



## EDUCATIONAL LINE MET

The compact inverted metallurgical microscope for details with large workpieces

### Features

- The inverted series – KERN OLE and KERN OLF – stand out through their design which is compact, stable and ergonomic.
- The strong, continuously dimmable 3 W LED reflected illumination guarantees a permanent optimum illumination of the materials being tested.
- A mechanical stage with additional plate (opening  $\varnothing$  10 mm and  $\varnothing$  20 mm) is included with delivery as standard. The coarse and fine focusing knob on both sides guarantees optimal adjustment and focusing.
- Colour filters (blue, green and grey) are included with delivery.
- A large selection of eyepieces, stage inserts and objectives for a larger working distance 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 charts.

### Scope of application

- Training, metallurgy, material testing, quality assurance

### Applications/Samples

- Inverted opaque or translucent samples, workpieces (surfaces, fold lines, coatings), inverted viewing

### Technical data

- Finite optical system
- Quadplex nosepiece
- Tube 45° inclined
- Diopter adjustment: One-sided (for binocular models)
- Overall dimensions W×D×H 340×190×330 mm
- Net weight basic configuration approx. 7 kg

#### STANDARD



#### OPTION



































Model	Standard configuration					
	Tube	Eyepiece	Objective quality	Objectives	Illumination	
<b>KERN</b>						
<b>OLE 161</b>	Monocular	WF 10×/ϕ 18 mm	Plan	10×/20×/40×	3 W LED (incident)	
<b>OLF 162</b>	Binocular	WF 10×/ϕ 18 mm	Plan		3 W LED (incident)	

Model outfit		Model KERN		Order number	
		OLE 161	OLF 162		
<b>Eyepieces</b> (23,2 mm)	WF 10×/ø 18 mm	✓	✓✓	OBB-A1347	
	WF 12,5×/ø 14 mm	○	○○	OBB-A1353	
	WF 16×/ø 13 mm	○	○○	OBB-A1354	
	WF 5×/ø 20 mm	○	○○	OBB-A1355	
	WF 10×/ø 18 mm (reticule 0,1 mm) (non-adjustable)	○	○○	OBB-A1349	
<b>Plan achromatic objectives</b>	Plan 10×/0,25	✓	✓	OBB-A1246	
	Plan 20×/0,35 (spring)	✓	✓	OBB-A1253	
	Plan 40×/0,65 (spring)	✓	✓	OBB-A1261	
	Plan 100×/1,25 (spring) (oil)	○	○	OBB-A1242	
	Plan 4×/0,10	○	○	OBB-A1265	
<b>Plan achromatic objectives</b> for long working distance	PL L 40×/0,60 W.D. 3,64 mm	○	○	OBB-A1262	
	PL L 50×/0,70 W.D. 3,01 mm	○	○	OBB-A1267	
	PL L 80×/0,80 (spring) W.D. 1,08 mm	○	○	OBB-A1272	
<b>Monocular tube</b>	45° inclined	✓		OBB-A1228	
<b>Binocular tube</b>	• 45° inclined • Diopter adjustment: One-sided		✓	OBB-A1128	
<b>Mechanical stage</b>	• Stage size W×D 180×180 mm • Travel 50×40 mm	✓	✓		
<b>Extra stage plate</b>	1 (opening ø 10 mm)	✓	✓	OBB-A1322	
	2 (opening ø 20 mm)	✓	✓	OBB-A1323	
	3 (opening ø 40 mm)	○	○	OBB-A1324	
<b>Illumination</b>	3 W LED illumination system (incident)	✓	✓		
<b>Colour filters</b> for transmitted illumination	Blue	✓	✓	OBB-A1174	
	Green	✓	✓	OBB-A1190	
	Gray	✓	✓	OBB-A1184	

✓ = Included with delivery

○ = Option

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

## 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 Ø 23 mm for 10x 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 Ø 22 mm for 10x eyepiece)

## Your KERN specialist dealer: