



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 to the trinocular version. You can select this adapter from the following model outfit list.
- Please find detailed information in the following charts.

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 W×D×H 500×200×500 mm
- Net weight approx. 14,5 kg

STANDARD



OPTION



































Model	Standard configuration					
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
KERN						
OPM 181	Binocular	WF 10×/ø 20 mm	Infinity Plan	Non-stress 4×/10×/20×/40×	6 V/20 W Halogen (transmitted)	
OPN 182	Binocular	WF 10×/ø 18 mm	Infinity Plan	Non-stress 4×/10×/20×/40×	12 V/50 W Halogen (incident)	
OPO 183	Binocular	WF 10×/ø 18 mm	Infinity Plan	Non-stress 4×/10×/20×/40×/60×	12 V/50 W Halogen (incident) + 6 V/20 W (transmitted)	
OPN 184	Binocular	WF 10×/ø 18 mm	Infinity Plan	Non-stress 4×/10×/20×/40×	12 V/100 W Halogen (incident)	
OPO 185	Binocular	WF 10×/ø 18 mm	Infinity Plan	Non-stress 4×/10×/20×/40×/60×	12 V/100 W Halogen (incident) + 6 V/20 W (transmitted)	

Model outfit		Model KERN					Order number	
		OPM 181	OPN 182	OPO 183	OPN 184	OPO 185		
Eyepieces (23,2 mm)	WF 10×/18 mm		✓	✓	✓	✓	OBB-A1347	
	WF 10×/18 mm (reticule 0,1 mm) (adjustable)		✓	✓	✓	✓	OBB-A1464	
	WF 10×/20 mm	✓					OBB-A1351	
	WF 10×/20 mm (reticule 0,1 mm) (adjustable)	✓					OBB-A1465	
Non-stress Infinity Plan objectives	4×/0,10	✓	✓	✓	✓	✓	OBB-A1294	
	10×/0,25	✓	✓	✓	✓	✓	OBB-A1289	
	20×/0,40 (spring)	✓	✓	✓	✓	✓	OBB-A1290	
	40×/0,65 (spring)			✓		✓	OBB-A1292	
	40×/0,65 (spring) (no cover glass)	✓	✓	○	✓	○	OBB-A1288	
	60×/0,80 (spring)	○	○	✓	○	✓	OBB-A1296	
Infinity Plan objectives (no cover glass) for long working distance	LWD 20×/0,40 (spring) W.D. 8,35 mm	○	○	○	○	○	OBB-A1291	
	LWD 40×/0,65 (spring) W.D. 3,90 mm	○	○	○	○	○	OBB-A1293	
	LWD 50×/0,70 (spring) W.D. 1,95 mm	○	○	○	○	○	OBB-A1295	
	LWD 80×/0,80 (spring) W.D. 0,85 mm	○	○	○	○	○	OBB-A1297	
Binocular tube	• Siedentopf 30° inclined • Interpupillary distance 50 – 75 mm • Diopter adjustment: One-sided	✓	✓	✓	✓	✓		
Trinocular tube	• Siedentopf 30° inclined • Interpupillary distance 50 – 75 mm • Light distribution 100:0 • Diopter adjustment: One-sided	○	○	○	○	○	OBB-A1447	
Professional dedicated polarising binocular head	To keep the reticular cross in the right-hand eyepiece in the same position, independent of the adjustment of the tube.	○	○	○	○	○	OBB-A1209	
Professional dedicated polarising trinocular head		○	○	○	○	○	OBB-A1210	
Analyser unit with scale	360° rotatable, lockable	✓	✓	✓	✓	✓		
Bertrand lens	Built-in, center-adjustable	✓	✓	✓	✓	✓	OBB-A1121	
λ + ¼ λ Slip	λ Slip and ¼ λ Slip (combination)	✓	✓	✓	✓	✓	OBB-A1316	
Quartz wedge	I – IV Class	✓	✓	✓	✓	✓	OBB-A1321	
Revolving round stage	360° rotatable, center-adjustable, division 1°, Vernier division 6'	✓	✓	✓	✓	✓		
Polarising attached mechanical stage	Polarising attached mechanical stage	○	○	○	○	○	OBB-A1337	
Swing-out condenser	N.A. 0,9/0,13 swing-out achromatic condenser (aperture diaphragm)	✓		✓		✓	OBB-A1107	
Polarising unit with scale (transmitted)	360° rotatable, lockable	✓		✓		✓		
Koehler illumination	6 V/20 W Halogen spare bulb (transmitted)	✓		✓		✓	OBB-A1370	
Reflecting polarising unit replacement bulb	12 V/50 W Halogen		✓	✓	○	○	OBB-A1207	
	12 V/100 W Halogen		○	○	✓	✓	OBB-A1377	
Colour filters for transmitted illumination	Blue	✓		✓		✓	OBB-A1170	
	Green	○		○		○	OBB-A1188	
	Yellow	○		○		○	OBB-A1165	
	Gray	○		○		○	OBB-A1183	
C-Mount	1×	○	○	○	○	○	OBB-A1140	
	0,57× (focus adjustable)	○	○	○	○	○	OBB-A1136	

✓ = Included with delivery

○ = Option

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

Abbreviations

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

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