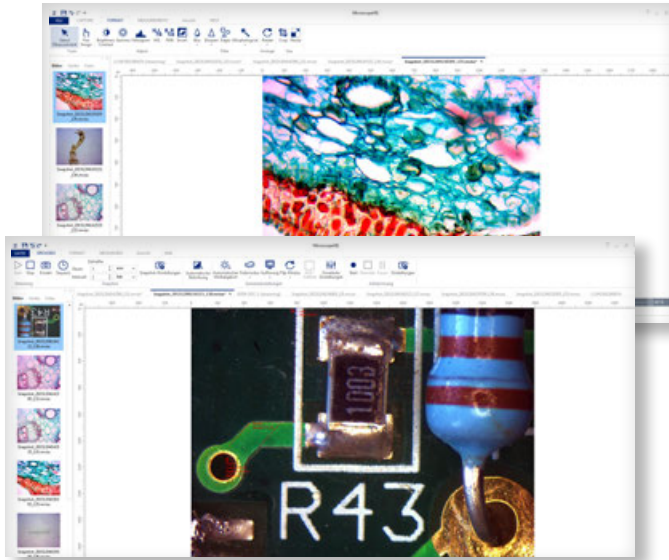
**Technical data**

- 9.7" LCD-Touchscreen
- Screen resolution: 2048×1536 pixels
- CPU: Quad Core Cortex-A17; 1,8 GHz
- Overall dimensions W×D×H 238×51×206 mm
- Net weight approx. 0,65 kg

STANDARD



Model	Resolution Camera	Interface	FPS	Sensor	Sensor size	Supported operating system	Price excl. of VAT ex works €
<b>KERN</b>							
<b>ODC 241</b>	5 MP	WLAN, USB 2.0, HDMI, SD	15 – 30	CMOS	1/2,5"	Android 5.1	<b>960,-</b>



The digital specialist for measurement, counting and archiving – free of charge with all KERN microscope cameras

#### Features

##### OXM 901\*

- The camera software **KERN microscope VIS Basic** is a multi-lingual software, which we have developed specially for all available Kern microscope cameras
- As well as the streaming function for the object to be viewed, the software also offers you an image snapshot function, as well as a video function
- Various measuring functions such as, for example, functions for measuring distance, surfaces and angles and a manual counting function are available. In addition there are extensive image processing and documentation functions available, and of course an exporting function to Microsoft Office applications Word® and Excel®
- With the display settings you can display different measurements, grid sizes, scales and rulers for the very best measuring procedure
- Automatic white balance and automatic contrast adjustment can be performed quickly and easily, which enables efficient working procedures

##### OXM 902

- With the camera software **KERN microscope VIS Pro** in essence, all functions of the Basic variant are supported, however, in addition many other features are integrated which can be used for image analysis at a more professional level.
- The following highlights are included:
  - Image Stitching
  - Image Stacking
  - Expanded measuring functions
  - Auto counting function
  - DShow and TWAIN support
  - Software development kit
- With this software it is possible operate all available KERN microscope cameras

#### Technical data

- Can be used for Microsoft Windows XP, Windows Vista, Windows 7, Windows 8, 8.1 and Windows 10
- Depending on the language setting of your Windows operating system the software KERN microscope VIS Basic & Pro will be identified and installed in the current language. This can be changed manually at any time
- The software is available in the following languages:
  - OXM 901:** German, English, Spanish, Italian, French, Portuguese, Polish
  - OXM 902:** German, English, Spanish, Italian, French, Portuguese, Polish, Russian, Turkish, Chinese, Japanese, Korean
- As well as the software CD, a USB cable and an object micrometer are included with all KERN cameras as well as all digital microscopes Please refer to the documentation for the software in the download area of our website [www.kern-sohn.com](http://www.kern-sohn.com) for further details

\*Cannot be used in combination with the following cameras: ODC 841, ODC 852, ODC 861, ODC 881

