

POLARISING MICROSCOPES



PROFESSIONAL
MEASURING

2018

KERN Pictograms



360° rotatable microscope head

360°



Monocular Microscope

For the inspection with one eye

MONO



Binocular Microscope

For the inspection with both eyes

BINO



Trinocular Microscope

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

TRINO



Abbe Condenser

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

ABBE



Halogen illumination

For pictures bright and rich in contrast

HAL



LED illumination

Cold, energy saving and especially long-life illumination

LED



Incident illumination

For non-transparent objects

IL



Transmitting illumination

For transparent objects

TL



Fluorescence illumination

For stereomicroscopes

FL



Fluorescence illumination for compound microscopes

With 100 W mercury lamp and filter

FL-HBO



Fluorescence illumination for compound microscopes

With 3 W LED illumination and filter

FL-LED



Phase contrast unit

For a higher contrast

PH



Darkfield condenser/unit

For a higher contrast due to indirect illumination

DF



Polarising unit

To polarise the light

POLAR



Infinity system

Infinity corrected optical system

INFINITY



Zoom magnification

For stereomicroscopes

ZOOM



Parallel optical system

For stereomicroscopes, enables fatigue-proof working

PARALLEL



Integrated scale

In the eyepiece

SCALE



SD card

For data storage

SD



USB 2.0 digital camera

For direct transmitting of the picture to a PC

USB 2.0



USB 3.0 digital camera

For direct transmitting of the picture to a PC

USB 3.0



WLAN data interface:

For transmitting of the picture to a mobile display device

WLAN



HDMI digital camera

For direct transmitting of the picture to a display device

HDMI



PC software

To transfer the measurements from the device to a PC.

SOFTWARE



Automatic temperature compensation

For measurements between 10 °C and 30 °C

AUTO ATC



Protection against dust and water splashes IPxx

The type of protection is shown by the pictogram.

IP



Battery operation

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

BATT



Battery operation rechargeable

Prepared for a rechargeable battery operation

RECHARGE



Mains adapter

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

230 V



Power supply

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

230 V



Package shipment

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

1 DAY

Abbreviations

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

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

Why you should choose a KERN microscope now!

For over 170 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.

By working closely with you and our production partners, within 3 years we have developed a complete product range of high-quality microscopes and refractometers.

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 2018: die KERN camera software – you will be amazed at how user-friendly and intuitive it is
- 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 2018 product range you can benefit from improved quality and a clear reduction in price, which we have been able to achieve through more efficient production methods and increased global sales of our microscopes and refractometers and of course we pass this straight on to you

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

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

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



Albert Sauter, Managing Director

Your advantages

fast

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

reliable

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

versatile

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



Order hotline
+49 [0] 7433 9933-0



E-mail order
info@kern-sohn.com



Service hotline
+49 [0] 7433 9933-199



Fax Order
+49 [0] 7433 9933-146



Online shop
www.kern-sohn.com



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



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

3 Polarising microscopes





λ Slip and quartz wedge

EDUCATIONAL LINE POL

The economical polarising microscope for training, laboratory and industry

Features

- The KERN OPE series is a range of excellent polarising microscopes with transmitted light for all common routine applications, such as, for example observation and analysis of translucent, isotropic materials such as, for example, crystals or minerals
- The strong, continuously dimmable 20 W halogen transmitted illumination is the basis for excellent and high-contrast images
- The height-adjustable and focusable 1,25 Abbe condenser with aperture diaphragm is a further quality feature of the KERN OPE series and ensures the very best adjustment of the illumination
- A quadruple nosepiece enables rapid and simple changing to the different magnification levels. As standard, the nosepiece is fitted with three achromatic “non stress” polarising objectives
- The monocular eyepiece tube is fitted with a polarising unit, a Bertrand lens and a $\lambda + \frac{1}{4} \lambda$ Slip
- A 360° revolving stage with 1° division, 6' fine division and locking function is integrated into the KERN OPE series as standard
- A large selection of accessories such as, for example, a quartz wedge, a mechanical table attachment as well as further objectives are available
- 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, mineralogy, texture observations, material testing, observation of crystals

Applications/Samples

- Less complex samples with polarising properties

Technical data

- Finite Optik (DIN)
- Quadplex nosepiece
- Siedentopf 30° inclined/360° rotatable
- Overall dimensions WxDxH 320x180x380 mm
- Net weight approx. 5,5 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
KERN						
OPE 118	Monocular	HWF 10x/φ 18 mm	Achromatic	Non-stress 4x/10x/40x	6 V/20 W Halogen (transmitted)	880,-

