

Refractometers

Analog and digital

HIGHLIGHTS

- Portable, accurate and fast
- Wide range of applications
- Easy to use

SUGAR CONCENTRATION

- Only a few drops of the liquid are necessary to read the refractive index straight from the built-in scale
- The reflected light beam projects a shadow line onto a small glass reticle inside the instrument.
- The line and scale can be read through a magnifying eyepiece.
- The reading of most refractometers are corrected with an automatic temperature compensation (ATC)
- All refractometers are equipped with an ATC (except RF.5190) and are supplied with specific scales

APPLICATION

- The food industry uses to determine the exact Brix concentration in marmalades, fruit, fruit juices, honey, treacle, wine and other food products
- In the chemistry and oil industry refractometers are used to measure water / oil emulsions



MODELS

	Scales (Brix)	Accuracy (Brix)	ATC	Analog	Digital
RF.5190	0-90	0.2		•	
RF.5510	0-10	0.1	•	•	
RF.5520	0-20	0.1	•	•	
RF.5532	0-32	0.2	•	•	

	Scales (Brix)	Accuracy (Brix)	ATC	Analog	Digital
RF.5562	28-62	0.2	•	•	
RF.5580	0-80	0.5	•	•	
RF.5582	40-82	0.5	•	•	
RF.5592	58-92	0.5	•	•	

ALCOHOL AND ALCOHOL-SUGAR SOLUTIONS

- Using refractometers permits the growers to choose the moment of the vintage by monitoring the "must"
- Corrected with an automatic temperature compensation (ATC)

APPLICATION

- Sugar concentration, % alcohol and alcohol/sugar solutions

MODEL

	Scales (%)	Accuracy (%)	Scales (Brix)	Accuracy (Brix)	ATC	Analog	Digital
RF.5625	0 - 25	0.2	0 - 40	0.2	•	•	



SUGAR AND SALT

- The handheld refractometers are equipped with a Brix scale
- Corrected with an automatic temperature compensation (ATC)

APPLICATION

- Substance identification of salt, water-soluble salt solutions of sugar

MODELS

	Scales (°C)	Accuracy (°C)	Scales (Brix)	Accuracy (Brix)	Scales (%)	Accuracy (%)	Scales (RI)	Accuracy (RI)	ATC	Analog	Digital
RF.5610	0 - 100	1	0 - 10	0.1	-	-	-	-	•	•	
RD.5728	-	-	0 - 35	0.1	0 - 28	0.1	1.30 - 1.39	0.0001	•		•



BATTERY ACID AND COOLANT

- The refractometer features a coolant temperature scale for ethylene glycol and propylene glycol
- It also has a specific acid
- Corrected with an automatic temperature compensation (ATC)



RF.5650

APPLICATION

- Testing water-soluble coolants and battery acid solutions

MODELS

	Scales (°C)	Accuracy (°C)	Scales (RI)	Accuracy (RI)	ATC	Analog	Digital
RF.5650	0 - -50	5	1.15 - 1.30	0.01	•	•	
	Ethylene / Propylene glycol	Ethylene / Propylene glycol	Battery acid	Battery acid			

CLINICAL APPLICATIONS

- Clinical refractometers are commonly used to measure Serum Protein, Specific Gravity of Urine and Refractive Index
- Corrected with an automatic temperature compensation (ATC)



RF.5612

APPLICATION

- For measuring clinical applications as Serum Protein, Specific Gravity of Urine and Refractive Index

MODELS

	Scales (g/dl)	Accuracy (g/dl)	Scales (sg)	Accuracy (sg)	Scales (RI)	Accuracy (RI)	ATC	Analog	Digital
RF.5612	0 - 12	0.2	1 - 1.05	0.002	1.333 - 1.360	0.0005	•	•	
RD.5712	0 - 12	0.2	1 - 1.05	0.001	1.33 - 1.39	0.0001	•		•

SUGAR CONCENTRATION IN JUICES

- A focused light beam of a LED source is reflected by the substance on a linear array of photo diodes
- The refractometer correlate the position of the light beam on the array of photo diodes to refractive index or to another unit of measure related to the substance under observation
- Digital handheld refractometer. The value can be read from a digital LCD readout
- Latest technology for measuring refractive indices.
- With the refractive index the device calculates the concentration
- The sample is illuminated by LED light source while an optical sensor measures the percentage of reflection from the sample
- Units in Brix, °Oe (Oechsle) and °KMW
- Corrected with an automatic temperature compensation (ATC)



