

Refractometers RE

Handheld

Brix Refractometers

Precision accuracy ensures process and quality control across the entire Brix range!

Use these Brix refractometers to measure concentration of fruits, beverages, and canned goods; total solid content of syrups, vinegar, and sauces; or check the quality of vegetable, fruit, and grass tissues. Refractometers can also be used for chemical, agricultural, manufacturing process control, quality control, preshipment, and other applications.

Brix Refractometers feature a screw potentiometer for calibration and easy-to-read numbers on internal scale for excellent resolution. Models 02940-27 and 02940-29 have a magnified scale so you can read low-concentration solution values easily.

Models 02941-85 and 02941-87 provide automatic temperature compensation (ATC)—perfect for applications where the temperatures of your samples vary. Refractometers are made of polybutylene terephthalate (PBT) thermoplastic. Include rubber-insulated grip to protect samples from heat and a hood to keep out excess light.

Three-Range Brix Refractometer is ideal for measuring achromatic samples over a wide range of sugar concentrations. This refractometer incorporates a three-stage switching knob, a color-adjustment knob, and a temperature-correction thermometer to ensure accurate readings.



ISO 9001:2000
SUPPLIER CERTIFIED

Specifications & Ordering Information

Catalog number	Range	Resolution	Accuracy	ATC	Price
Brix refractometers					
KH-02941-89	0 to 32% Brix	±0.2% Brix	±0.2% Brix	No	
KH-02940-21	28 to 62% Brix	±0.2% Brix	±0.2% Brix		
KH-02940-23	45 to 82% Brix	±0.2% Brix	±0.2% Brix		
KH-02940-25	58 to 90% Brix	±0.2% Brix	±0.2% Brix	No	
KH-02940-27	0 to 10% Brix	±0.1% Brix	±0.1% Brix		
KH-02940-29	0 to 20% Brix	±0.1% Brix	±0.1% Brix		
KH-02941-85	0.0 to 32.0% Brix	±0.2% Brix	±0.2% Brix	50 to 86°F (10 to 30°C); IP65 rated	
KH-02941-87	0.0 to 32.0% Brix	±0.2% Brix	±0.2% Brix	50 to 86°F (10 to 30°C)	
Three-range brix refractometer					
KH-02940-32	0 to 90% Brix	0.2% Brix	±0.2% Brix	No	

Reichert High-Precision Brix Refractometers

Units feature automatic temperature compensation—no correction tables or temperature measurement required

- Rugged, chemical-resistant housing
- Completely sealed—no condensation or dirt on lenses

These refractometers offer exceptional optical design and improved image resolution with high contrast for easy viewing of scales. All reflection coated glass optical components, including a new 10x focusable eyepiece, have been developed to improve illumination and shadowline contrast. Measure concentration of fruits, beverages, and canned goods; total solid content of syrups, vinegar, and sauces; or check the quality of vegetable, fruit, and grass tissues. **What's included:** durable plastic carrying case, sample pipettes, and calibration adjustment wrench.

Specifications & Ordering Information

Catalog number	Range	Resolution	Accuracy	ATC	Price
KH-81007-02	0 to 15% Brix	0.1% Brix	±0.1% Brix	60 to 100°F (16 to 38°C)	
KH-81007-04	0 to 35% Brix	0.2% Brix			
KH-81007-06	35 to 65% Brix	0.2% Brix			
KH-81007-08	65 to 90% Brix	0.2% Brix			

Handheld Wine Refractometers

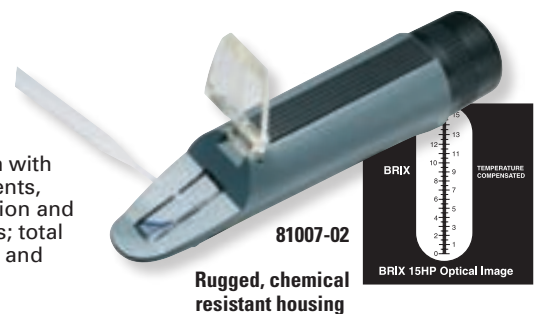
Measure the alcohol content of wine before and during fermentation

These handheld refractometers are essential for wine producers and grape must buyers. Easy to carry and use—ideal for on-site readings. Scales clearly show alcohol concentration in Titre Alcometrique (T.A.). Refractometer 02940-65 features automatic temperature compensation (ATC)—no need for temperature correction tables!

Specifications & Ordering Information

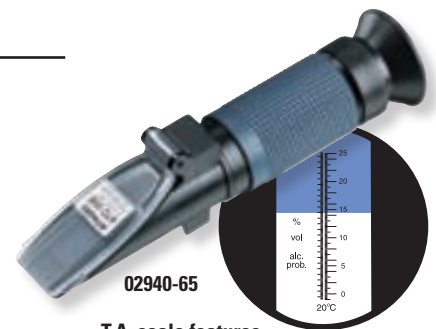
Catalog number	Range	Resolution	ATC	Price
KH-02940-67	0 to 25% T.A.	0.1%	No	
KH-02940-65			50 to 86°F (10 to 30°C)	

ISO 9001:2000
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81007-02

Rugged, chemical
resistant housing



02940-65

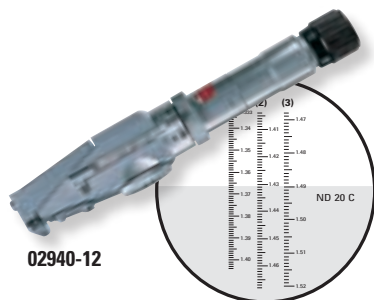
T.A. scale features
0.1% resolution

RE Refractometers

Handheld



02940-41



02940-12

More info

Salt refractometers measure salt concentration of brine in salted foods, or salt concentration in aquariums or commercial fisheries.

