



Refractometers  
Polarimeters



# Refractometers

*Refractometers are used for the identification of substances or to measure concentrations in fluids. Because the refractive index (R.I.) of a solution is proportional to the concentration it is easy to identify the substance or to measure the purity and concentrations of solutions. The Euromex refractometers are calibrated at 20° Celsius. Most refractometers are equipped with Automatic Temperature Compensation (ATC).*



## Sugar concentrations in juices

Especially designed to measure sugar concentration in fresh fruit juices. Units in Brix, °Oe and ° KMW.

With ATC. Article no RF.5635

## Monitoring alcohol and alcohol-sugar solutions

To measure concentrations of alcohol, sugar and alcohol-sugar solutions. Using refractometers permits the growers to choose the moment of the vintage by monitoring the "must" (grape and juice mixture). With ATC. Article no RF.5625



## Sugar concentrations

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

With ATC (except RF.5190).

Article no RF.5190, RF.5510, RF.5520, RF.5532, RF.5562, RF.5580, RF.5582, RF.5592, RD.5635, RD.5645 and RD.5665

## Digital hand refractometers

Latest technology for measuring refractive indices. The sample is illuminated by a LED light source while an optical sensor measures the percentage of reflection from the sample. With the refractive index the device calculates the concentration.

With ATC.



## Traditional hand refractometers

Only a few drops of the liquid are necessary to read the refractive index straight from the built-in scale. Most of Euromex refractometers are equipped with an ATC (Automatic Temperature Compensation).

Euromex refractometers can be supplied with specific scales.



# Product overview

Application	Art no	Range	Accuracy	Remarks	ATC	Hand refractometer	Table refractometer	Analogue	Digital
Concentrations of sugar in marmalades, fruits, honey, syrups, wine and monitoring of oil emulsions	RF.5190	0-90 Brix	0.2	3 scales: 0-42 / 42-71 / 71-92 Brix	-	•		•	
	RF.5510	0-10 Brix	0.1		•	•		•	
	RF.5520	0-20 Brix	0.1		•	•		•	
	RF.5532	0-32 Brix	0.2		•	•		•	
	RF.5562	28-62 Brix	0.2		•	•		•	
	RF.5580	0-80 Brix	0.5		•	•		•	
	RF.5582	40-82 Brix	0.5		•	•		•	
	RF.5592	58-92 Brix	0.5	•	•		•		
Concentrations of grapes and fruit	RF.5635	0-140 °Oe	1 °Oe	Oechsle units	•	•		•	
		0-32 Brix	0.2 Brix	Sugar concentration					
		0-25 °	0.2 ° KMW	Babo units					
Concentration of sugar, nD indices, only for sugar	RD.5635	0-35 Brix	0.1		•	•			•
	RD.5645	0-45 Brix	0.1		•	•			•
	RD.5665	1.33-1.40 R.I.	0.0001						
		28-65 Brix	0.1	•	•			•	
Substance identification of Sugar concentration	98.490	0-95 Brix 1.30-1.70 R.I.	0.5 0.0003	(Abbe table refractometer without light source)			•	•	
Concentration of sugar/ alcohol % in alcohol-sugar solutions	RF.5625	0-25 %	0.2 %	% volume	•	•		•	
		0-40 Brix	0.2 Brix						
Salinity and concentration of sugar	RF.5610	0-100 ‰/00	1 ‰/00	% salinity  Only for sugar/salt	•	•		•	
		0-10 Brix	0,1 Brix						
	RD.5728	0-28 %	0.1 %		•	•			•
		0-35 Brix	0.1 Brix						
		1.33-1.39 R.I.	0.0001						
Clinical applications Proteins	RF.5612	0-12 g/dl	0.2 g/dl	Proteins in serum	•	•		•	
		1.00 tot 1.05 sg	0.002 sg	Urine specific gravity					
		1.333-1.360 R.I.	0.0005						
	RD.5712	0-12 g/dl	0.2 g/dl	Proteins in serum	•	•			•
		1.00 tot 1.05 sg	0.0001 sg	Urine specific gravity					
		1.33-1.39 R.I.	0.0001						
Battery Acid Coolant	RF.5650	1.15-1.30	0.01	Battery Acid	•	•		•	
		0 / -50 °C	5 °C	Ethylene glycol					
		0 / -50 °C	5 °C	Propylene glycol					
Moisture content contact lenses	RF.5315	35-80 %	1 %		-	•		•	
Identification of precious stones	RF.5381	1.30-1.81 R.I.	0.01	with 590 nm filter	-		•	•	
	RF.5382	1.30-1.81 R.I.	0.01	with 590 nm filter, polarisation filter and light source	-		•	•	