# For discoverers: The wide product universe of weighing and measuring technology.

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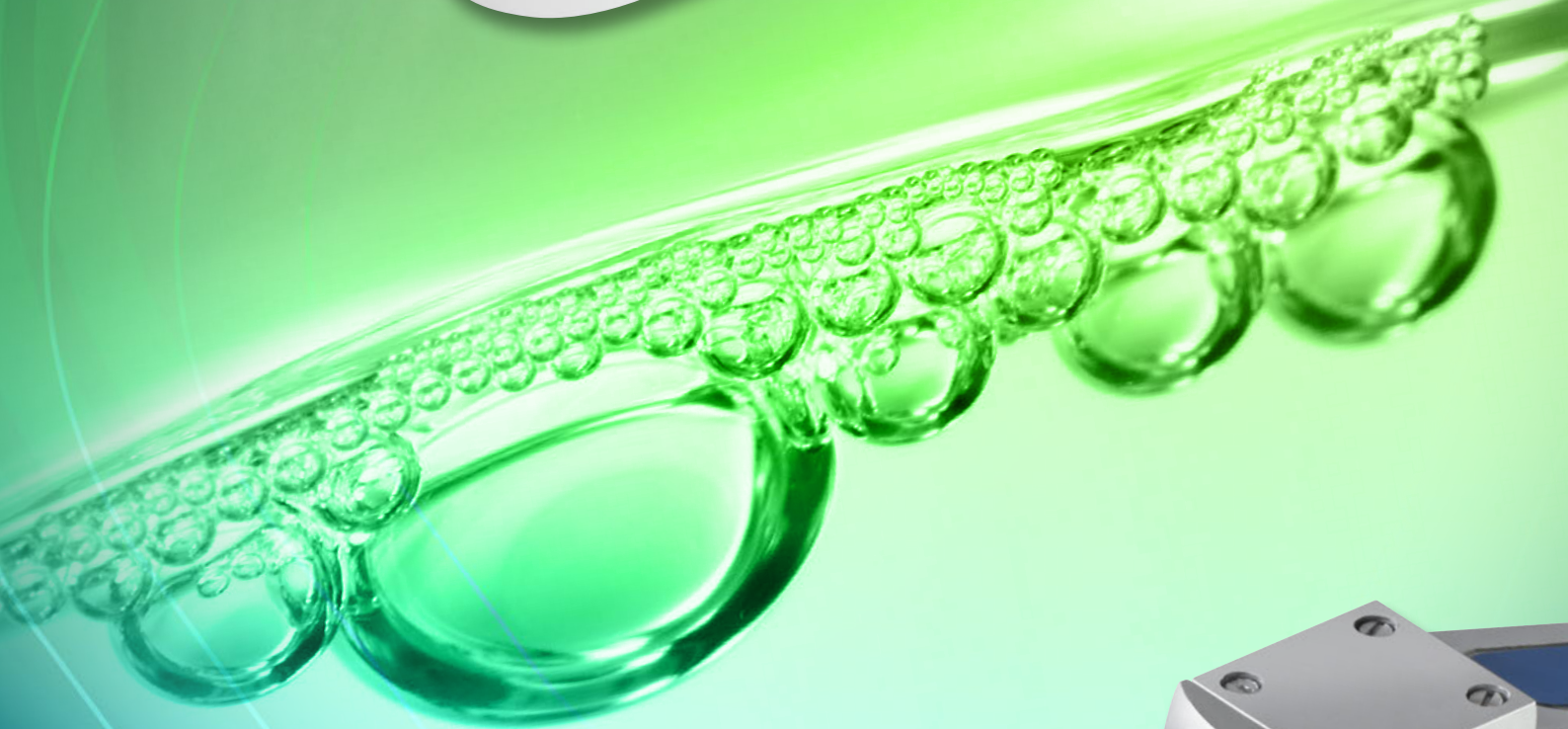
There is also a lot for you to discover online: current offers, new models, sale articles and interesting news ...

Of course, ordering is also very easy at [www.kern-sohn.com](http://www.kern-sohn.com)



[www.kern-sohn.com](http://www.kern-sohn.com)







# Refractometers

- |    |  |     |
|----|--|-----|
| 11 | Analogue refractometers –<br>type: hand-held | 94  |
| 12 | Abbe refractometers –<br>type: desktop       | 101 |
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# Polarimeter

- |    |                    |     |
|----|--------------------|-----|
| 15 | Manual polarimeter | 111 |
|----|--------------------|-----|



**Ralf Gutbrod**  
Technical sales KERN Optics

Tel. +49 7433 9933-306  
optics@kern-sohn.com



Also available with calibration certificate, see page 110!

## Refractive index measurement for laboratories and the industry

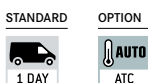
### Features

- The KERN ORA refractometers are universal, maintenance-free analogue handheld refractometers
- The handy and robust design allows the easy, efficient and sustainable use in everyday life
- Manually calculated conversions and errors of the user are avoided by multiple selectable scales
- These scales are especially developed, exactly calculated and checked. They are also characterized by their thin and clear lines
- The optical system and the prism cover are made of special material which allows a low-tolerance measuring
- All ORA models are equipped with an eyepiece for easy and smooth setting for many different diopter strengths
- The models marked with "ATC" have an automatic temperature compensation which enables accurate measurement at different ambient temperatures (10 °C/30 °C)
- The following accessory-parts are included:
  - Storage box
  - Calibration liquid
  - Calibration block (if required)
  - Pipette
  - Screwdriver
  - Cleaning tissue
- Further accessories are optionally available

### Technical data

- Die-cast housing of copper-aluminium alloy, chrome coated
- Measurement temperature without ATC: 20 °C
- Measurement temperature range with ATC: 10 °C/30 °C
- Dimensions of the box: 205×75×55 mm (depending on the model)
- Product length: approx. 130 – 200 mm (depending on the model)
- Net weight approx. 135 – 600 g (depending on the model)

11



### Scope of application: Sugar

The following models are particularly suitable for the measurement of the “BRIX” value. They are used to determine the sugar content in food, especially in fruit, vegetables, juice and soft drinks. In the same ideal way these refractometers serve for monitoring processes in the industry (coolant monitoring, oils, water-based mixtures).

The main scope of applications is:

- Industry: Monitoring of lubricants for process and quality control
- Food industry: Beverages, fruits and sweets
- Agriculture: Determination of the degree of ripeness of fruits for quality control in harvesting
- Restaurants and large-scale catering establishment



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 10BB</b>	Brix	0 - 10 %	0,1 %		<b>80,-</b>
<b>ORA 10BA</b>	Brix	0 - 10 %	0,1 %	✓	<b>85,-</b>
<b>ORA 18BB</b>	Brix	0 - 18 %	0,1 %		<b>80,-</b>
<b>ORA 20BB</b>	Brix	0 - 20 %	0,1 %		<b>80,-</b>
<b>ORA 20BA</b>	Brix	0 - 20 %	0,1 %	✓	<b>85,-</b>
<b>ORA 32BB</b>	Brix	0 - 32 %	0,2 %		<b>80,-</b>
<b>ORA 32BA</b>	Brix	0 - 32 %	0,2 %	✓	<b>85,-</b>
<b>ORA 62BB</b>	Brix	28 - 62 %	0,2 %		<b>80,-</b>
<b>ORA 62BA</b>	Brix	28 - 62 %	0,2 %	✓	<b>85,-</b>
<b>ORA 82BB</b>	Brix	45 - 82 %	0,5 %		<b>80,-</b>
<b>ORA 80BB</b>	Brix	0 - 80 %	0,5 %		<b>80,-</b>

### Scope of application: Honey

The following models are particularly suitable for the measurement of the “BRIX” value, as well as the water content in honey and “degrees Baumé” to determine the relative density of liquids.