Refractive index refractometers measure RI of stock solutions, dilutions, oils, and petrochemical products; or survey oil slicks and spills.

Salt and Refractive Index Refractometers

Units provide high precision accurate results

Salt Refractometers. Models 02940-41 and -43 feature easy-to-read numbers on internal scale for excellent resolution. These models are made of polybutylene terephthalate (PBT) thermoplastic and include a screw potentiometer for calibration and a rubber-insulated grip.

Salt/Specific Gravity Refractometer measures salt in parts per thousand and specific gravity (1.000 to 1.070) of seawater. Made of polybutylene terephthalate (PBT) thermoplastic.

Refractive Index Refractometers. Model 02940-11 features a rubber-insulated grip. Model 02940-12 has three switch-selectable ranges for high readability over entire range.

Salt/RI Refractometer provides ATC and is ideal for ASTM Standard Practice D4542. Magnified scales let you read measurements clearly. Features shock-resistant housing.

Specifications & Ordering Information

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Catalog number	Range	Resolution	Accuracy	ATC	Price
Salt refractometers					
KH-02940-41	0 to 10% salinity	0.1% salinity	±0.1% salinity	No	
KH-02940-43	0 to 28% salinity	0.2% salinity	±0.2% salinity		
Salt/specific gravity refractometer					
KH-02940-45	0 to 100 ppt salinity	1 ppt	±1 ppt	No	
	1.000 to 1.070 sp gr	0.001 sp gr	±0.001 sp gr		
Refractive index refractometers					
KH-02940-11	1.435 to 1.520	0.001	±0.001	No	
KH-02940-12	1.333 to 1.520				
Salt/Refractive index refractometer					
KH-81000-10	0 to 160 ppt	2 ppt	±0.3 ppt	60 to 100°F (16 to 38°C)	
	1.3330 to 1.3730	0.0002	±0.0001		

Industrial Fluid and Coolant/Battery Acid Refractometers

Monitor quality of industrial fluids and coolants with ease

Industrial Fluid Refractometers measure concentration of water-soluble industrial fluids—ideal for quality control or testing water-soluble coolants and acid baths. Both models feature automatic temperature compensation (ATC). An arbitrary scale range lets you determine concentration ratios.

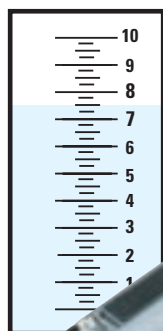
Refractometers feature a rugged die-cast housing with an impact-resistant vinyl cover. Units include a plastic dipstick that conveniently slides into housing for storage; model 81000-20 also comes with a carrying case and six plastic pipettes.

Coolant/Battery Acid Refractometers feature two coolant temperature scales: ethylene glycol and propylene glycol. Determine percent concentration from the freezing point reading with chart (included with model 02940-16). Measure battery acid concentration on a specific gravity scale; shows recharge, fair, or good status. Models 81000-00 and -05 with ATC are ideal for ASTM Standard Practice D 3321.

Models 81000-00 and -05 include a dipstick and flexible sampling pump that store conveniently in the shock-resistant polycarbonate housing. Model 02940-16 is made of polybutylene terephthalate (PBT) thermoplastic. The rubber-insulated grip protects samples from heat; hood eliminates excess light.

Specifications & Ordering Information

Catalog number	Range	Resolution	Accuracy	ATC	Price
Reichert® industrial fluid refractometers					
KH-81000-20	0 to 10 scale (1.3330 to 1.3478 RI)*	0.2	±0.25	60 to 100°F (15 to 38°C)	
KH-81000-24	0 to 30 scale (1.3330 to 1.3860 RI)*	0.5			
Reichert® coolant/battery acid refractometers					
KH-81000-00	Ethylene glycol: -60 to 32°F	5°F	±1.0°F	0 to 104°F (-18 to 40°C)	
	Propylene glycol: -60 to 32°F	5°F			
	Battery acid: 1.100 to 1.400	0.01			
KH-81000-05	Ethylene glycol: -48 to 0°C	3°C	±0.55°F	0 to 104°F (-18 to 40°C)	
	Propylene glycol: -48 to 0°C	3°C			
	Battery acid: 1.100 to 1.400	0.01			
ATAGO® coolant/battery acid refractometer					
KH-02940-16	Ethylene glycol: -60 to 32°F	10°F	±2.5°F	—	
	Propylene glycol: -50 to 32°F	10°F			
	Battery acid: 1.100 to 1.400	0.01			



81000-20



02940-16

Low-Cost Brix and Salt Refractometers

Durable units provide quick and easy measurements

Use these economical refractometers to take quick and easy measurements. Refractometers feature adjustable focus and a zero adjustment screw for calibration. Each refractometer is calibrated and adjusted to read at 68°F (20°C). Models with automatic temperature compensation (ATC) are ideal for applications where the temperatures of your samples vary.

