

PROFESSIONAL MEASURING



# DIGITAL REFRACTOMETERS TYPE: DESKTOP

23

# KERN Pictograms



**360° rotatable microscope head**



**Monocular Microscope**  
For the inspection with one eye



**Binocular Microscope**  
For the inspection with both eyes



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



**Abbe Condenser**  
With high numerical aperture for the concentration and the focusing of light



**Halogen illumination**  
For pictures bright and rich in contrast



**LED illumination**  
Cold, energy-saving and especially long-life illumination



**Incident illumination**  
For non-transparent objects



**Transmitting illumination**  
For transparent objects



**Fluorescence illumination**  
For stereomicroscopes



**Fluorescence illumination for compound microscopes**  
With 100 W mercury lamp and filter



**Fluorescence illumination for compound microscopes**  
With 3 W LED illumination and filter



**Phase contrast unit**  
For a higher contrast



**Darkfield condenser/unit**  
For a higher contrast due to indirect illumination



**Polarising unit**  
To polarise the light



**Infinity system**  
Infinity corrected optical system



**Zoom magnification**  
For stereomicroscopes



**Auto-focus**  
For automatic control of the focus level



**Parallel optical system**  
For stereomicroscopes, enables fatigue-proof working



**Integrated scale**  
In the eyepiece



**SD card**  
For data storage



**USB 2.0 digital camera**  
For direct transmitting of the picture to a PC



**USB 3.0 digital camera**  
For direct transmitting of the picture to a PC



**WLAN data interface:**  
For transmitting of the picture to a mobile display device



**HDMI digital camera**  
For direct transmitting of the picture to a display device



**PC software**  
To transfer the measurements from the device to a PC.



**Automatic temperature compensation**  
For measurements between 10 °C and 30 °C



**Protection against dust and water splashes IPxx:**  
The type of protection is shown in the pictogram cf. DIN EN 60529:2000-09, IEC 60529:1989+A1:1999+A2:2013



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



**Battery operation rechargeable**  
Prepared for a rechargeable battery operation



**Plug-in power supply**  
230V/50Hz in standard version for EU. On request GB, AUS or USA version.



**Integrated power supply unit**  
Integrated in microscope. 230V/50Hz standard EU. More standards e.g. GB, AUS or USA on request.



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

## Abbreviations

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

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

# Why you should choose a KERN microscope now!

For 175 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.

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 2022: die KERN camera software – you will be amazed at how user-friendly and intuitive it is, a high-quality tablet camera as well as a comprehensive range of calibration services for refractometers
- 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 2022 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](http://www.kern-sohn.com)



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**E-mail order**  
[info@kern-sohn.com](mailto:info@kern-sohn.com)



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



**Online shop**  
[www.kern-sohn.com](http://www.kern-sohn.com)



Transport and storage case



Rear view, screw-on battery compartment cover

## Digital refractive index measurement for laboratories and the industry for multi-application ► Laboratory refractometer

### Features

- The models in the KERN ORL range are accurate, universal and maintenance-free digital desktop refractometers
- Other key features are the extra-large measuring range and a high degree of accuracy.
- With their handy design, they are ideal for convenient and rapid everyday use
- The large, easy-to-read multi-function display with integrated temperature display supports the user to reliably determine the measurement.
- The integrated automatic temperature compensation (ATC), avoids the manual conversion of the measurement. This allows a quick and efficient usage of the instrument
- Rapid, user-friendly calibration of the refractometer is possible at any time using standard commercial distilled water.
- Mean value measurement (15 measurements)
- The following accessory-parts are included:
  - Pipette
  - Storage box
  - USB cable
  - Power adapter
  - Screwdriver

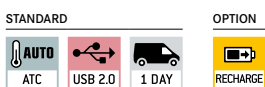
### Technical data

- Measurement temperature: 0 °C – 40 °C
- Overall dimensions W×D×H 180×100×55 mm
- Net weight approx. 365 g (without battery)
- Power supply: USB connection, as an alternative 1 × battery 3.7 V 3000 mA (not included with delivery)
- ATC (Automatic Temperature Compensation)
- Minimum sample volume: 0,3–0,4 ml
- Automatic energy management (AUTO-OFF after 3 Minutes)
- Mean value measurement (15 measurements)

### Accessories

- Rechargeable Battery 3,7 V 3000 mA, KERN ORL-A2007, € 65,-

! Also available with calibration certificate, see page 109!



Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
<b>KERN</b>					
<b>ORL 94BS</b>	Brix Refractive index	0 – 94 % 1,3330 – 1,5290 nD	± 0,1 % ± 0,0002 nD	0,1 % 0,0001 nD	<b>920,-</b>



## Your partner for calibration services, management of test equipment and support

### Features

- Any analogue or digital refractometer will only give correct results if it is checked regularly, i.e. calibrated correctly and adjusted when required. A refractometer or another measuring device is only a reliable measuring and checking tool if it is calibrated and this calibration is documented as part of a quality procedure
- Measuring “correctly” is of elementary significance, as it is not unusual for inaccurate or “wrong” measurements to have expensive economic consequences. Calibration or establishing the accuracy of checking equipment must therefore be carried out by laboratories throughout the world
- In the context of standard requirements for monitoring checking equipment, every company with a Quality Management system is obliged to test and document its measuring equipment at regular intervals
- The refractometer calibration certificate documents the intended measuring functionality and confirms the measuring accuracy of your refractometer to you

### Important

- Refractive index standard traceable to SRM<sup>1</sup> of NIST<sup>2</sup> and PTB<sup>3</sup>
- This service is not possible for the following refractometer models:
  - ORA 6HA
  - ORA 1GG
- Calibration of products from other manufacturers is possible on request

<sup>1</sup>Standard reference material  
<sup>2</sup>National Institute of Standards and Technology  
<sup>3</sup>Physikalisch-Technische Bundesanstalt (German metrology institute)

Model	Description	Price excl. of VAT ex works €
<b>KERN</b> 961-290	Calibration certificate for refractometers on initial calibration	129,-
961-290R	Calibration certificate for refractometers on recalibration	129,-

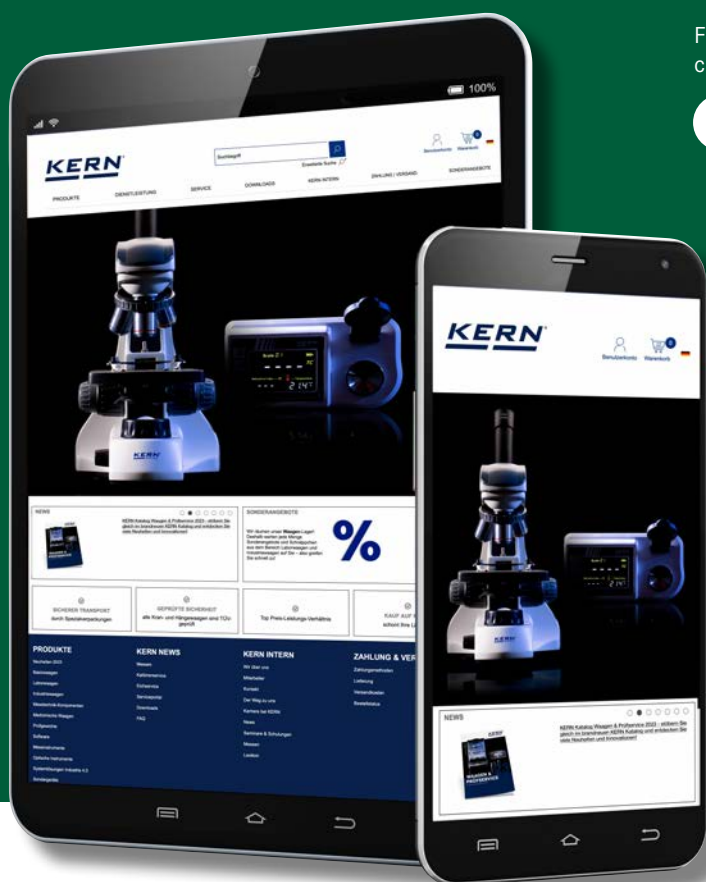
# KERN & SOHN – The wide range of product champion that is situated in the Swabian Alb

KERN & SOHN GmbH  
Balances, Test weights, Microscopes,  
DAkKS calibration laboratory  
Ziegelei 1  
72336 Balingen  
Germany  
Tel. +49 7433 9933-0  
info@kern-sohn.com



Printed in Germany by KERN & SOHN GmbH z-co-en-kp-20231

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