The main scope of applications is:

- Beekeeping
- Honey production

Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 3HB</b>	Brix Baumé Water content	58 - 92 % 38 - 43 °Bé 12 - 27 %	0,5 % 0,5 °Bé 1 %		<b>85,-</b>
<b>ORA 3HA</b>	Brix Baumé Water content	58 - 92 % 38 - 43 °Bé 12 - 27 %	0,5 % 0,5 °Bé 1 %	✓	<b>90,-</b>
<b>ORA 6HB</b>	Water content	12 - 30 %	0,1 %		<b>95,-</b>
<b>ORA 6HA</b>	Water content	12 - 30 %	0,1 %	✓	<b>100,-</b>



**Scope of application: Salt**

The following models are particularly suitable for the measurement and concentration control of the mass fraction of sodium chloride in water as well as of the content of NaCl (salt) in water. This is often used in the preparation and the cooking of sauces, bases for pastries, the production of brines (e.g. for white cheese) and the preparation of seafood and marinades for meat.

The main scope of applications is:

- Food industry
- Restaurants and large-scale catering establishment
- Aquaristic: Fishkeepers/Fishfarmers in sea and sweetwater



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 1SB</b>	Salinity specific gravity	0 – 100 ‰ 1,000 – 1,070 sg	1 ‰ 0,001 sg		<b>80,-</b>
<b>ORA 1SA</b>	Salinity specific gravity	0 – 100 ‰ 1,000 – 1,070 sg	1 ‰ 0,001 sg	✓	<b>85,-</b>
<b>ORA 2SB</b>	Salt (NaCl)	0 – 28 %	0,2 %		<b>80,-</b>
<b>ORA 2SA</b>	Salt (NaCl)	0 – 28 %	0,2 %	✓	<b>85,-</b>
<b>ORA 3SB</b>	Salt (NaCl) Brix	0 – 28 % 0 – 32 %	0,2 % 0,2 %		<b>80,-</b>
<b>ORA 3SA</b>	Salt (NaCl) Brix	0 – 28 % 0 – 32 %	0,2 % 0,2 %	✓	<b>85,-</b>

**Scope of application: Wine**

The following models are particularly suitable for the measurement of the content of sugar in fruits. It indicates the expected °Alcohol of the fruit. The degree of ripeness of fruit (fruit-sugar) can also be determined, such as e.g. grapes.

The main scope of applications is:

- Agriculture: Wine-growing and fruit-growing
- Wine-production
- Must and alcohol production

°Oe = Degree Oechsle, °KMW = Klosterneuburger Must balance

Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 1WB</b>	Oechsle KMW (Babo) Brix	0 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0,25 °KMW 0,2 %		<b>80,-</b>
<b>ORA 1WA</b>	Oechsle KMW (Babo) Brix	0 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0,25 °KMW 0,2 %	✓	<b>85,-</b>
<b>ORA 3WB</b>	Oechsle Brix	30 – 140 °Oe 0 – 32 %	1 °Oe 0,2 %		<b>80,-</b>
<b>ORA 3WA</b>	Oechsle Brix	30 – 140 °Oe 0 – 32 %	1 °Oe 0,2 %	✓	<b>85,-</b>
<b>ORA 7WB</b>	Oechsle KMW (Babo) Brix	30 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0,2 °KMW 0,2 %		<b>80,-</b>
<b>ORA 7WA</b>	Oechsle KMW (Babo) Brix	30 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0,2 °KMW 0,2 %	✓	<b>85,-</b>







**Scope of application: Beer/alcohol**

The following models are particularly suitable for determining the sugar content of the original wort in its unfermented state. The value can be read straightaway, without having to be converted, using the SG Wort and Degrees Plato scales. In addition, the percent by volume and percent by mass scales can be used to determine the alcohol content of clear spirits.

The main scope of applications is:

- Beer brewers
- Alcohol production



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 3AB</b>	Brix SG Wort	0 – 32 % 1,000 – 1,130 sgW	0,2 % 0,001 sgW		<b>80,-</b>
<b>ORA 3AA</b>	Brix SG Wort	0 – 32 % 1,000 – 1,130 sgW	0,2 % 0,001 sgW	✓	<b>85,-</b>
<b>ORA 4AB</b>	Plato	0 – 18° P	0,1° P		<b>80,-</b>
<b>ORA 4AA</b>	Plato	0 – 18° P	0,1° P	✓	<b>85,-</b>
<b>ORA 1AB</b>	Percentage by volume Percentage by volume	0 – 50 % (v/v) 50 – 80 % (v/v)	1 % (v/v) 2,5 % (v/v)		<b>80,-</b>
<b>ORA 2AB</b>	Percentage by mass Percentage by mass	0 – 50 % (w/w) 50 – 80 % (w/w)	1 % (w/w) 2,5 % (w/w)		<b>80,-</b>

**Scope of application: Urine**

The following models are particularly suitable for the measurement of the specific gravity (sg) in urine, the quantity of serum (serumproteine) in urine (doping control among athletes), and the refractive index.

The main scope of applications is:

- Hospitals
- Doctor's surgeries/Physicians
- Medical training institutions
- Nursing homes
- Sports medicine (doping test)
- Veterinary



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 2PB</b>	Serum protein Urine (spec. gravity) Refractive index	0 – 12 g/dl 1,000 – 1,050 sgU 1,3330 – 1,3600 nD	0,2 g/dl 0,002 sgU 0,0005 nD		<b>80,-</b>
<b>ORA 2PA</b>	Serum protein Urine (spec. gravity) Refractive index	0 – 12 g/dl 1,000 – 1,050 sgU 1,3330 – 1,3600 nD	0,2 g/dl 0,002 sgU 0,0005 nD	✓	<b>85,-</b>
<b>ORA 5PB</b>	Serum protein Urine (s. g. dog) Urine (s. g. cat)	2 – 14 g/dl 1,000 – 1,060 sgU 1,000 – 1,060 sgU	0,1 g/dl 0,001 sgU 0,001 sgU		<b>80,-</b>

**Scope of application: Industry/Automotive**

The following models are particularly suitable for the measurement and determination of AdBlue, glycol concentration (ethylene (EG) and propylene (PG)), battery fluid (BF), urea, the freezing point of fountain solution (CW). Furthermore these models are suitable for the measurement of thermal exchange systems.