Refractometers are made of corrosion-resistant brass and have rubber-insulated grips. Include hard case, calibration screwdriver, and instructions.

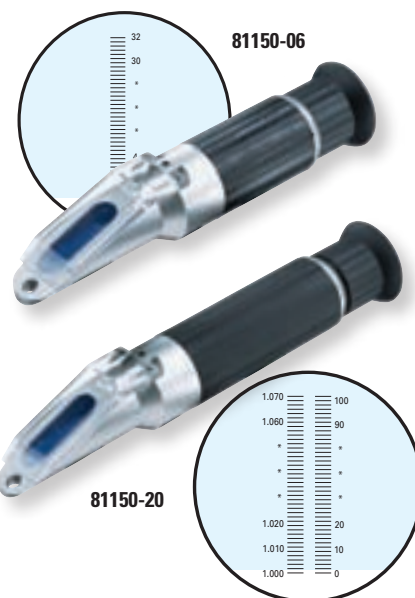
Brix Refractometers measure soluble solid concentration of sugars, salts, proteins, and more in foods and liquids—ideal for quality control and R & D applications. Use to measure percent Brix of juices, beverages, and other sugar-based liquids.

Salt Refractometers measure salt content in parts per thousand (ppt) and specific gravity or percent salinity, depending on model. Use to measure salt concentration of water or brine.

Specifications & Ordering Information

Catalog number	Range	Resolution	Accuracy	ATC	Price
Brix refractometers					
KH-81150-02	0 to 10% Brix	0.1% Brix	±0.1% Brix	50 to 86°F (10 to 30°C)	
KH-81150-04	0 to 18% Brix	0.2% Brix	±0.15% Brix	No	
KH-81150-06	0 to 32% Brix	0.2% Brix	±0.2% Brix	No	
KH-81150-08	0 to 32% Brix	0.2% Brix	±0.2% Brix	50 to 86°F (10 to 30°C)	
KH-81150-10	28 to 62% Brix	0.2% Brix	±0.2% Brix	No	
KH-81150-12	45 to 82% Brix	0.5% Brix	±0.3% Brix	No	
KH-81150-14	58 to 90% Brix	1.0% Brix	±0.5% Brix	No	
Salt refractometers					
KH-81150-20	0 to 100 ppt salinity; 1.000 to 1.070 SGU*	1.0 ppt; 0.001 SGU*	±1.0 ppt; ±0.001 SGU*	50 to 86°F (10 to 30°C)	
KH-81150-22	0 to 28% salinity	0.2%	±0.2%	No	

*SGU = specific gravity units



Digital Laboratory Refractometers

Provide process and quality control with ease

- Four models cover all major lab refractometer applications
- Compact design saves valuable benchtop space

These compact benchtop refractometers are ideal for measuring Brix, salinity, refractive index, and clinical parameters with a full-scale accuracy of ±0.1%. The internal CCD scanner (linear scanned array imaging) provides accurate, reliable measurements. Units are simple to use—place at least 0.4 mL of sample on the surface of the prism, press READ, and the sample results are displayed in seconds. The meter instantly displays the measurement and temperature on the large, easy-to-read LCD.

The sophisticated microprocessor provides automatic calibration, automatic temperature compensation, low-battery indicator, automatic shutoff (after three minutes), and visual hi/low alarms. The durable, water-resistant design protects the electronics in wet environments and makes cleanup easy. All models calibrate to distilled water and feature a simple push-button interface and 5000-reading battery life.

What's included: one 9 V battery, 5 mL of distilled water, one transfer pipet, and a protective case.

Specifications & Ordering Information

Sample volume: 0.4 mL (minimum)	Response time: 3 seconds	Display: 5-digit LCD	Dimensions: 7"W x 2½"H x 4"D			
Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-02941-33	45.0 to 95.0% Brix 1.4098 to 1.5318 RI	0.1% Brix 0.0001 RI	±0.1% Brix ±0.0002 RI	32 to 104°F (0 to 40°C)	One 9 V battery (included)	
KH-02941-34	0.0 to 95% Brix 1.330 to 1.5318 RI	0.1% Brix 0.0001 RI	±0.1% Brix ±0.0002 RI			
KH-02941-35	0.0 to 60.0% Brix 0.0 to 28.0% salinity 0.0 to 280.0 ppm 1.330 to 1.4419 RI	0.1% Brix 0.1% salinity 1 ppm 0.0001 RI	±0.1% Brix ±0.1% salinity ±1 ppm ±0.0002 RI			
KH-02941-36	1.000 to 1.090 urine s.g. 0 to 12 serum protein 1.330 to 1.4098 RI	0.001 urine s.g. 0.1 serum protein 0.0001 RI	±0.0002 urine s.g. ±0.1 serum protein ±0.0002 RI			

[KH-09376-04](#) Replacement batteries; 9 V. Pack of 4



02941-33

RE Refractometers

Handheld / Digital

Clinical Refractometer

Measure serum protein, specific gravity of urine, and refractive index— with one instrument!

