Transport and storage case

Rear view, screw-on battery compartment cover

Digital measurement of refraction index for universal application

Features

- The KERN ORM refractometers are accurate and universal maintenance free digital handheld refractometers
- They are characterized by their easy-using and robustness
- The typical and practical design is suitable for a quick and convenient everyday use
- The large, easy-to-read 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
- The refractometers from the KERN ORM range are protected to international IP65 protection class, against dust and water splashes. After use, you can rinse the refractometer under running water
- Mean value measurements possible
- The follwoing accessory-parts are included:
  - Prism cover lid
  - Pipette
  - Storage box
  - 1 × AAA battery
  - Screwdriver

Technical data

- Measurement temperature: 0 °C – 40 °C
- Overall dimensions W×D×H 121×58×25 mm
- Net weight approx. 289 g
- Power supply: 1 × AAA (1,5 V)
- Lifetime of the battery: approx. 10.000 measurements
- ATC (Automatic Temperature Compensation 0 °C – 40 °C)
- Minimum sample volume: 4 drops
- Automatic energy management (AUTO-OFF after 60 seconds)
- Mean value measurement (15 measurements)

Accessories

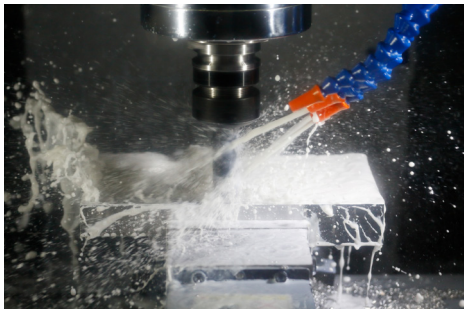
- Calibration liquid

Note: Also available with calibration certificate

STANDARD

AUTO ATC | IP 65 | BATT | 1 DAY

Scope of application: Basic measurements for Brix and refractive index



The following models are particularly suitable for basic measurement where the result is required in Brix or refractive index. They are used to determine the sugar content in food or for monitoring processes in the industry (coolant monitoring, water-based mixtures). Alternatively the display can be switched to show Brix or the refractive index.

The main scope of applications is:
- Industry: Monitoring of lubricants in machines and quality control
- Food industry: Beverages, fruits and sweets
- Agriculture: Determination of the degree of ripeness of fruit for quality control in harvesting
- Restaurants and large-scale catering establishment

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 50BM	Brix Refractive index	0 – 50 % 1,3330 – 1,4200 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD
ORM 1RS	Brix Refractive index	0 – 90 % 1,3330 – 1,5177 nD	± 0,2 % ± 0,0003 nD	0,1 % 0,0001 nD

Scope of application: Sugar

The following models are particularly suitable for direct measurement of different types of sugar. These are used to determine the content of the respective type of sugar in water-based liquids. It is possible to switch between the four different scales.

The main scope of applications is:
- Food industry: Beverages, fruits and sweets
- Agriculture: Determination of the degree of ripeness of fruits for quality control in harvesting, determination of colostrum milk quality
- Restaurants and large-scale catering establishment

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1SU	Fructose	0 – 69 %	± 0,2 %	0,1 %
	Glucose	0 – 60 %	± 0,2 %	0,1 %
	Brix	0 – 90 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,5177 nD	± 0,0003 nD	0,0001 nD
ORM 2SU	Lactose	0 – 17 %	± 0,2 %	0,1 %
	Maltose	0 – 16 %	± 0,2 %	0,1 %
	Dextran	0 – 11 %	± 0,2 %	0,1 %
	Brix	0 – 50 %	± 0,2 %	0,1 %

Scope of application: Honey

The following model is particularly suitable for the measurement of the water content in honey according to the International Honey Commission (IHC2002) and “degrees Baumé” to determine the relative density of liquids. Alternatively the display can be switched to show Brix or the refractive index.

The main scope of applications is:
- Beekeeping
- Honey production

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1HO	Water content	5 – 38 %	± 0,2 %	0,1 %
	Baumé	33 – 48 °Bé	± 0,2 °Bé	0,1 °Bé
	Brix	0 – 90 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,5177 nD	± 0,0003 nD	0,0001 nD

Scope of application: Salt

The following models are particularly suitable to determin the concentration of NaCl (salt) in water and seawater. This is often used for the preparation and for the cooking of sauces, bases for pastries, the production of brines (e.g. for white cheese) and the preparation of seafood and marinades for meat. Alternatively the display can be switched to show Brix or the refractive index.

The main scope of applications is:
- Food industry
- Restaurants, and large-scale catering establishment, canteens
- Fisch farm

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1NA	Salt content (NaCl) %	0 – 28 %	± 0,2 %	0,1 %
	Salt content (NaCl) ‰	0 – 280 ‰	± 2 ‰	1 ‰
	Salt content (specific gravity)	1,000 – 1,220	± 0,002	0,001
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD
ORM 1SW	Salt content seawater	0 – 100 ‰	± 2 ‰	1 ‰
	Chlorine content seawater	0 – 57 ‰	± 2 ‰	1 ‰
	Salt content (specific gravity)	1,000 – 1,070	± 0,002	0,001
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD

Scope of application: Beer/alcohol

The following models are particularly suitable for determining the sugar content of the original wort of beer in its unfermented state. The value can be read straightaway, without having to be converted, using the Original gravity (specific weight) and Degrees Plato scales. In addition, the percent by volume and percent by mass scales can be used to determine the alcohol content of clear spirits.