RD.6535

APPLICATION

- Especially designed to measure sugar concentrations in fresh fruit juices

MODELS

Concentrations of grapes and fruit

	Scales (°Oe)	Accuracy (°Oe)	Scales (Brix)	Accuracy (Brix)	Scales (°KMW)	Accuracy (°KMW)	ATC	Analog	Digital
RF.5635	0 - 140	1	0 - 32	0.2	0 - 25	0.2	•		•
	Oechsle units	Oechsle units	Sugar concentration	Sugar concentration	Babo units	Babo units			

Concentrations of sugar, nD indices (only for sugar)

	Scales (Brix)	Accuracy (Brix)	Scales (RI)	Accuracy (RI)	ATC	Analog	Digital
RD.5635	0 - 35	0.1	-	-	•		•
RD.5645	0 - 45	0.1	1.33 - 1.40	0.0001	•		•
RD.5665	28 - 65	0.1	-	-	•		•

ABBE LABORATORY REFRACTOMETER

SUBSTANCE IDENTIFICATION

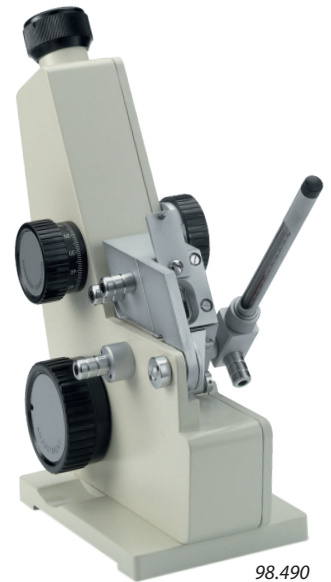
- The Abbe laboratory refractometer is a bench-top instrument for high-precision measurements of an index of refraction
- Abbe refractometers are more accurate with an extended scale to measure concentrations of sugar and refractive indices
- Capable of measuring all kinds of concentrations and identifying several types of substances
- The instrument is equipped with a built-in thermometer and water connection to control fluid temperatures
- Equipped with a Brix and a refraction index scale and supplied with a test plate
- The Abbe refractometer can be connected to a water bath for measuring at a controlled temperature
- During the use of this type of refractometer the use of a cold light source like the LE.5209 is recommended
- Delivered with carrying case, thermometer 0-50° Celsius, calibration plate and adjusting tool

APPLICATION

- Suitable for determination of the refractive index of solid samples, such as glass, plastics, and polymer films

ACCESSORIES AND SPARE PARTS

- 98.492** Thermometer 0-50° C
(for Abbe refractometer 98.490)
- 98.496** Calibration slide nD 1.5163
(for Abbe refractometer 98.490)



98.490

MODEL

	Scales (Brix)	Scales (Brix)	Accuracy (RI)	Accuracy (RI)	Remarks	Analog	Digital
98.490	0 - 95	0.5	1.300 - 1.700	0.0002	Supplied without light source	•	•

GEMOLOGICAL REFRACTOMETER

GEMSTONES

- Gemmological refractometers are the key instruments for research in gemological laboratories
- Gemstones can be examined using the optical principles on which these refractometers are based
- Refractive index, one of the principal properties used in determining the type of a gemstone, is a material constant, dependent on the chemical composition of a substance
- This allows users to identify gem materials by measuring their refractive index
- Determination of the refractive index is done at the wavelength of the sodium line D-line (NaD) of ~589 nm.
- This is filtered out from daylight with a dedicated optical filter

APPLICATION

- Identification of precious stones

ACCESSORIES AND SPARE PARTS

- RF.5295** Test slide 78.8 Brix for calibration of RF.5190
- RF.5384** 5 ml immersion nD 1.79 liquid for RF.5381
- LE.5209** 20 W 12 V cold light source with single fiber light conductor
- SL.5208** Spare 20 W 12 V halogen bulb



RF.5381

MODEL

	Scales (RI)	Accuracy (RI)	Remarks	Bench-top instrument	Analog	Digital
RF.5381	1.30 - 1.81	0.01	With filter 590 nm	•	•	•

Datasheet v. 721251