The main scope of applications is:

- Automotive industry: Car-workshops and producers, in accordance with the VW standards G11/G12 and G13
- Chemical industry
- Solar industry: Antifreeze monitoring



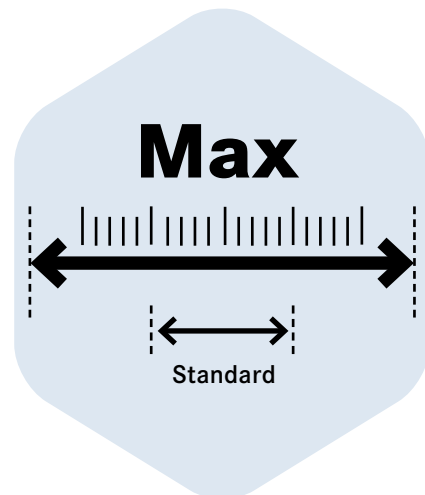
Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 4FB</b>	EG (G11/12) PG (G13) CW BF	-50-0 °C -50-0 °C -40-0 °C 1,10-1,40 kg/l	1 °C 1 °C 5 °C 0,01 kg/l		<b>80,-</b>
<b>ORA 4FA</b>	EG (G11/12) PG (G13) CW BF	-50-0 °C -50-0 °C -40-0 °C 1,10-1,40 kg/l	1 °C 1 °C 5 °C 0,01 kg/l	✓	<b>85,-</b>
<b>ORA 1UB</b>	Urea	0-40 %	0,2 %		<b>80,-</b>
<b>ORA 1UA</b>	Urea	0-40 %	0,2 %	✓	<b>85,-</b>
<b>ORA 4UB</b>	Urea EG (G11/12) PG (G13) CW BF	30-35 % -50-0 °C -50-0 °C -40-0 °C 1,10-1,40 kg/l	0,2 % 1 °C 1 °C 5 °C 0,01 kg/l		<b>80,-</b>
<b>ORA 4UA</b>	Urea EG (G11/12) PG (G13) CW BF	30-35 % -50-0 °C -50-0 °C -40-0 °C 1,10-1,40 kg/l	0,2 % 1 °C 1 °C 5 °C 0,01 kg/l	✓	<b>85,-</b>

**Scope of application: Expert applications**

The following models have a special large measuring range for the refractive index and large divided scales for the measurement and clear reading of Brix values.

The main scope of applications is:

- Universal application, especially when extra large measuring ranges are required



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 80BE</b>	Brix	0 – 50 % 50 – 80 %	0,5 % 0,5 %		<b>140,-</b>
<b>ORA 90BE</b>	Brix	0 – 42 % 42 – 71 % 71 – 90 %	0,2 % 0,2 % 0,2 %		<b>305,-</b>
<b>ORA 1RE</b>	Refractive index	1,333 – 1,405 nD 1,405 – 1,468 nD 1,468 – 1,517 nD	0,005 nD 0,005 nD 0,005 nD		<b>305,-</b>
<b>ORA 4RR</b>	Refractive index	1,440 – 1,520 nD	0,001 nD		<b>85,-</b>



**Scope of application: Gemmology/Jewellery**

The Gem models have a special refracting-index range for jewellery. For this refractometer there is a nice leather bag in the scope of delivery included.

The main scope of applications is:

- Jewellers
- Training/Education
- Jewellery industry



Model	Scales	Measuring range	Division	ATC	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORA 1GG</b>	Refractive index	1,30 – 1,81 nD	0,01 nD		<b>225,-</b>



**Accessory parts: Analogue refractometer – ORA**



Prism coverplate with LED  
ORA-A1101



Calibration liquid/  
Contact liquid



Leather bag  
ORA-A2103



Calibration block

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>ORA-A1101</b>	Prism coverplate with integrated LED illumination	<b>19,-</b>
<b>ORA-A2103</b>	Leather bag for analog refractometers	<b>19,-</b>
<b>ORA-A2107</b>	Leather bag for Gem refractometers (Spare part)	<b>30,-</b>
<b>ORA-A1010</b>	Calibration liquid – distilled water – Set of 5 Volume: 5× approx. 2,5 ml	<b>19,-</b>
<b>ORA-A1002</b>	Contact liquid – Clove oil (for Calibration value 19,6%) Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORA-A1003</b>	Calibration liquid – saturated salt solution Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORA-A1004</b>	Contact liquid – Clove oil (for Calibration value 78,8%) Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORA-A1005</b>	Calibration block for models ORA 82BB, ORA 3HA, ORA 3HB, ORA 6HA, ORA 6HB , ORA 4RR	<b>19,-</b>
<b>ORA-A1007</b>	Contact liquid – Diiodomethane “Standard” (Refractive index: 1,74 nD) Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORA-A3001</b>	Contact liquid – Diiodomethane “Pro” (Refractive index: 1,79 nD) Volume: approx. 2 ml	<b>35,-</b>
<b>ORA-A1008</b>	Calibration block for model ORA 1GG	<b>19,-</b>
<b>ORA-A2001</b>	Prism coverplate (spare part)	<b>19,-</b>

Relationship overview – refractometer calibration (analogue)