Price reduction

Model outfit		Model KERN	Order number	Price/piece excl. of VAT ex works €
		OPE 118		
Eyepieces (23,2 mm)	HWF 10×/∅ 18 mm (reticule 0,1 mm) (non-adjustable)	✓	OBB-A1349	60,-
	WF 16×/∅ 13 mm	○	OBB-A1354	45,-
Non-stress achromatic objectives	4×/0,10 W.D. 18,6 mm	✓	OBB-A1280	60,-
	10×/0,25 W.D. 6,5 mm	✓	OBB-A1278	75,-
	40×/0,66 (spring) W.D. 0,47 mm	✓	OBB-A1281	85,-
	20×/0,10 (spring) W.D. 1,75 mm	○	OBB-A1279	85,-
	60×/0,80 (spring) W.D. 0,1 mm	○	OBB-A1282	95,-
Monocular tube	30° inclined/360° rotatable	✓	OBB-A1227	105,-
Analyser unit	0 – 90°, can easily be moved out of the optical path	✓		
Bertrand lens	Can easily be moved out of the optical path	✓	OBB-A1120	230,-
λ + ¼ λ Slip	λ Slip and ¼ λ Slip (combination)	✓	OBB-A1316	140,-
Quartz wedge	I – IV Class	○	OBB-A1320	240,-
Revolving round stage	360° rotatable, Division 1°, Fine division 6', locking fuction	✓		
Polarising attached mechanical stage	Polarising attached mechanical stage	○	OBB-A1337	270,-
Condenser	Abbe N.A. 1,25 (aperture diaphragm)	✓	OBB-A1101	85,-
Polarising unit	Can be moved out of the optical path	✓		
Colour filters for transmitted illumination	Blue (holder ring)	✓	OBB-A1173	45,-
Illumination	6 V/20 W Halogen spare bulb (transmitted)	✓	OBB-A1370	25,-

✓ = Included with delivery

○ = Option



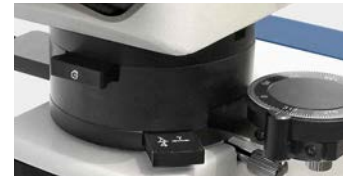
OPO



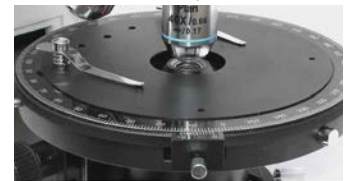
OPM



OPN



Bertrand lens, λ 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

- These devices are professional, fully-equipped polarising microscopes, which use the polarisation of light to analyse minerals, crystals and isotropic materials
- You can choose between a pure transmitted light variant (KERN OPM), a pure reflected light variant (KERN OPN) and a combi variant (KERN OPO). A complete Koehler illumination is integrated into all series as standard
- As standard, the KERN OPM and OPO transmitted illumination variants have a height-adjustable 0,9/0,13 swing-out Abbe condenser which can be centred, for complete Koehler illumination
- 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/360° rotatable
- Diopter adjustment: One-sided
- Overall dimensions WxDxH 500x200x500 mm
- Net weight approx. 14,5 kg

STANDARD



Model	Standard configuration					Price excl. of VAT ex works €
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
OPM 181	Trinocular	WF 10x/φ 20 mm	Inifnity Plan	Non-stress 4x/10x/20x/40x	6 V/20 W Halogen (transmitted)	3640,- ↓
OPN 182	Trinocular	WF 10x/φ 18 mm	Inifnity Plan	Non-stress 4x/10x/20x/40x	12 V/50 W Halogen (incident)	3630,- ↓
OPO 183	Trinocular	WF 10x/φ 18 mm	Inifnity Plan	Non-stress 4x/10x/20x/40x/60x	12 V/50 W Halogen (incident) + 6 V/20 W (transmitted)	4990,- ↓
OPN 184	Trinocular	WF 10x/φ 18 mm	Inifnity Plan	Non-stress 4x/10x/20x/40x	12 V/100 W Halogen (incident)	3790,- ↓
OPO 185	Trinocular	WF 10x/φ 18 mm	Inifnity Plan	Non-stress 4x/10x/20x/40x/60x	12 V/100 W Halogen (incident) + 6 V/20 W (transmitted)	5190,- ↓

