iHR Series

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Handheld Refractometer

- iCOE offers a wide range of hand refractometers to ensure incredibly rapid and convenient measurement of concentration in liquid and semi-solid samples, combining accurate performance with excellent repeatability.

Refractometers - Handheld Series

iCOE offers a wide range of hand refractometers to ensure incredibly rapid and convenient measurement of concentration in liquid and semi-solid samples, combining accurate performance with excellent repeatability.

The refractive index of a substance is related to its specific density; a refractometer is used to measure the purity or the concentration of a sample when mixed.

Refractometers are suitable for a wide range of applications, which includes the control of blend ratios in light industrial applications (such as glycols, battery acid, heat exchange fluids, coolants, hydraulic oils and quenchants) and represents the ideal solution for users working in the food industry (fruit, beverages, confectionery, jam, honey and other sugar based products).

Automatic Temperature Compensation

ATC

ATC - Automatic Temperature Compensation

No need to worry about temperature change during your measurement.

- **» Value for money solution**
- **» Easy operation**
- **» Built-in LED illumination**
- **» Brix or scale specific (including ATC)**
- **» Sturdy construction with rubber handgrip**

Fruit

Fruit juice

Veterinary industry

Battery fluids

Honey

Confectionery/Jam

Wine

Clinical industry

Salinity

Grape must

alcohol

Coolants/Antifreeze

Food industry

Gemmology

iHR Series Handheld Refractometers

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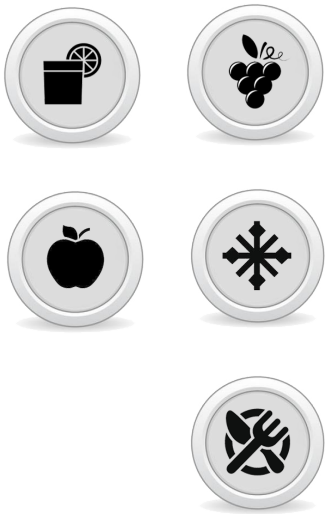
Scope of application: Sugar

The following models are particularly suitable for the measurement of the “BRIX” value. They are used to determine the sugar content in food, especially in fruit, vegetables, juice and soft drinks. In the same ideal way these refractometers serve for monitoring processes in the industry (coolant monitoring, oils, lubricants and fats).



The main scope of applications is:

· Industry: Monitoring of lubricants for process and quality control
· Food industry: Beverages, fruits and sweets
· Agriculture: Determination of the degree of ripeness of fruits for quality control in harvesting
· Restaurants and large-scale catering establishment

Model	Scales	Measuring Range	Division	ATC
iHR B10	Brix	0-10%	0.10%	/
iHR B10A	Brix	0-10%	0.10%	with ATC
iHR B18	Brix	0-18%	0.10%	/
iHR B20	Brix	0-20%	0.10%	/
iHR B20A	Brix	0-20%	0.10%	with ATC
iHR B32	Brix	0-32%	0.20%	/
iHR B32A	Brix	0-32%	0.20%	with ATC
iHR B62	Brix	28-62%	0.20%	/
iHR B62A	Brix	28-62%	0.20%	with ATC
iHR B82	Brix	45-82%	0.50%	/
iHR B82A	Brix	45-82%	0.50%	with ATC
iHR B80	Brix	0-80%	0.50%	/
iHR B90	Brix	0-90%	0.20%	/

Scope of application: Honey

The following models are particularly suitable for the measurement of the “BRIX” value, as well as the water content in honey and “degrees Baumé” to determine the relative density of liquids.

The main scope of applications is:

· Beekeeping · Honey production

Model	Scales	Measuring Range	Division	ATC
iHR H90	Brix Baume Water content	58-90% 38-43°Be 12-27%	0.5% 0.5°Be 1%	/
iHR H90A	Brix Baume Water content	58-90% 38-43°Be 12-27%	0.5% 0.5°Be 1%	with ATC
iHR H25	water content	13-25%	0.10%	/
iHR H25	water content	13-25%	0.10%	with ATC

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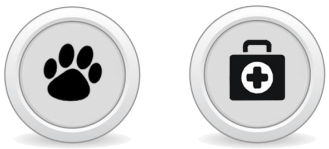
Scope of application: Salt

The following models are particularly suitable for the measurement and concentration control of the mass fraction of natrium chloride in water as well as of the content of NaCl (salt) in water. This is often used in the preparation and 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.