Use these clinical refractometers to provide precise and accurate readings for urine specific gravity, serum protein, and refractive index. Units feature a rugged, high impact plastic design that is corrosion resistant. The large easy-to-read display is screen shaded and the rubber eye guard allows you to comfortably take your measurements. Read your measurements in seconds after placing only a few drops of sample on the prism.

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Specifications & Ordering Information

Catalog number	Application	Range	Resolution	Accuracy	ATC	Price
KH-02940-01	Urine S.G	1.000 to 1.060	0.001 usg	±0.001	No	
	Serum protein	0.0 to 12.0 g	0.2 g	±0.2 g		
	Refractive index	nD 1.3330 to 1.3660	0.0005 RI	nD 0.0005		
KH-02942-05	Urine S.G	1.000 to 1.050	0.001 usg	±0.001	No	
	Refractive index	nD 1.333 to 1.356	0.001 RI	nD 0.001		



New

Digital Handheld Urine Specific Gravity Refractometer

Measure urine specific gravity—quickly and accurately

This digital pocket refractometer utilizes the refractive index method for measuring urine specific gravity. Unit features automatic temperature compensation for quick and efficient measurements. The lightweight, water-resistant IP65 design allows you to take measurements anywhere. Operation is simple—place the sample on the prism and press the start key; the measurement value is displayed in seconds. Calibration is simple—clean off the prism, add water, and press the zero key.

What's included: storage case and two AAA batteries.

ISO9001:2000
SUPPLIER CERTIFIED



Specifications & Ordering Information

Sample volume: 0.3 mL (minimum)

Display: 3-digit LCD

Response time: 3 seconds

Dimensions: 2"W x 4¼"H x 1¼"D

Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-02941-70	1.000 to 1.060	0.001 usg	±0.001	50 to 95°F (10 to 35°C)	Two AAA batteries (included)	

KH-09376-00 Replacement batteries; AAA. Pack of 12



New

Digital Pocket Refractometers

Compact durable units provide simple and accurate Brix readings

- Extended Brix ranges provide operator flexibility
- Rugged IP65 design is ideal for field use and easy cleanup

These light and compact pocket refractometers are ideal for determining Brix concentrations in fruits and beverages, cutting oils and organic samples, or determining % moisture in honey. In the field or indoors, measurements are quick and accurate. Simply apply two to three drops of sample onto the prism, press the start key, and the percentage value is displayed in seconds. Calibration is simple—clean off the prism, add water, and press the zero key. The easy-to-read LCD eliminates interpretation errors. Cleanup is simple—easily clean under running water.

What's included: storage case and two AAA batteries.

ISO9001:2000
SUPPLIER CERTIFIED



Specifications & Ordering Information

Sample volume: 0.3 mL

Display: 3-digit LCD

Response time: 3 seconds

Dimensions: 2"W x 4¼"H x 1¼"D

Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-02941-51	0.0 to 53.0% Brix	0.1% Brix	±0.2% Brix	50 to 167°F (10 to 75°C)	Two AAA batteries (included)	
KH-02941-52	45.0 to 93.0% Brix					
KH-02941-53	0.0 to 93.0% Brix					
KH-02941-54	0.0 to 85.0% Brix					
KH-02941-55	12.0 to 30.0% honey moisture	0.1% honey moisture	±0.2% honey moisture	50 to 104°F (10 to 40°C)		

KH-09376-00 Replacement batteries; AAA. Pack of 12



New

Palette-Style Digital Refractometers

Measure sugar, salt, or wine concentrations in seconds

- Water-resistant design is ideal for field use in damp areas
- Provides operator the ability to set user scales

Fast and accurate concentration readings make these compact portable refractometers ideal for on-site use. A built-in thermistor provides automatic temperature compensation (ATC) so you don't have to struggle with temperature correction tables. Error messages indicate concentrations or temperatures that fall out of range, inadequate sample volume, standardization errors, or low battery. Easily calibrate units using distilled water and the zero-adjustment button. Wine refractometer 02940-62 is perfect for growers, wineries, and grape must buyers. A simple scale selection key puts Brix, Titre Alcoometrique (T.A.), Oechsle, KMW (babo), and Baume scales at your fingertip.

What's included: one 9 V battery. Models 02940-51 and -63 also include a sample holder for viscous samples and a vial of standard solution.



