



$\lambda$  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					
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OPE 118</b>	Monocular	HWF 10x/φ 18 mm	Achromatic	Non-stress 4x/10x/40x	6 V/20 W Halogen (transmitted)	↓

↓ Price reduction

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

✓ = Included with delivery

○ = Option

 <b>360°</b>	<b>360° rotatable microscope head</b>	 <b>FL-LED</b>	<b>Fluorescence illumination for compound microscopes</b> With 3 W LED illumination and filter	 <b>WLAN</b>	<b>WLAN data interface:</b> For transmitting of the picture to a mobile display device
 <b>MONO</b>	<b>Monocular Microscope</b> For the inspection with one eye	 <b>PH</b>	<b>Phase contrast unit</b> For a higher contrast	 <b>HDMI</b>	<b>HDMI digital camera</b> For direct transmitting of the picture to a display device
 <b>BINO</b>	<b>Binocular Microscope</b> For the inspection with both eyes	 <b>DF</b>	<b>Darkfield condenser/unit</b> For a higher contrast due to indirect illumination	 <b>SOFTWARE</b>	<b>PC software</b> To transfer the measurements from the device to a PC.
 <b>TRINO</b>	<b>Trinocular Microscope</b> For the inspection with both eyes and the additional option for the connection of a camera	 <b>POLAR</b>	<b>Polarising unit</b> To polarise the light	 <b>AUTO ATC</b>	<b>Automatic temperature compensation</b> For measurements between 10 °C and 30 °C
 <b>ABBE</b>	<b>Abbe Condenser</b> With high numerical aperture for the concentration and the focusing of light	 <b>INFINITY</b>	<b>Infinity system</b> Infinity corrected optical system	 <b>IP</b>	<b>Protection against dust and water splashes IPxx</b> The type of protection is shown by the pictogram.
 <b>HAL</b>	<b>Halogen illumination</b> For pictures bright and rich in contrast	 <b>ZOOM</b>	<b>Zoom magnification</b> For stereomicroscopes	 <b>BATT</b>	<b>Battery operation</b> Ready for battery operation. The battery type is specified for each device.
 <b>LED</b>	<b>LED illumination</b> Cold, energy saving and especially long-life illumination	 <b>PARALLEL</b>	<b>Parallel optical system</b> For stereomicroscopes, enables fatigue-proof working	 <b>RECHARGE</b>	<b>Battery operation rechargeable</b> Prepared for a rechargeable battery operation
 <b>IL</b>	<b>Incident illumination</b> For non-transparent objects	 <b>SCALE</b>	<b>Integrated scale</b> In the eyepiece	 <b>230 V</b>	<b>Mains adapter</b> 230V/50Hz in standard version for EU. On request GB, AUS or USA version.
 <b>TL</b>	<b>Transmitting illumination</b> For transparent objects	 <b>SD</b>	<b>SD card</b> For data storage	 <b>230 V</b>	<b>Power supply</b> Integrated in balance. 230V/50Hz standard EU. More standards e.g. GB, AUS or USA on request.
 <b>FL</b>	<b>Fluorescence illumination</b> For stereomicroscopes	 <b>USB 2.0</b>	<b>USB 2.0 digital camera</b> For direct transmitting of the picture to a PC	 <b>1 DAY</b>	<b>Package shipment</b> The time required to manufacture the product internally is shown in days in the pictogram.
 <b>FL-HBO</b>	<b>Fluorescence illumination for compound microscopes</b> With 100 W mercury lamp and filter	 <b>USB 3.0</b>	<b>USB 3.0 digital camera</b> For direct transmitting of the picture to a PC		

## Abbreviations

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

## Your KERN specialist dealer: