

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)

APPLICATION

- Testing water-soluble coolants and battery acid solutions



RF.5650

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)

APPLICATION

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



RF.5612

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)

APPLICATION

- Especially designed to measure sugar concentrations in fresh fruit juices



RD.6535

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 (°Oe)	Accuracy (°Oe)	Scales (Brix)	Accuracy (Brix)	Scales (°KMW)	Accuracy (°KMW)	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. 627241