02940-63

ISO9001:2000
SUPPLIER CERTIFIED

CE 2 year
warranty

Specifications & Ordering Information

Sample volume: 0.1 to 0.3 mL **Response time:** 3 seconds **Display:** 3-digit LCD **Dimensions:** 6¾"W x 1½"H x 3½"D **Power:** one 9 V battery (included)

Cat. no.	Applications	Range and scale	Resolution	Accuracy	ATC	Price
KH-02940-47	Fruits, vegetables, juices, soft drinks, dilution ratios	0.0 to 32.0% Brix	0.1% Brix	±0.1% Brix	41 to 104°F (5 to 40°C)	
KH-02940-49	Fruits, vegetables, juices, soft drinks, dilution ratios, soluble solids	0.0 to 45.0% Brix				
KH-02940-51	Concentrated juices, jams, coolants, washing solutions	0.0 to 60.0% Brix				
KH-02940-63	Jellies, raw liquid sugar, honey, washing solutions	45.0 to 90.0% Brix				
KH-02940-61	Salt content of soy sauce, ketchup, mayonnaise, pickles	0.0 to 10.0% salinity	0.01% at 0.0 to 2.99% 0.1% at 3.0 to 10.0% salinity	±0.05% at 0.00 to 1.0% ±0.5% of reading at 1.01 to 10.0% salinity	50 to 104°F (10 to 40°C)	
KH-02940-62	Wine, grape must	0.0 to 45.0% Brix 0.0 to 26.0% T.A. 1990	0.1% Brix 0.1% T.A. 1990	±0.2% Brix ±0.2% T.A. 1990	41 to 104°F (5 to 40°C)	

[KH-09376-04](#) Replacement batteries, 9 V. Pack of 4

Digital Industrial Fluid and Coolant Refractometers

GO to page(s) 1164–1165

See our "Polarimeters" section to determine concentration and purity of your samples.

Digital display ensures accurate readings

- Units are ideal for measuring coolant levels in antifreeze and deicing solutions
- Automatic temperature compensation makes sample measurements quick and easy

Use these digital refractometers to easily monitor the quality of your water-soluble industrial fluids and coolants. Measure propylene glycol and ethylene glycol concentrations as well as freezing point levels of your samples quickly and accurately. Operation is easy—place a few drops of sample on the prism, press the start key, and the measurement is displayed in three seconds. Display the freezing point by pressing the Start key for two seconds while the concentration (%) is indicated. Calibration is also simple—clean off the prism, add water, and press the zero key.

What's included: storage case and two AAA batteries.



02941-60

02941-66

Specifications & Ordering Information

Sample volume: 0.3 mL **Response time:** 3 seconds **Display:** 3-digit LCD **Dimensions:** 2"W x 4¼"H x 1¼"D

ISO9001:2000
CERTIFIED SUPPLIER

CE

IP65

Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-02941-60	Ethylene glycol: 0.0 to 90.0% (V/V) Freezing point: 0 to -50°C	0.2% (V/V) 1°C	±0.4% (V/V) ±1°C	10 to 40°C	Two AAA batteries (included)	
KH-02941-62	Ethylene glycol: 0.0 to 90.0% (V/V) Freezing point: 32 to -60°F	0.2% (V/V) 1°F	±0.4% (V/V) ±1°F	50 to 104°F		
KH-02941-64	Propylene glycol: 0.0 to 90.0% Freezing point: 0 to -50°C	0.2% (V/V) 1°C	±0.4% (V/V) ±1°C	10 to 40°C		
KH-02941-66	Propylene glycol: 0.0 to 90.0% Freezing point: 32 to -60°F	0.2% (V/V) 1°F	±0.4% (V/V) ±1°F	50 to 104°F		

[KH-09376-00](#) Replacement batteries; AAA. Pack of 12

RE Refractometers

Digital

Digital Fiber-Optic Refractometers

Fiber-optic sensor technology provides highly accurate refractive index measurements

- Features automatic temperature calibration to water and is ready to use in seconds

These digital fiber-optic refractometers are easy to use—simply dip the end of the instrument into the liquid solution, press a button, and the microprocessor quickly displays a digital readout. The large LCD is easy to read and eliminates errors. Program up to five different scales per instrument. All models are made from high-impact, chemical resistant Valox® plastic, are water resistant, and are designed to operate in demanding environments. The sensor is protected by a sapphire window.

Specifications & Ordering Information

Display: 5-digit LCD **Dimensions:** 8½"L x 1½"W x 1"D **Sample volume:** 0.1 mL, minimum

Cat. no.	Range	Resolution	Accuracy	ATC	Power	Price
RI and Brix refractometer						
KH-81004-00	RI: 1.3280 to 1.4330 Brix: 0 to 56%	0.0005 RI 0.25%	±0.0005 ±0.25%	32 to 122°F (0 to 50°C)	One 9 V battery (included)	
Glycol refractometers						
KH-81004-02	Ethylene glycol: 0.0 to 100.0% v/v; -84 to 32°F Propylene glycol: 0.0 to 100.0% v/v; -60 to 32°F	0.5% 1°F 0.5% 1°F	±0.5% ±0.5°F ±0.5% ±0.5°F	32 to 122°F (0 to 50°C)	One 9 V battery (included)	
KH-81004-04	Ethylene glycol: 0.0 to 100.0% v/v; -60 to 0°C Propylene glycol: 0.0 to 100.0% v/v; -51 to 0°C	0.5% 1°C 0.5% 1°C	±0.5% ±0.25°C ±0.5% ±0.25°C			
Sea water refractometer						
KH-81004-06	Salinity: 0 to 150 ppt % solids: 0 to 15% Specific gravity: 1.000 to 1.114	±2.0 ppt ±0.25% 0.001 SGU*	±2.0 ppt ±0.25% ±0.002 SGU*	32 to 122°F (0 to 50°C)	One 9 V battery (included)	
Methanol refractometer						
KH-81004-14	Methanol: 0.0 to 50.0% Methanol: 62 to 100% Freeze point: -42 to 0°C Specific gravity: 1.000 to 0.932	1% 1% 1°C 0.005 SGU*	—	32 to 122°F (0 to 50°C)	One 9 V battery (included)	

*SGU = specific gravity units

Reichert Full-Range Digital Refractometer

Lab or field use—exacting accuracy with full range in the palm of your hand!