Model refractometer	Calibration value	Calibration liquid	Article number liquid	Calibration block	Article number calibration block
ORA 10BA; ORA 10BB; ORA 18BB; ORA 1WA; ORA 1WB; ORA 20BA; ORA 20BB; ORA 32BA; ORA 32BB; ORA 3SA; ORA 3SB; ORA 3WA; ORA 3WB; ORA 7WA; ORA 7WB; ORA 80BB; ORA 80BE; ORA 3AB; ORA 3AA	0 % Brix	distilled water	ORA-A1010	-	-
ORA 4AA; ORA 4AB	0 ° Plato	distilled water	ORA-A1010	-	-
ORA 1UA; ORA 1UB	0 % Urea	distilled water		-	
ORA 4FA; ORA 4FB; ORA 4UA; ORA 4UB	0 °C EG/PG/CW	distilled water		-	
ORA 1SA; ORA 1SB	0 ‰ Salinity	distilled water		-	
ORA 2SA; ORA 2SB	0 % Salt (NaCl)	distilled water		-	
ORA 2AB	0 % Vol (weight)	distilled water		-	
ORA 2PA; ORA 2PB; ORA 5PB	1,000 sg Urine	distilled water		-	
ORA 62BA; ORA 62BB	29,6 % Brix	saturated salt solution	ORA-A1003	-	-
ORA 3HA; ORA 3HB; ORA 82BB	78,8 % Brix	Clove oil CAS 8000-34-8	ORA-A1004	yes	ORA-A1005
ORA 4RR	1,4875 nD	Clove oil CAS 8000-34-8	ORA-A1004	yes	ORA-A1005
ORA 6HA; ORA 6HB	19,6 % Water content	Clove oil CAS 8000-34-8	ORA-A1002	yes	ORA-A1005
ORA 1GG	1,515 nD	Diiodomethane CAS 90-11-9	ORA-A1007	yes	ORA-A1008



Also available with calibration certificate, see page 110!

## Refractive index measurement for pharmacy, laboratories and industry

### Features

- The KERN ORT refractometers are universal analog Abbe refractometers
- The handy and robust design allows the easy, efficient and sustainable use in everyday life
- The integrated scale allows the use in different applications and provides the best possible security to read the measurement results accurately
- The scope of delivery includes:
  - Calibration solution
  - Calibration block
  - Pipette
  - Small screwdriver
  - Cleaning tissue
  - Digital thermometer
- Accessories are available as options

### Technical data

- Measurement temperature: 20 °C
- Overall dimensions W×D×H  
180×90×240 mm
- Net weight approx. 1950 g

STANDARD



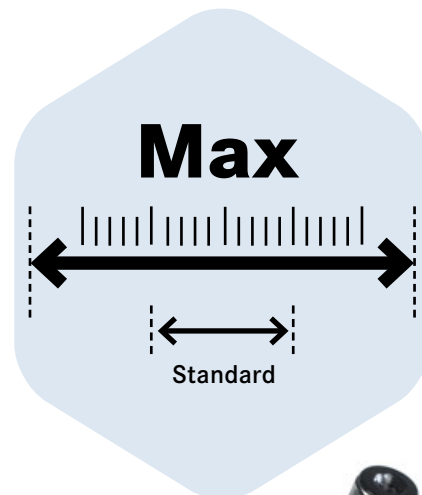
**Scope of application: Industry/Pharmacy/Laboratory**

The following model is a simple yet highly reliable Abbe refractometer with a digital thermometer. Liquid, solid and pasty samples can be evaluated. This refractometer is robust, accurate and easy to use. Optionally a solide aluminium case for transport and storage is available. It measures the refractive index (nD).

The main scope of applications is:

- Sugar industry: for example cane sugar
- Pharmacy
- Beverage industry
- Food industry
- Chemical industry
- Laboratories
- Training

Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORT 1RS</b>	Brix Refractive index	0 - 95 % 1,3000 - 1,7000 nD	± 0,1 % ± 0,0002 nD	0,25 % 0,0005 nD	<b>690,-</b>



ORT 1RS

**Accessory parts: Abbe refractometer – ORT**

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>ORA-A1102</b>	Aluminium suitcase Dimension: 310×120×240 mm, weight: 1300 g	<b>80,-</b>
<b>ORA-A2266</b>	Digital thermometer (0 °C/50 °C) (Spare part)	<b>60,-</b>
<b>ORA-A2267</b>	Calibration block for ORT 1RS	<b>40,-</b>
<b>ORA-A1107</b>	Contact liquid – Alpha-Bromonaphthalene (Refractive index: 1,65 nD) Volume: approx. 2,5 ml	<b>25,-</b>
<b>ORA-A3001</b>	Contact liquid – Diiodomethane “Pro” (Refractive index: 1,79 nD) Volume: approx. 2 ml	<b>35,-</b>



Transport and storage case  
ORA-A1102



Calibration block  
ORA-A2267

Relationship overview – refractometer calibration (Abbe)

Model refractometer	Calibration value	Calibration liquid	Article number liquid	Calibration block	Article number calibration block
<b>ORT 1RS</b>	engraved on the block (nD value)	Alpha-Bromnaphthalene CAS 90-11-9	ORA-A1107	yes	ORA-A2267

NEW



Transport and storage case



Rear view, screw-on battery compartment cover

## Digital measurement of refraction index for universal application

### Features

- The KERN ORM refractometers are accurate and universal maintenance free digital handheld refractometers
- They are characterized by their easy-using and robustness
- The typical and practical design is suitable for a quick and convenient everyday use
- The large, easy-to-read display with integrated temperature display supports the user to reliably determine the measurement
- The integrated automatic temperature compensation (ATC), avoids the manual conversion of the measurement. This allows a quick and efficient usage of the instrument
- Rapid, user-friendly calibration of the refractometer is possible at any time using standard commercial distilled water
- The refractometers from the KERN ORM range are protected to international IP65 protection class, against dust and water splashes. After use, you can rinse the refractometer under running water
- Mean value measurements possible
- The following accessory-parts are included:
  - Prism cover lid
  - Pipette
  - Storage box
  - 1 × AAA battery
  - Screwdriver

### Technical data

- Measurement temperature: 0 °C – 40 °C
- Overall dimensions W×D×H 121×58×25 mm
- Net weight approx. 289 g
- Power supply: 1 × AAA (1,5 V)
- Lifetime of the battery: approx. 10.000 measurements
- ATC (Automatic Temperature Compensation)
- Minimum sample volume: 4 drops
- Automatic energy management (AUTO-OFF after 60 seconds)
- Mean value measurement (15 measurements)



Also available with calibration certificate, see page 110!