The following models are particularly suitable for the measurement of the content of sugar in fruits. 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.
The main scope of applications is:
· Food industry
· Restaurants and large-scale catering establishment
· Aquaristic: Fishkeepers/Fishfarmers in sea and sweetwater

Model	Scales	Measuring Range	Division	ATC
iHR S1	Salinity Specific gravity	0-100‰ 1.000-1.070sg	1‰ 0.001	/
iHR S1A	Salinity Specific gravity	0-100‰ 1.000-1.070sg	1‰ 0.001	with ATC
iHR S2	Salinity (NaCl)	0-28%	0.20%	/
iHR S2A	Salinity (NaCl)	0-28%	0.20%	with ATC
iHR S3	Salinity (NaCl) Brix	0-28% 0-32%	0.2% 0.2%	/
iHR S3A	Salinity (NaCl) Brix	0-28% 0-32%	0.2% 0.2%	with ATC

Scope of application: Clinical Protein, 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	Division	ATC
iHR P2	Serum protein Urine (spec. gravity) Refractive index	0 – 12 g/dl 1.000 – 1.050 sgU 1.3330 – 1.3600 nD	0.2 g/dl 0.005 sgU 0.0005 nD	/
iHR P2A	Serum protein Urine (spec. gravity) Refractive index	0 – 12 g/dl 1.000 – 1.050 sgU 1.3330 – 1.3600 nD	0.2 g/dl 0.005 sgU 0.0005 nD	with ATC
iHR P5	Serum protein Urine (s.g. dog) Urine (s.g. cat)	2 – 14 g/dl 1.000 – 1.060 sgU 1.3330 – 1.060 sgU	0.2 g/dl 0.002 sgU 0.0005 nD	/
iHR P5A	Serum protein Urine (s.g. dog) Urine (s.g. cat)	2 – 14 g/dl 1.000 – 1.060 sgU 1.3330 – 1.060 sgU	0.2 g/dl 0.002 sgU 0.0005 nD	with ATC

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Scope of application: Wine, Alcohol

The following models are particularly suitable for the measurement of the content of sugar in fruits. 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.

The main scope of applications is:

· Agriculture: Wine-growing and fruit-growing

· Wine-production

· Must and alcohol production

°Oe = Degree Oechsle, °KMW = Klosterneuburger Must balance

Model	Scales	Measuring Range	Division	ATC
iHR W4	Oechsle KMW (Babo) Brix	0 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0.2 °KMW 0.2 %	/
iHR W4A	Oechsle KMW (Babo) Brix	0 – 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0.2 °KMW 0.2 %	with ATC
iHR W5	Oechsle Brix	30 – 140 °Oe 0 – 32 %	1 °Oe 0.2 %	/
iHR W5A	Oechsle Brix	30 – 140 °Oe 0 – 32 %	1 °Oe 0.2 %	with ATC
iHR W6	Oechsle Brix	0– 140 °Oe 0 – 32 %	1 °Oe 0.2 %	/
iHR W6A	Oechsle Brix	0 – 140 °Oe 0 – 32 %	1 °Oe 0.2 %	with ATC
iHR W7	Oechsle KMW (Babo) Brix	0 – 190 °Oe 0 – 40 °KMW 0 – 44 %	2 °Oe 0.5 °KMW 0.5 %	/
iHR W7A	Oechsle KMW (Babo) Brix	0 – 190 °Oe 0 – 40 °KMW 0 – 44 %	2 °Oe 0.5 °KMW 0.5 %	with ATC
iHR W8	Oechsle KMW (Babo) Brix	30– 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0.2 °KMW 0.2 %	/
iHR W8A	Oechsle KMW (Babo) Brix	30– 140 °Oe 0 – 25 °KMW 0 – 32 %	1 °Oe 0.2 °KMW 0.2 %	with ATC
iHR W9	Percentage by volume	0-80% (v/v)	1% (v/v)	/
iHR W10	Percentage by volume Percentage by volume	0 – 50 % (v/v) 50 – 80 % (v/v)	1 % (v/v) 2,5 % (v/v)	/
iHR W11	Percentage by mass Percentage by mass	0 – 50 % (w/w) 50 – 80 % (w/w)	1 % (w/w) 2,5 % (w/w)	/
iHR-W1	Alcohol	0-25%	0.20%	/
iHR-W1A	Alcohol	0-25%	0.20%	with ATC
iHR-W2	Alcohol Baume	0-25% 0-20be°	0.2% 0.2be°	/
iHR-W2A	Alcohol Baume	0-25% 0-20be°	0.2% 0.2be°	with ATC
iHR-W3	Alcohol Baume	0-25% 0-40%	0.2% 0.2%	/
iHR-W3A	Alcohol Baume	0-25% 0-40%	0.2% 0.2%	with ATC

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 fountain solution (CW). Furthermore these models are suitable for the measurement of thermal exchange systems.

The main scope of applications is:
· Automotive industry: Car-workshops and producers
· Chemical industry
· Solar industry: Antifreeze monitoring
· Geothermal industry: Brine-concentration-measurement for ground heat
· Forestry/Lumbermen