- Measures critical angle, reflected light refractive index, or % solids as Brix over the full range
- Single- or multi-point calibration—four reading modes and adjustable contrast control
- Optional IR computer link-up lets you take advantage of additional software for stored data retrieval and programming up to three user-defined channels.

Use this completely portable refractometer wherever work takes you. The accuracy is comparable to most benchtop laboratory instruments and it's easy to use. Simply choose the reading mode you want, apply a 100 µL sample to the prism surface, and press READ. User interpretation is eliminated, as readings are displayed instantly on a direct reading LCD panel.

Calibrate with distilled water or use up to four customizable calibration points. The prism temperature sensors and automatic temperature compensation (ATC) enhance accuracy without the need for temperature correction calculations. The optics and sensing element are mounted on a fully sealed, rugged diecast frame in a molded, completely sealed housing that provides maximum environmental protection and chemical resistance.

Meter stores 225 most current readings. Use the exclusive IR communications port for downloading readings directly to your PC or programming up to three user-defined channels. Requires optional communications package (order separately at right).

Specifications & Ordering Information

Sample volume: 0.1 mL, minimum

Output: RS-232[†]

Display: direct-reading LCD

Dimensions: 3¾"W x 7"L x 1½"D

Cat. no.	Range	Resolution	Accuracy	ATC	Power	Price
KH-81030-00	0 to 95% Brix 1.3300 to 1.5600 RI	0.1% Brix 0.0001 RI	±0.1% Brix ±0.0001 RI	10 to 110°F (-12 to 43°C)	Four AAA batteries (included)	

[†]Output is achieved via IR communication package—sold separately at right.



81004-00



Unit provides instant digital readout



Stainless steel sample well

81030-00

IR Communications Package

Use the refractometer's IR communication port with the IR transceiver and link-up software to upload up to three custom channels. The IR transceiver plugs into the RS-232 port on your PC to allow two-way communication between the refractometer and your PC.

Download the readings, current calibration data, or up to 225 readings that include time/date stamp, reading value, units, channel name, temperature, and sample number.

[KH-81030-50](#) IR communications package (transceiver and software)

Refractometers RE

Digital

Refractometer

Choose from four scales—Brix, inverted sugar, HFCS-55 and HFCS-42

- ±0.05% accuracy with a measurement range of 0.00% to 95.00% Brix!
- Measure concentrations of fruit and fruit juices, jams, pastes, canned syrups, sauces and liquid sugars

This automatic refractometer is ideal for the food, beverage, pharmaceutical and chemical industries as it can be used to measure a wide variety of samples. Coolants, ethanol, amino acid and brine solutions can also be measured with the highest level of accuracy (±0.05%) and the widest Brix measuring range (0.00 to 95.00%). Samples can be measured with ease ensuring quality and process control.

Automatic temperature compensation allows for the measurement of samples that are above or below room temperature. The temperature of each sample is displayed at the time of measurement, eliminating potential uncertainties. There are only three operation keys: zero, start and scale, making measurements quick and easy. Apply a sample on the surface of the prism, press and release the start key and the measured value is displayed in five seconds.

This unit is very easy to calibrate. Simply clean the prism, add distilled water then press the zero key. RS-232 enables you to store and send output data to your computer or printer.

What's included: a 115 VAC adapter, 6½-ft power cord, and two plastic sample spoons.

GO to page(s) 1164-1165

See our "Polarimeters" section to determine concentration and purity of your samples.



81100-40

ISO9001:2000
SUPPLIER CERTIFIED



Specifications & Ordering Information

Sample volume: 0.1 mL, minimum

Output: RS-232

Display: 4-digit LED

Dimensions: 4¾"W x 3½"H x 10⅝"D

Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-81100-40	0.00 to 95.00% Brix	0.01% Brix	±0.05% Brix	41 to 104°F (5.00 to 40.00°C)	100 to 240 VAC, 50/60 Hz	

Programmable Digital Refractometers

Measure refractive index samples from 1.32500 to 1.7000

- Built in thermo module ensures precision accuracy and eliminates the need for a water bath circulator
- Model 81100-34 features a flat sample stage—providing a smooth clean surface for any beverage

Process control and quality assurance has never been made easier with these programmable automatic refractometers. Refractive index, Brix, and percent concentration can be all measured with precision accuracy. These units are ideal for use in the food and beverage, pharmaceutical, chemical and cosmetic industries. Determine the refractive index of citrus, animal or vegetable oils, methylene chloride, polymers, medicinal liquids and chemicals with the widest refractive index range of 1.32500 to 1.7000. Take precise Brix measurements of fruit and concentrated juices, canned syrups, liquid sugars and glucose with a Brix range of 0.00 to 95.00%. Three separate mode types provide user flexibility of taking measurements with or without automatic temperature compensation.