### STANDARD



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORM 50BM</b>	Brix Refractive index	0 – 50 % 1,3330 – 1,4200 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>340,-</b>
<b>ORM 1RS</b>	Brix Refractive index	0 – 90 % 1,3330 – 1,5177 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>430,-</b>



Transport and storage case



Rear view, screw-on battery compartment cover



IP65: Protected against dust and water splashes

## Digital refractive index measurement for laboratories and the industry for multi-application ► PREMIUM refractometer

### Features

- The KERN ORF refractometers are accurate and universal maintenance free digital handheld refractometers
- The large display is easy to read. Mistakes in reading are avoided
- The typical and practical design is suitable for a quick and convenient everyday use and is characterized by its easy-using and robustness
- The PREMIUM refractometers from the KERN ORF range are protected to international IP65 protection class, against dust and water splashes. After use, you can rinse the refractometer under running water
- The large, easy-to-read TFT colour display with integrated temperature display supports the user to reliably determine the measurement
- A large selection of models is available with single or multiple scales. This allows the use in various applications
- The instrument comes with an optimized software that can show a result in different scales
- The integrated automatic temperature compensation (ATC), avoids the manual conversion of the measurement. This allows a quick and efficient usage of the instrument
- Due to the fact that the refractometer has been calibrated at the factory, this guarantees that it can be used immediately for accurately measuring your sample.
- The following accessory-parts are included:
  - Calibration liquid
  - Pipette
  - Storage box
  - 2 × AAA batteries
  - Leather bag
  - Screwdriver
  - Cleaning tissue

### Technical data

- Measurement temperature: 5 °C – 40 °C
- Overall dimensions W×D×H 145×67×40 mm
- Net weight approx. 200 g
- Power supply: 2 × AAA (1,5 V)
- Lifetime of the battery: approx. 3.750 measurements
- ATC (Automatic Temperature Compensation), does not apply to the refraction index scale
- Minimum sample volume: 2–3 drops
- Automatic energy management (AUTO-OFF after 90 seconds)



Also available with calibration certificate, see page 110!

#### STANDARD





### Scope of application: Sugar

The following models are particularly suitable for the measurement of the “BRIX” value. They are used to determine the sugar content in food, especially in fruit, vegetables, juice and sweet or soft drinks. In the same ideal way, these refractometers serve in monitoring processes in the industry (coolant monitoring, oils, water-based mixtures). Alternatively, the display can be switched to show the refractive index.

The main scope of applications is:

- Industry: Monitoring of lubricants in machines and quality control
- Food industry: Beverages, fruits and sweets
- Agriculture: Determination of the degree of ripeness of fruit for quality control in harvesting
- Restaurants and large-scale catering establishment



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 45BM</b>	Brix Refractive index	0 – 45 % 1,3330 – 1,4098 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>340,-</b>
<b>ORF 92BM</b>	Brix Refractive index	58 – 92 % 1,4370 – 1,5233 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>370,-</b>
<b>ORF 85BM</b>	Brix Refractive index	0 – 85 % 1,3330 – 1,5100 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>395,-</b>

ONLY WHILE STOCKS LAST

### Scope of application: Honey

The following models are particularly suitable for the measurement of the “BRIX” value, the water content in honey according to the International Honey Commission (IHC2002) and “degrees Baumé” to determine the relative density of liquids. Alternatively the display can be switched to show the refractive index.

The main scope of applications is:

- Beekeeping
- Honey production



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 92HM</b>	Brix Baumé Water content Refractive index	58 – 92 % 38 – 43 °Bé 13 – 25 % 1,4370 – 1,5233 nD	± 0,2 % ± 0,2 °Bé ± 0,2 % ± 0,0003 nD	0,1 % 0,1 °Bé 0,1 % 0,0001 nD	<b>370,-</b>

### Scope of application: Salt

The following models are particularly suitable to determine the concentration of NaCl (salt) in water. This is often used for the preparation and for the cooking of sauces, bases for pastries, the production of brines (e.g. for white cheese) and the preparation of seafood and marinades for meat. Alternatively the display can be switched to show the refractive index.

The main scope of applications is:

- Food industry
- Restaurants, and large-scale catering establishment, canteens



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 3SM</b>	Brix Salt (NaCl) Refractive index	0 - 45 % 0 - 28 % 1,3330 - 1,4100 nD	± 0,2 % ± 0,2 % ± 0,0003 nD	0,1 % 0,1 % 0,0001 nD	<b>340,-</b>

### Scope of application: Wine

The following models are particularly suitable for the measurement of the sugar content in fruit. It indicates the expected °Alcohol of the fruit. The degree of ripeness of fruit (fruit-sugar) can also be determined, such as e.g. grapes.

The main scope of applications is:

- Agriculture: Wine-growing (viticulture) and fruit-growing
- Wine-production
- Must and alcohol production



°Oe = Degree Oechsle, °KMW = Klosterneuburger Most Waage

Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 2WM</b>	Mass SW Vol. AP Oechsle KMW (Babo)	0 - 35 % 0 - 22 % 0 - 150 °Oe 0 - 25 °KMW	± 0,2 % ± 0,2 % ± 1 °Oe ± 0,2 °KMW	0,1 % 0,1 % 1 °Oe 0,1 °KMW	<b>340,-</b>

### Scope of application: Urine

The following models are particularly suitable for the measurement of the specific gravity (sg) in urine, the quantity of serum (serumproteine) in urine (doping control among athletes), and the refractive index.

