

ABBE REFRACTOMETERS

PROFESSIONAL
MEASURING



2020

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



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 by the pictogram.



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



Battery operation rechargeable
Prepared for a rechargeable battery operation



Mains adapter
230V/50Hz in standard version for EU. On request GB, AUS or USA version.



Power supply
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

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

SLR camera	Single-Lens Reflex camera
SWF	Super Wide Field (Field number at least \varnothing 23 mm for 10× eyepiece)
W.D.	Working Distance
WF	Wide Field (Field number up to \varnothing 22 mm for 10× 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 2020: 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 2020 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



Order hotline
+49 7433 9933-0



E-mail order
info@kern-sohn.com



www.kern-sohn.com
Information on current product availability, product data sheets, user instructions, useful knowledge, technical glossary and much for you to download, practical topic areas, which will guide you to the right product in your industry as well as a microscopes and refractometers search engine.



Service hotline
+49 7433 9933-199



Fax Order
+49 7433 9933-146



Online shop
www.kern-sohn.com



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



! Now also available with calibration certificate, see page 114!

Refractive index measurement for pharmacy, laboratories and industry

Features

- The KERN ORT refractometers are universal analog Abbe refractometers
- The handy and robust design allows the easy, efficient and sustainable use in everyday life
- The integrated scale allows the use in different applications and provides the best possible security to read the measurement results accurately
- The scope of delivery includes:
 - Calibration solution
 - Calibration block
 - Pipette
 - Small screwdriver
 - Cleaning tissue
 - Digital thermometer
- Accessories are available as options

Technical data

- Measurement temperature: 20 °C
- Overall dimensions W×D×H
180×90×240 mm
- Net weight approx. 1950 g

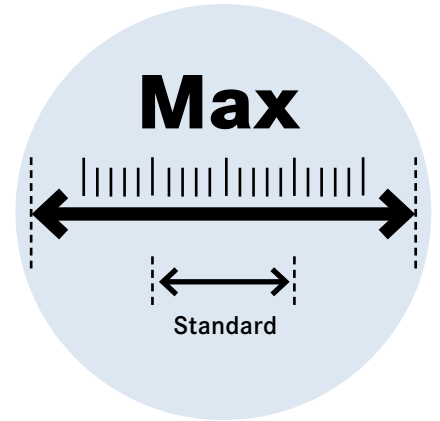
Scope of application: Industry/Pharmacy/Laboratory

The following model is a simple yet highly reliable Abbe refractometer with a digital thermometer. Liquid, solid and pasty samples can be evaluated. This refractometer is robust, accurate and easy to use. Optionally a solide aluminium case for transport and storage is available. It measures the refractive index (nD).

The main scope of applications is:

- Sugar industry: for example cane sugar
- Pharmacy
- Beverage industry
- Food industry
- Chemical industry
- Oil industry/Refinery
- Laboratories
- Training

Model	Scales	Measuring range	Accuracy	Division	Price excl. of VAT ex works €
KERN					
ORT 1RS	Brix Refractive index	0 - 95 % 1,3000 - 1,7000 nD	± 0,1 % ± 0,0002 nD	0,25 % 0,0005 nD	690,-



ORT 1RS

Accessory parts: Abbe refractometer – ORT

Model	Description	Price excl. of VAT ex works €
KERN		
ORA-A1102	Aluminium suitcase Dimension: 310×120×240 mm, weight: 1300 g	80,-
ORA-A2266	Digital thermometer (0 °C/50 °C) (Spare part)	60,-
ORA-A2267	Calibration block for ORT 1RS	40,-
ORA-A1107	Contact liquid – Alpha-Bromonaphthalene (Refractive index: 1,65 nD) Volume: 2,5 ml	25,-
ORA-A3001	Contact liquid – Diiodomethane “Pro” (Refractive index: 1,79 nD) Volume: 2 ml	35,-



Transport and storage case
ORA-A1102



Calibration block
ORA-A2267

Relationship overview – refractometer calibration (Abbe)					
Model refractometer	Calibration value	Calibration liquid	Article number liquid	Calibration block	Article number calibration block
ORT 1RS	engraved on the block (nD value)	Alpha-Bromnaphthalene CAS 90-11-9	ORA-A1107	yes	ORA-A2267



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

Features Important

- 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

- Refractive index standard traceable to SRM¹ of NIST² and PTB³
- This service is not possible for the following refractometer models:
 - ORA 6HA
 - ORA 1GG
- Calibration of products from other manufacturers is possible on request

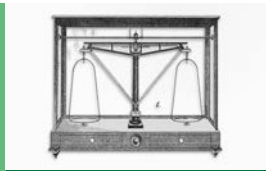
¹Standard reference material
²National Institute of Standards and Technology
³Physikalisch-Technische Bundesanstalt (German metrology institute)

Model	Description	Price excl. of VAT ex works €
KERN		
961-290	Calibration certificate for refractometers on initial calibration	99,-
961-290R	Calibration certificate for refractometers on recalibration	99,-



1769

Ancestor Johann Jakob Sauter built the Hahn inclination scale out of iron, a foundation stone for weighing for the balance industry in Southern Germany



1844

KERN is founded – precision balances are produced



1863

A proud Gottlieb Kern with his staff



1880

Pharmaceutical balance with Aesculap



1923

Inflation – KERN wages are paid with self printed currency



1980

The electronic balance ousts mechanical devices



1994

Accredited DKD laboratory (ISO 17025)



2000

New premises in Balingen



2002

Existing QM system certification in accordance with DIN EN ISO 9001:2000 standards



2007

Approval for the manufacture of medical products (DIN EN 13485 and 93/42/EEC)



2008

Authorisation for initial verification by the manufacturer (2009/23/EC)



2009

Approval for the manufacture and sale of height rods (DIN EN 13485 and 93/42/EEC)



2012

Verification point for non-automatic balances and test weights.

New customer portal www.kern-sohn.com goes live



2014

Expansion of the product range to include optical instruments (microscopes and refractometers)



2015

Inauguration of Ziegelei 2.0 with computer-controlled high-bay warehouse



2017

Come with KERN into the digital future: Expansion of the model ranges compatible with Industry 4.0, as well as the related services



2019

Significant anniversary year! 25 years of accredited DKD laboratory 175 years of KERN & SOHN 250 years of balance manufacture in the Sauter family-owned company



2020

Construction of Ziegelei 3.0, extension of administration building