↓ Price reduction

Model outfit		Model KERN					Order number	Price/piece excl. of VAT ex works €
		OPM 181	OPN 182	OPO 183	OPN 184	OPO 185		
Eyepieces (23,2 mm)	WF 10×/18 mm		✓	✓	✓	✓	OBB-A1347	40,-
	WF 10×/18 mm (reticule 0,1 mm) (adjustable)		✓	✓	✓	✓	OBB-A1464	90,-
	WF 10×/20 mm	✓					OBB-A1351	85,-
	WF 10×/20 mm (reticule 0,1 mm) (adjustable)	✓					OBB-A1465	140,-
Non-stress Infinity Plan objectives	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) W.D. 2,41 mm	✓	✓	✓	✓	✓	OBB-A1290	265,-
	40×/0,65 (spring) W.D. 0,65 mm	✓		✓		✓	OBB-A1292	310,-
	40×/0,65 (spring) (no cover glass) W.D. 3,9 mm	○	✓	○	✓	○	OBB-A1288	390,-
	60×/0,80 (spring) W.D. 0,33 mm	○	○	✓	○	✓	OBB-A1296	370,-
Infinity Plan objectives (no cover glass) for long working distance	20×/0,40 W.D. 8,35 mm	○	○	○	○	○	OBB-A1291	345,-
	40×/0,65 W.D. 3,90 mm	○	○	○	○	○	OBB-A1293	390,-
	50×/0,70 (spring) W.D. 1,95 mm	○	○	○	○	○	OBB-A1295	415,-
	80×/0,80 (spring) W.D. 0,85 mm	○	○	○	○	○	OBB-A1297	500,-
Trinocular tube	<ul style="list-style-type: none"> · Siedentopf 30° inclined · Interpupillary distance 50 – 75 mm · Light distribution 100:0 · Diopter adjustment: One-sided 	✓	✓	✓	✓	✓		
Professional dedicated polarising trinocular head	To keep the reticular cross in the right-hand eyepiece in the same position, independent of the adjustment of the tube.	○	○	○	○	○	OBB-A1210	550,-
Analyser unit with scale	360° rotatable, lockable	✓	✓	✓	✓	✓		
Bertrand lens	Built-in, center-adjustable	✓	✓	✓	✓	✓	OBB-A1121	305,-
$\lambda + \frac{1}{4} \lambda$ Slip	λ Slip and $\frac{1}{4} \lambda$ Slip (combination)	✓	✓	✓	✓	✓	OBB-A1316	140,-
Quartz wedge	I – IV Class	✓	✓	✓	✓	✓	OBB-A1321	240,-
Revolving round stage	360° rotatable, center-adjustable, division 1°, Vernier division 6'	✓	✓	✓	✓	✓		
Polarising attached mechanical stage	Polarising attached mechanical stage	○	○	○	○	○	OBB-A1337	270,-
Swing-out condenser	N.A. 0,9/0,13 swing-out achromatic condenser (aperture diaphragm)	✓		✓		✓	OBB-A1107	135,-
Polarising unit with scale (transmitted)	360° rotatable, lockable	✓		✓		✓		
Koehler illumination	6 V/20 W Halogen spare bulb (transmitted)	✓		✓		✓	OBB-A1370	25,-
Reflecting polarising unit replacement bulb	12 V/50 W Halogen		✓	✓	○	○	OBB-A1207	19,-
	12 V/100 W Halogen		○	○	✓	✓	OBB-A1377	35,-
Colour filters for transmitted illumination	Blue	✓		✓		✓	OBB-A1170	19,-
	Green	○		○		○	OBB-A1188	19,-
	Yellow	○		○		○	OBB-A1165	19,-
	Gray	○		○		○	OBB-A1183	19,-
C-Mount	1×	○	○	○	○	○	OBB-A1140	100,-
	0,57× (focus adjustable)	○	○	○	○	○	OBB-A1136	160,-

✓ = Included with delivery

○ = Option



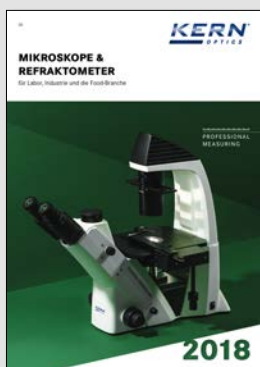
Cleaning sets for microscopes

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	25,-

Microscopy, measuring technology and testing services from a single source



Optical instruments catalogue



Balances & test service catalogue



Medical scales catalogue



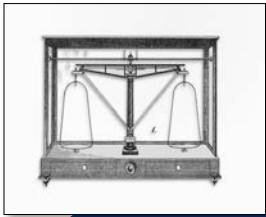
SAUTER measuring equipment catalogue



DAkkS calibration service brochure

KERN – Tradition and Innovation for over 170 years

An independent family business, KERN since already 8 generations is synonymous with quality and reliability in customer service.



1844

KERN is founded – precision balances are produced



1863

A proud Gottlieb Kern with his staff



1880

Pharmaceutical balance with Aesculap



1923

Inflation – KERN wages are paid with self printed currency



1980

The electronic balance ousts mechanical devices



1994

Accredited DKD laboratory (ISO 17025)



2000

New premises in Balingen



2002

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



2007

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



2008

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



2009

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



2012

Verification point for non-automatic balances and test weights.

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



2014

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



2015

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



2017

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

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