The main scope of applications is:

- Hospitals
- Doctor's surgeries/Physicians
- Medical training institutions
- Nursing homes
- Sports medicine (doping test)



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 1PM</b>	Serum protein Urine (spec. gravity) Refractive index	0 - 12 g/dl 1,000 - 1,050 sgU 1,3330 - 1,3900 nD	± 0,1 g/dl ± 0,001 sgU ± 0,0003 nD	0,1 g/dl 0,001 sgU 0,001 nD	<b>340,-</b>

### Scope of application: Industry/Automotive

The following models are particularly suitable for the measurement and determination of AdBlue, glycol concentration (ethylene (EG) and propylene (PG)), battery fluid (BF), urea, the freezing point of fountain solution (CW). Furthermore these models are suitable for the measurement of thermal exchange systems.

The main scope of applications is:

- Automotive industry: Car-workshops and producers
- Chemical industry
- Solar industry: Antifreeze monitoring



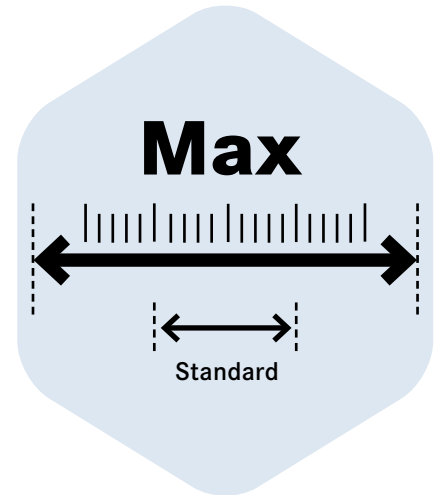
Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 2UM</b>	EG PG BF CW	-50 - 0 °C -50 - 0 °C 1,00 - 1,50 kg/l -40 - 0 °C	± 0,5 °C ± 0,5 °C ± 0,01 kg/l ± 0,5 °C	0,1 °C 0,1 °C 0,01 kg/l 0,1 °C	<b>340,-</b>
<b>ORF 5UM</b>	EG PG Urea CW	-50 - 0 °C -50 - 0 °C 0 - 40 % -40 - 0 °C	± 0,5 °C ± 0,5 °C ± 0,2 % ± 0,5 °C	0,1 °C 0,1 °C 0,1 % 0,1 °C	<b>340,-</b>
<b>ORF 6US</b>	Urea Refractive index	0 - 40 % 1,3330 - 1,4100 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD	<b>340,-</b>

**Scope of application: Expert applications**

The following model has a special large measuring range for the refractive index.

The main scope of applications is:

- Universal measuring instrument, especially for applications with extra large measuring ranges



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORF 1RS</b>	Refractive index	1,3330 - 1,5400 nD	± 0,0005 nD	0,0001 nD	<b>430,-</b>

■ ONLY WHILE STOCKS LAST

**Accessory parts: Digital refractometer – ORF**

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>ORF-A1005</b>	Prism cover for digital refractometers	<b>25,-</b>
<b>ORA-A1010</b>	Calibration liquid – distilled water Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORA-A1006</b>	Calibration liquid – Triethyl citrate Volume: approx. 2,5 ml	<b>19,-</b>
<b>ORD-A2104</b>	Leather bag for digital refractometer (Spare part)	<b>19,-</b>



Calibration liquid/  
Contact liquid

Relationship overview – refractometer calibration (digital)					
Model refractometer	Calibration value	Calibration liquid	Article number liquid	Calibration block	Article number calibration block
<b>ORF 45BM; ORF 85BM; ORF 3SM</b>	0 % Brix	distilled water	ORA-A1010	-	-
<b>ORF 2WM</b>	0 °KMW	distilled water	ORA-A1010	-	-
<b>ORF 1PM; ORF 1RS</b>	1,3330 nD	distilled water	ORA-A1010	-	-
<b>ORF 2UM; ORF 5UM</b>	0 °C EG/PG/CW	distilled water	ORA-A1010	-	-
<b>ORF 6US</b>	0 % Urea	distilled water	ORA-A1010	-	-
<b>ORF 92BM; ORF 92HM</b>	60 % Brix	Triethyl citrate CAS 77-93-0	ORA-A1006	-	-

NEW



Transport and storage case



Rear view, screw-on battery compartment cover

## Digital refractive index measurement for laboratories and the industry for multi-application ► Laboratory refractometer

### Features

- The models in the KERN ORL range are accurate, universal and maintenance-free digital desktop refractometers
- Other key features are the extra-large measuring range and a high degree of accuracy.
- With their handy design, they are ideal for convenient and rapid everyday use
- The large, easy-to-read multi-function display with integrated temperature display supports the user to reliably determine the measurement.
- The integrated automatic temperature compensation (ATC), avoids the manual conversion of the measurement. This allows a quick and efficient usage of the instrument
- Rapid, user-friendly calibration of the refractometer is possible at any time using standard commercial distilled water.
- Mean value measurement (15 measurements)
- The following accessory-parts are included:
  - Pipette
  - Storage box
  - USB cable
  - Power adapter
  - Screwdriver

### Technical data

- Measurement temperature: 0 °C – 40 °C
- Overall dimensions W×D×H 180×100×55 mm
- Net weight approx. 365 g (without battery)
- Power supply: USB connection, as an alternative 1 × battery 3.7 V 3000 mA (not included with delivery)
- ATC (Automatic Temperature Compensation)
- Minimum sample volume: 0,3–0,4 ml
- Automatic energy management (AUTO-OFF after 3 Minutes)
- Mean value measurement (15 measurements)

### Accessories

- Rechargeable Battery 3,7 V 3000 mA, KERN ORL-A2007, € 55,-



Also available with calibration certificate, see page 110!