## Coolant and Battery Acid refractometers

Used for testing water-soluble coolants and battery acid solutions. The Coolant refractometer features a coolant temperature scale for ethylene glycol and propylene glycol. The Battery Acid refractometer has a specific gravity scale.

With ATC. *Article no RF.5650*



RF.5382

## Gemmology

This table refractometer has been specifically designed for determination of precious stones. Contains a 590 nm filter for monochromatic light. *Article no RF.5381, RF.5382. The RF.5382 also comes with a polarisation filter and light source*

## Abbe table refractometer

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 Abbe refractometer should be used with a glass fibre cold light illuminator like the Euromex LE.5219. Delivered with carrying case, thermometer 0-50° Celsius, calibration plate and adjustment tool

*Article no 99.490*



## Concentration of sugar and salt

For concentrations of salt, water-soluble salt solutions or sugar. The RD.5728 and RF.5610 are equipped with a Brix scale. With ATC. *Article no RF.5610 and RD.5728*

## Clinical applications

Clinical refractometers are commonly used to measure Serum Protein, Specific Gravity of Urine and Refractive Index.

With ATC. *Article no RF.5612 and RD.5712*

## Humidity grade in contact lenses

Specifically designed to measure moisture content in contact lenses. With ATC. *Article no RF.5313*



98.490

# Polarimeters

*Concentrations and purity of optically active substances can be easily determined with polarimeters. Optically active material affects linear polarised light such that the rotation of the polarisation plane is proportional to the concentration of chiral molecules in the substance.*

The rotation angle of the polarisation plane of linear polarised light, is different for each optical active substance as described in the Law of Biot. Polarimetry is a non-destructive test method for measuring optical activity of organic and inorganic substances. It is very useful to analyse expensive non-reproducible samples. Polarimeters are extensively used for quality and process control in research laboratories in the chemical and food industry

## Polarimeter of Mitscherlich

The polarimeters are delivered with 100 and 200 mm observation tubes.

The Euromex PM.5400 is equipped with a 589.3 nm filter, a removable Tungsten light source and an international sugar scale (°S).

The Novex 99.400 is equipped with a built-in 230 V 589.3 nm sodium lamp



PO.5400



99.400

## Polarimeter of Mitscherlich

Art no	Range	Accuracy
PM.5400	± 130°	0.1° polar scale
	± 110°	0.1° sugar scale
99.400	± 180°	0.1° polar scale

# Accessories

## For refractometers

- RF.5295 Test plate 78.8 Brix for calibration of RF.5190, RF.5282 and RF.5292
- RF.5384 5 ml immersion fluid nD 1,79 for RF.5381 and RF.5382
- LE.5209 Cold light source 20W ,12V with glass fibre
- SL.5208 Spare halogen bulb
- 98.492 Spare thermometer 0-50° C for Abbe refractometer 98.490
- 98.496 Calibration plate nD 1.5163 for Abbe refractometer 98.490

## For Euromex polarimeter PM.5400

- PM.5410 Observation tube 100 mm
- PM.5415 Observation tube 200 mm
- PM.5430 Cover glass Ø15 mm for observation tubes
- PM.5431 Rubber seal for PM.5430
- SL.5197 Spare bulb 230V, 30W

## For Novex polarimeter 99.400

- 99.410 Observation tube 100 mm
- 99.415 Observation tube 200 mm
- 99.430 Cover glass Ø15 mm for observation tubes
- 99.431 Rubber seal for 99.430
- 99.197 Spare sodium bulb, 589.44 nm



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