Measure your sample directly after it reaches the set target temperature in mode 1. Select mode 2 for measuring the refractive index and temperature at a fixed interval, displaying the estimated value at the set target temperature. In mode 3, measurements start immediately after the sample is placed on the prism and the start key is pressed—measurement start time can be manually delayed after pressing the start key.

New



81100-34

These units feature built-in peltier temperature control that eliminates the need for a water bath circulator. A conversion formula is automatically created if three points of a user scale corresponding to the refractive index are inputted. Program up to 30 different user scales. The LCD display with backlight provides mode, date, time, measurement, ambient and target temperature readings. Extended memory capability allows you to display the last 30 measurements. The rugged stainless steel sample well makes clean up easy. Print out measurement data or download information directly to your PC with RS-232 output capabilities.

What's included: a 115 VAC adapter, 6-ft power cord, keyboard mask, plastic sample spoon and instruction manual.

ISO9001:2000
SUPPLIER CERTIFIED



Specifications & Ordering Information

Sample volume: 0.1 mL, minimum

Output: RS-232

Display: LCD

Dimensions: 14½"W x 5½"H x 10¼"D

Catalog number	Range	Resolution	Accuracy	ATC	Power	Price
KH-81100-30	0.00 to 95.00% Brix, 1.3250 to 1.7000 nD	0.01% Brix, 0.00001 nD	±0.1% Brix, ±0.0001 nD	41 to 158°F, (5.00 to 70.00°C)	100 to 240 VAC, 50/60 Hz	
KH-81100-32	0.00 to 95.00% Brix, 1.32700 to 1.58000 nD	0.01% Brix, 0.00001 nD	±0.03% Brix, ±0.00004 nD	41 to 140°F, (5.00 to 60.00°C)		
KH-81100-34						

RE Refractometers

Abbe

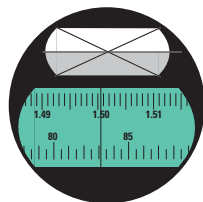
Abbe Refractometers

Uncompromising precision at an economical cost

- High refractive index model 02940-06 reads up to 1.8700 RI
- Meets ASTM D 1416-89, Section 38-46 requirements



High-precision
Abbe refractometer
02940-04



View % Brix and RI
simultaneously using
models 02940-02 or -04.



Standard Abbe
refractometer 02940-02

Temperature readings at the
prism are shown on digital
display unit (included).

These Abbe refractometers give you an accurate reading of the refractive index of liquids and solids. The standard model 02940-02 and the high-precision model 02940-04 read both RI and % Brix scales—you can view both scales through the eyepiece at the same time.

Place your sample on the main prism, which is rimmed with stainless steel to prevent corrosion. The frosted secondary prism directs light to the main prism evenly, and lifts up for easy placement of solids and viscous liquids on the main prism. Built-in illuminator provides stable, monochromatic light (589.3 nm), making it easy to read the black lines on the green field. The color compensator knob lets you adjust the boundary line for higher clarity. Use the color compensation knob on the refractometer and a conversion table to measure dispersion (variance of RI with different wavelengths of light).

To maintain constant temperature at both prisms, these refractometers include four 9-mm OD ports (using 6 to 7-mm ID tubing) for connections to a constant-temperature bath. A thermistor thermometer for measuring temperature is built into the main prism. The temperature of the main prism is indicated on the LCD from 0 to 50°C with $\pm 0.2^\circ\text{C}$ accuracy; a digital temperature display unit is included. The built-in desiccant chamber removes moisture from internal optics.

High-precision model 02940-04 features an accuracy of $\pm 0.05\%$ (% Brix) and ± 0.0001 (RI). A dual control knob on the refractometer lets you quickly focus the boundary line, then fine-tune it for greater resolution. The high-intensity lamp is capable of reading semi-opaque samples. Adjust the light intensity with the four-position switch to better define your boundary line. Extra-large black scale is easy to read. An air purge port helps prevent condensation.

What's included: a temperature display unit that measures $4\frac{3}{8}''\text{W} \times 3\frac{3}{16}''\text{H} \times 4''\text{D}$, standard solution (4-mL of monobromonaphthalene), a screwdriver for scale adjustment (model 02940-04 includes an L-wrench), and a 5-ft cord with three-prong plug.

Specifications & Ordering Information



Sample volume: 0.2 mL

Display: 3-digit LCD

Dimensions

Models 02940-02, -06: $5\frac{1}{8}''\text{W} \times 9\frac{1}{16}''\text{H} \times 7\frac{1}{16}''\text{D}$
Model 02940-04: $4\frac{3}{4}''\text{W} \times 13\frac{3}{8}''\text{H} \times 12\frac{1}{4}''\text{D}$

Catalog number	Range	Resolution	Accuracy	Power (VAC, Hz)	Price
Standard Abbe refractometers					
KH-02940-02	0 to 95.0% Brix; 1.3000 to 1.7000 RI	0.5% Brix; 0.001 RI	$\pm 0.1\%$ Brix ± 0.0002 RI	115 VAC, 50/60 Hz	
KH-02940-06	1.4700 to 1.8700 RI	0.001 RI	± 0.0002 RI		
High-precision Abbe refractometer					
KH-02940-04	0 to 95.0% Brix; 1.3000 to 1.7100 RI	0.1% Brix; 0.0002 RI	$\pm 0.05\%$ Brix ± 0.0001 RI	115 VAC, 50/60 Hz	

More info

Maintain constant temperature at both prisms by using your Abbe refractometer with a circulating bath. Order bath 12107-20 separately below or see our "Baths and Circulators" section on pages 104-133.