The main scope of applications is:
- Beer brewers
- Alcohol production

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1AL	Percentage by mass	0 – 72 %	± 1 %	1 %
	Percentage by volume	0 – 80 %	± 1 %	1 %
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD
ORM 1BR	Plato	0 – 31 °P	± 0,3 °P	0,1 °P
	Original gravity (specific weight)	1,000 – 1,130	± 0,002	0,001
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD

Scope of application: Wine

The following models are particularly suitable for the measurement of the sugar content in fruit. It indicates the expected °Alcohol of the fruit. The degree of ripeness of fruit (fruit-sugar) can also be determined, such as e.g. grapes. Alternatively the display can be switched to show Brix.

The main scope of applications is:
- Agriculture: Wine-growing (viticulture) and fruit-growing
- Wine-production
- Must and alcohol production

°Oe = Degree Oechsle, °KMW = Klosterneuburger Most Waage

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1WN	Oechsle	0 – 150 °Oe	± 2 °Oe	1 °Oe
	Percentage by volume	0 – 22 %	± 0,2 %	0,1 %
	KMW (Babo)	0 – 25 °KMW	± 0,2 °KMW	0,1 °KMW
	Brix	0 – 50 %	± 0,2 %	0,1 %
ORM 2WN	Oechsle France	0 – 230 °Oe	± 2 °Oe	1 °Oe
	Percentage by volume	0 – 22 %	± 0,2 %	0,1 %
	KMW (Babo)	0 – 25 °KMW	± 0,2 °KMW	0,1 °KMW
	Brix	0 – 50 %	± 0,2 %	0,1 %

Scope of application: Coffee

The following models are particularly suitable for measuring the dissolved solids (TDS) in coffee to determine or compare the strength of a cup of coffee. For roasting plants, the TDS% value is used to determine the solubility level of a roast and to control the quality. Alternatively the display can be switched to show Brix or the refractive index.

The main scope of applications is:
- Coffee industry
- Coffee roasting plants
- Coffee competitions

Modell	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1CO	Coffee TDS 1	0 – 25 %	± 0,2 %	0,1 %
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD
ORM 2CO	Coffee TDS 2	0,00– 25,00 %	± 0,2 %	0,01 %
	Brix	0,00 – 30,00 %	± 0,2 %	0,01 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD

Scope of application: Urine

The following models are particularly suitable for the measurement of the specific gravity (sg) in urine, the quantitiy of serum (serumproteine) in urine (doping control among athletes), and the refractive index.

The main scope of applications is:
- Hospitals
- Doctor’s surgeries/Physicians
- Medical training institutions
- Nursing homes
- Sports medicine (doping test)
- Veterinary

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1UN	Urine (spec. gravity)	1,000 – 1,050	± 0,002	0,001
	Serum protein	0 – 12 g/100 ml	± 0,2 g/100 ml	0,1 g/100 ml
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD
ORM 2UN	Urine (s. g. dog)	1,000 – 1,060	± 0,002	0,001
	Urine (s. g. cat)	1,000 – 1,060	± 0,002	0,001
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD

Scope of application: Industry/Automotive

The following models are particularly suitable for the measurement and determination of AdBlue®, glycol concentration ethylene (EG) and propylene (PG), battery fluid (BF), urea, the freezing point of windscreen wash water (CW). Furthermore these models are suitable for the measurement of thermal exchange systems. Alternatively the display can be switched to show Brix or the refractive index.

The main scope of applications is:
- Automotive industry: Car-workshops and producers
- Chemical industry
- Solar industry: Antifreeze monitoring

Model	Scales	Measuring range	Accuracy	Division
KERN				
ORM 1CA	Wash water	(-60) – 0 °C	± 0,5 °C	0,1 °C
	AdBlue®	0 – 51 %	± 0,2 %	0,1 %
	Battery fluid	1,000 – 1,500 kg/l	± 0,005 kg/l	0,001 kg/l
	Brix	0 – 50 %	± 0,2 %	0,1 %
	Refractive index	1,3330 – 1,4200 nD	± 0,0003 nD	0,0001 nD
ORM 2CA	Ethylene glycol (%)	0 – 100 %	± 0,5 %	0,1 %
	Ethylene glycol (° C)	(-50) – 0 °C	± 0,5 °C	0,1 °C
	Propylene glycol (%)	0 – 100 %	± 0,5 %	0,1 %
	Propylene glycol (°C)	(-60) – 0 °C	± 0,5 °C	0,1 °C
	Brix	0 – 90 %	± 0,2 %	0,1 %