Model	Scales	Measuring Range	Division	ATC
iHR A1	Ethylene Glycol Propylene Glycol Battery	-60° F-32° F -50° F-32° F 1.15-1.30sg	10° F 10° F 0.01sg	/
iHR A1A	Ethylene Glycol Propylene Glycol Battery	-60° F-32° F -50° F-32° F 1.15-1.30sg	10° F 10° F 0.01sg	with ATC
iHR A2	Ethylene Glycol Propylene Glycol Battery	-50° C-0° C -50° C-0° C 1.15-1.30sg	10° C 5° C 0.01sg	/
iHR A2A	Ethylene Glycol Propylene Glycol Battery	-50° C-0° C -50° C-0° C 1.15-1.30sg	10° C 5° C 0.01sg	with ATC
iHR A3	Ethylene Glycol Propylene Glycol Battery CW	-50° C-0° C -50° C-0° C 1.15-1.30sg -40° C-0° C	5° C 5° C 0.01sg 5° C	/
iHR A3A	Ethylene Glycol Propylene Glycol Battery CW	-50° C-0° C -50° C-0° C 1.15-1.30sg -40° C-0° C	5° C 5° C 0.01sg 5° C	with ATC
iHR A4	Ethylene Glycol Propylene Glycol Battery CW	-50° C-0° C -50° C-0° C 1.100-1.400sg -40° C-0° C	1° C 1° C 0.01sg 5° C	/
iHR A4A	Ethylene Glycol Propylene Glycol Battery CW	-50° C-0° C -50° C-0° C 1.100-1.400sg -40° C-0° C	1° C 1° C 0.01sg 5° C	with ATC
iHR A5	Ethylene Glycol Propylene Glycol Battery	-60° C-0° C -50° C-0° C 1.100-1.400sg	5° C 5° C 0.01sg	/
iHR A5A	Ethylene Glycol Propylene Glycol Battery	-60° C-0° C -50° C-0° C 1.100-1.400sg	5° C 5° C 0.01sg	with ATC
iHR A6	Ethylene Glycol Propylene Glycol Battery	-84° F-32° F -60° F-32° F 1.100-1.400sg	5° F 5° F 0.01sg	/
iHR A6A	Ethylene Glycol Propylene Glycol Battery	-84° F-32° F -60° F-32° F 1.100-1.400sg	5° F 5° F 0.01sg	with ATC
iHR A7	Ethylene Glycol Propylene Glycol Battery	-70° C-32° C -60° C-0° C 1.100-1.400sg	5° C 5° C 0.01sg	/
iHR A7A	Ethylene Glycol Propylene Glycol Battery	-70° C-32° C -60° C-0° C 1.100-1.400sg	5° C 5° C 0.01sg	with ATC
iHR A8	Battery Antifreeze & Coolant Freezing point	1.000-1.400sg 0%-100% -60° C-0° C	0.01sg 5% 5° C	/
iHR A8A	Battery Antifreeze & Coolant Freezing point	1.000-1.400sg 0%-100% -60° C-0° C	0.01sg 5% 5° C	with ATC

Model	Scales	Measuring Range	Division	ATC
iHR U1	Urea	0-40%	0.20%	/
iHR U1	Urea	0-40%	0.20%	with ATC
iHR U2	Urea Ethylene Glycol Propylene Glycol	0-40% -60° F-32° F -50° F-32° F	0.2% 10° F 10° F	/
iHR U2A	Urea Ethylene Glycol Propylene Glycol	0-40% -60° F-32° F -50° F-32° F	0.2% 10° F 10° F	with ATC
iHR U3	Urea Ethylene Glycol Propylene Glycol CW	0-40% -50° C-0° C -50° C-0° C -40° C-0° C	0.2% 1° C 1° C 5° C	/
iHR U3A	Urea Ethylene Glycol Propylene Glycol CW	0-40% -50° C-0° C -50° C-0° C -40° C-0° C	0.2% 1° C 1° C 5° C	with ATC
iHR U4	Urea Ethylene Glycol Propylene Glycol CW Battery fiuid	30-35% -50° C-0° C -50° C-0° C -40° C-0° C 1.100-1.400sg	0.2% 1° C 1° C 5° C 0.01sg	/
iHR U4A	Urea Ethylene Glycol Propylene Glycol CW Battery fiuid	30-35% -50° C-0° C -50° C-0° C -40° C-0° C 1.100-1.400sg	0.2% 1° C 1° C 5° C 0.01sg	with ATC

Scope of application: Expert applications

The following models have a special large measuring range for the refractive index and large divided scales for the measurement and clear reading of Brix values.

The main scope of applications is:
· Universal application, especially when extra large measuring ranges are required

Model	Scales	Measuring Range	Division	ATC
iHR E80	Brix	0-50% 50-80%	1% 0.3%	/
iHR E90	Brix	0-42% 42-71% 71-90%	0.5% 0.5% 0.5%	/
iHR E2	Refractive index	1.333 – 1.380 nD	0.001 nD	/
iHR E2A	Refractive index	1.333 – 1.380 nD	0.001 nD	with ATC
iHR E4	Refractive index	1.440 – 1.520 nD	0.001 nD	/
iHR E4A	Refractive index	1.440 – 1.520 nD	0.001 nD	with ATC
iHR E5	Refractive index	1.33 – 1.40 nD	0.01 nD	/
iHR E5A	Refractive index	1.33 – 1.40 nD	0.01 nD	with ATC

Scope of application: Gemmology/Jewellery

The Gem models have a special refracting-index range for jewellery. For this refractometer there is a nice leather bag in the scope of delivery included.

The main scope of applications is:
· Jewellers
· Training/Education
· Jewellery industry

Model	Scales	Measuring Range	Division	ATC
iHR G1	Refractive index	1.30-1.81 nD	0.01 nD	/