12107-20

Accessory

Digital Heated Circulating Bath is ideal for maintaining constant temperature of samples. Temperature range is 5° above ambient to 200°C with a stability of $\pm 0.01^\circ\text{C}$. Wetted parts are constructed of 304 stainless steel. Overall dimensions $9''\text{W} \times 14''\text{H} \times 14\frac{3}{4}''\text{D}$.

KH-12107-20 Digital heated circulating bath; 120 VAC, 50/60 Hz

Reichert Digital and High-Precision Abbe Refractometer

High-precision model eliminates interpretation errors—automatically interprets the shadowline

Ideal for pharmaceutical, industrial fluid, chemical, petrochemical, plastic, and food and beverage industries. Each model features three measurement modes: % solids expressed as sucrose (% Brix), temperature compensated % solids, and Refractive Index scales. Automatic temperature compensation (ATC) corrects measurements to 20°C within the operating range (see table). RS-232 output lets you use computer interfaces to enhance performance. The stainless steel-rimmed prism is sealed with solvent-resistant epoxy to prevent damage from harsh chemicals. Choose from two models—both feature a focusable eyepiece and dispersion correction prism to provide true 589 nm RI measurements.

Digital Model is easy to use. Simply place your sample on the prism, adjust the shadowline (if using the uncorrected scale), focus the image, and press the READ button to see your results on the bright LED display.

High-Precision Model automatically transmits light eliminating the need to adjust the shadowline to take a reading. Just place your sample on the prism and press the READ button to see your results on the bright LED display. The direct reading eliminates operator error and provides high-accuracy testing.

The high-precision model features seven calibration points across the wide range of 1.3000 to 1.7000 RI. Use the first calibration point for water; customize the other six.

What's included: four ¼" OD ports for water bath hookup, an Allen wrench for scale adjustments, a splash guard, dust cover, and a 5-ft cord (115 VAC models also include a three-prong plug). Digital model comes with test glass and standard solution; high-precision model with automatic light transmittance comes with NIST-certified calibration oil.



Digital Abbe refractometer
81001-10



High-precision
digital Abbe refractometer
81001-20

Refractometers feature automatic temperature compensation.



Specifications & Ordering Information

Sample volume: 100 µL

Output: RS-232 (two 9-pin serial ports)

Display

Digital models: five-digit LED

High-precision models: six-digit LED

Dimensions

Models 81001-10; -15: 6"W x 14"H x 10½"D

Models 81001-20; -25: 6"W x 13¾"H x 10½"D

Catalog number	Ranges	Resolution	Accuracy	ATC	Power	Price
Digital refractometers						
KH-81001-10	0.0 to 85.0% Brix	Up to 0.0001	± 0.1% Brix ± 0.0001 RI	59 to 122°F (15 to 50°C); ±0.1°C accuracy	115 VAC, 50/60 Hz 230 VAC, 50/60 Hz	
KH-81001-15	1.3200 to 1.7000 RI					
High-precision digital refractometers with automatic light transmittance						
KH-81001-20	0.0 to 95.0% Brix	Up to 0.00001	±0.03% Brix ±0.00005 RI	50 to 176°F (10 to 80°C); ±0.01°C accuracy	115 VAC, 50/60 Hz 230 VAC, 50/60 Hz	
KH-81001-25	1.3000 to 1.7000 RI					

Accessories

KH-21081-30 Collect/W™ Windows® 95 communication software for refractometer models 81001-10 and -15 only, 3½" disk. Use with 286 computer or better running DOS 3.0 or later, and EGA graphics or better. Requires 640 KB RAM

KH-81001-50 Replacement lamp. Pack of 3

KH-81001-70 Replacement test glass

KH-81001-60 Replacement standard solution for models 81001-10 and -15; 7 mL of 1-bromonaphthalene

Refractive Index Standard Solution Sets

Calibrate your refractometer with these NIST-traceable standard solution sets. Each set includes solutions in 0.25 oz (7.4 mL) glass bottles (see table for number of liquids), plastic screw cap, and glass applicator rod. All solutions are standardized at 25°C.



Specifications & Ordering Information

Catalog number	Range	Accuracy	No. of liquids	Interval	Price/st
KH-81006-00	1.300 to 1.395	±0.0005	20	0.005	
KH-81006-02	1.300 to 1.390		10	0.01	
KH-81006-04	1.400 to 1.458	±0.0002	30	0.002	
KH-81006-06	1.400 to 1.456		15	0.004	
KH-81006-08	1.460 to 1.640	±0.0002	46	0.004	
KH-81006-10	1.644 to 1.700		15	0.004	
KH-81006-12	1.705 to 1.800	±0.0005	20	0.005	
KH-81006-14	1.710 to 1.800		10	0.01	



81006-02