STANDARD		OPTION	
ATC	USB 2.0	1 DAY	RECHARGE

Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORL 94BS</b>	Brix Refractive index	0 – 94 % 1,3330 – 1,5290 nD	± 0,1 % ± 0,0002 nD	0,1 % 0,0001 nD	<b>780,-</b>



## Your partner for calibration services, management of test equipment and support

### Features

- Any analogue or digital refractometer will only give correct results if it is checked regularly, i.e. calibrated correctly and adjusted when required. A refractometer or another measuring device is only a reliable measuring and checking tool if it is calibrated and this calibration is documented as part of a quality procedure
- Measuring “correctly” is of elementary significance, as it is not unusual for inaccurate or “wrong” measurements to have expensive economic consequences. Calibration or establishing the accuracy of checking equipment must therefore be carried out by laboratories throughout the world

- In the context of standard requirements for monitoring checking equipment, every company with a Quality Management system is obliged to test and document its measuring equipment at regular intervals
- The refractometer calibration certificate documents the intended measuring functionality and confirms the measuring accuracy of your refractometer to you

### Important

- Refractive index standard traceable to SRM<sup>1</sup> of NIST<sup>2</sup> and PTB<sup>3</sup>
- This service is not possible for the following refractometer models:
  - ORA 6HA
  - ORA 1GG
- Calibration of products from other manufacturers is possible on request

<sup>1</sup>Standard reference material

<sup>2</sup>National Institute of Standards and Technology

<sup>3</sup>Physikalisch-Technische Bundesanstalt (German metrology institute)

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>961-290</b>	Calibration certificate for refractometers on initial calibration	<b>109,-</b>
<b>961-290R</b>	Calibration certificate for refractometers on recalibration	<b>109,-</b>

# 14 Polarimeter





The ideal helper for getting started with the analysis of your optically active solutions in the laboratory

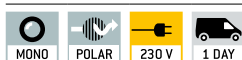
#### Features

- The KERN OAB 10LN is a manual polarimeter which is characterised by its ergonomic design and easy handling
- The powerful 589 nm sodium vapour lamp is the optimum light source to produce a linear, polarised beam of light
- The 1° scale division including Nonius (0.05°) enables precise definition of the angle of rotation of the substance to be observed
- To hold liquid samples, two glass cuvettes (100 mm/200 mm) are included with the delivery
- Included with delivery:  
Sodium vapour lamp, 100 mm glass cuvette, 200 mm Glasküvette, Replacement lenses and sealing rings for cuvettes

#### Technical data

- Light source: Sodium vapour lamp (589 nm)
- Stabilisation time: 10 mins after switching on
- Overall dimensions W×D×H  
500×135×330 mm
- Net weight approx. 5 kg

#### STANDARD





### Scope of application: Laboratory/Education

The reliable polarimeters in the OAB-N range have been designed for simple laboratory applications as well as practical training. You can evaluate liquid, optically-active samples with chiral characteristics with this device. Typical applications are determining kinetics in cane sugar inversion, determining mutarotation of glucose and investigation of starch hydrolysis. The optical rotation is measured in degrees.

The main scope of applications is:

- Pharmacy
- Sugar industry: for example cane sugar
- Beverage industry
- Food industry
- Chemical industry
- Laboratories
- Training



Cuvette in measuring chamber

Model	Scales	Measuring range	Division	Vernier	Wave length	Price excl. of VAT ex works €
<b>KERN</b>						
<b>OAB 10LN</b>	Optical rotation	± 180°	1°	0,05°	589 nm	<b>690,-</b>

### Accessory parts: OAB

Model	Description	Price excl. of VAT ex works €
<b>KERN</b>		
<b>OAB-A2501</b>	Glass cuvette, Length: 100 mm (Spare part)	<b>80,-</b>
<b>OAB-A2502</b>	Glass cuvette, Length: 200 mm (Spare part)	<b>80,-</b>
<b>OAB-A2581</b>	Sodium vapour lamp, Wave length: 589 mm (Spare part)	<b>85,-</b>



Cuvette 10 and 20 cm



## Straight to the target!

Get straight to the right product. Use our new topic area search. Here you will quickly find products which suit your particular area of expertise

The screenshot displays the KERN website interface. At the top, there is a search bar with the placeholder text 'Suchbegriff' and a search icon. To the right of the search bar are icons for 'Benutzerkonto' (User Account) and 'Warenkorb' (Shopping Cart) with a '0' next to it. Below the search bar is a navigation menu with the following items: PRODUKTE, DIENSTLEISTUNG, SERVICE, DOWNLOADS, KERN INTERN, ZAHLUNG | VERSAND, and SONDERANGEBOTE.

Under the 'PRODUKTE' menu, a list of categories is shown with expandable arrows: Neuheiten 2021, Basicwaagen, Laborwaagen, Industriewaagen, Messtechnik-Komponenten, Medizinische Waagen, Prüfgewichte, Software, Messinstrumente, Optische Instrumente, Systemlösungen Industrie 4.0, Sondergeräte, and Zubehör. A 'Polarimeter' category is also listed below the main list.

Below the navigation menu, there is a large blue banner image. To the right of the banner, there are two checklists: 'Checkliste „Mein Wunschmikroskop“' and 'Checkliste „Mein Wunschrefraktometer“'. Each checklist includes a brief description of its purpose.

At the bottom of the page, there is a grid of 16 product images, each with a caption below it: Durchlichtmikroskope, Metallurgische Mikroskope, Polarisationsmikroskope, Stereomikroskope, Stereomikroskop-Sets, Digitalmikroskop-Sets, Videomikroskope, Stereomikroskop-Zubehör, Externe Beleuchtungseinheiten, Mikroskopkameras, Analoge Refraktometer, and Digitale Refraktometer.