

### Metallurgical Microscopes KERN OKO-1



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

	Tube	Eyepiece	Objective quality	Objectives	Illumination
<b>KERN</b>					
<b>OKO 178</b>	Trinocular	HWF 10×/ø 22 mm	Infinity Plan	5×/10×/20×/50×	5 W LED (incident + transmitted)

Model outfit		Model KERN	Order number
		<b>OKO 178</b>	
<b>Eyepieces</b> (30 mm)	HWF 10×/∅ 22 mm (adjustable)	✓	OBB-A1491
	HWF 10×/∅ 22 mm (reticule 0,1 mm) (adjustable)	✓	OBB-A1523
<b>Infinity Plan Semi Apochromatic objectives</b> for long working distance	5×/0,15 W.D. 21,0 mm	✓	OBB-A1619
	10×/0,3 W.D. 20,0 mm	✓	OBB-A1620
	20×/0,40 W.D. 15,0 mm	✓	OBB-A1621
	50×/0,75 W.D. 4,25 mm	✓	OBB-A1641
	100×/0,85 (dry) W.D. 3,00 mm	○	OBB-A1623
<b>Infinity Plan objectives</b> for long working distance	80×/0,80 (spring-loaded) W.D. 0,85 mm	○	OBB-A1530
<b>Trinocular tube</b>	<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>	✓	
<b>Mechanical stage</b> 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>	✓	
<b>Reflected illumination unit</b>	Polarising unit (Incl. analyser, polariser and blue filter slide)	✓	
<b>Condenser</b>	Abbe N.A. 1,25 (aperture diaphragm)	✓	OBB-A1380
<b>Koehler illumination</b>	5 W LED spare bulb (transmitted)	✓	OBB-A1589
<b>Illumination polarising unit</b>	5 W LED spare bulb (incident)	✓	OBB-A1470
<b>Polariser</b>	For transmitted illumination	✓	OBB-A1470
<b>Colour filters</b> for transmitted illumination	Blue	✓	OBB-A1170
	Green	○	OBB-A1188
	Yellow	○	OBB-A1165
	Grey	○	OBB-A1183
<b>C-Mount</b>	1×	○	OBB-A1514
	0,75×	○	OBB-A1590
	0,5× (focus adjustable)	○	OBB-A1515

✓ = Included with delivery

○ = Option

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

## 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 $\varnothing$ 23 mm for 10 $\times$ 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 $\varnothing$ 22 mm for 10 $\times$ eyepiece)
<b>N.A.</b>	Numerical Aperture		