euromex RF.6510 Analog Refractometer User Manual

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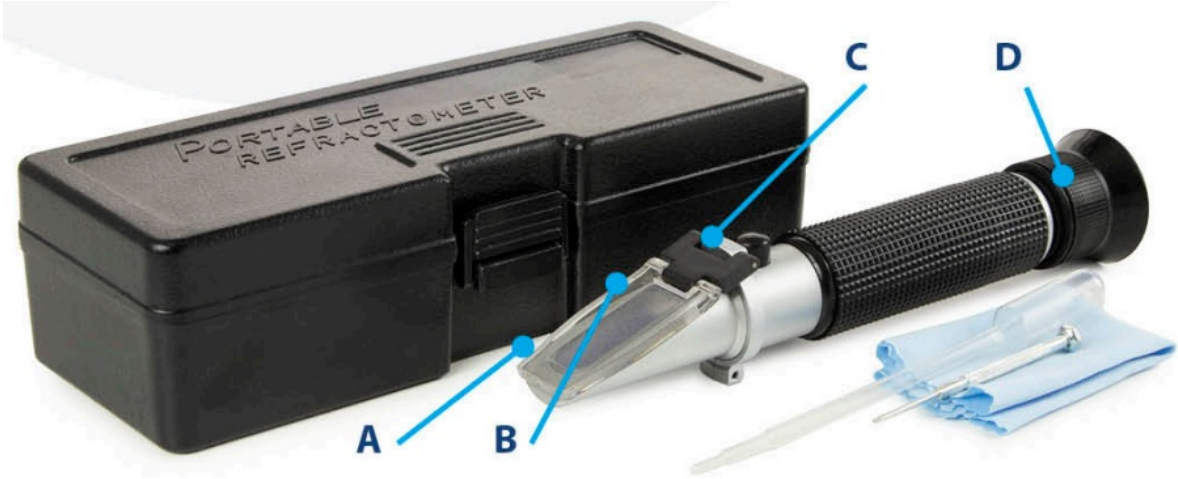
euromex RF.6510 Analog Refractometer

Introduction

With your purchase of a Euromex hand refractometer you have chosen for a quality product. The Euromex hand refractometers are developed for use in laboratories and in the food industry
The maintenance requirement is limited when using the refractometer in a decent manner
This manual describes the construction of the refractometer, how to use the refractometer and maintenance of the refractometer

General safety instructions

- This product is a high quality optical instrument. Delicate handling is required
- Impacts, even small ones, can affect the precision of the device
- Keep the device and its optics clean for maximum performance
- Precautious should be taken with the samples; substances under observation may be a risk to the health of humans and other living organisms or the environment



Construction of the refractometer
The names of the parts are listed below and are indicated in the picture above

A	Prism	C	Adjustment screw (underneath protective cap)
B	Cover	D	Adjustable eyepiece

Functions of the refractometer

The Euromex hand refractometers are widely used for measuring sugar concentrations, in the table on the next page the different models are shown with their specific way of calibrating them

Model	Type	Range	Accuracy	Calibration
RF.6190	Universal	0 - 90 Brix	0.2	testpiece 78,8%
RF.6510	High contrast	0 - 10 Brix	0.1	distilled water
RF.6520	High contrast	0 - 20 Brix	0.1	distilled water
RF.6532	High contrast	0 - 32 Brix	0.2	distilled water
RF.6562	High contrast	28 - 62 Brix	0.2	testpiece 78,8%
RF.6580	High contrast	0 - 80 Brix	0.5	distilled water
RF.6582	High contrast	40 - 82 Brix	0.5	testpiece 78,8%
RF.6592	High contrast	58 - 92 Brix	0.2	testpiece 78,8%
RF.6635	High contrast	multple	0.2/1	distilled water
RF.6642	High contrast	multple	0.1	testpiece 19,6%
RF.6644	High contrast	multple	0.5	testpiece 78,8%
RF.6627	High contrast	multple	0.2	distilled water
RF.6610	High contrast	multple	0.005/0.1/1	distilled water
RF.6628	High contrast	multple	0.2	distilled water

Standard accessories

- For all types: carrying case, screwdriver or alien key for scale adjustment, plastic pipette
- For RF 190 only: temperature correction thermometer
- For RF.6190, RF.6562, RF.6582, RF.6592, RF.6642 and RF.6644: testpiece 19,6% or 78,8% and dispersion fluid

Working with the refractometer

Prior to the actual measurement, the scale should be checked if it is correct or not (calibrated). If not, the scale should be adjusted by using the supplied tool to turn the scale adjustment screw (C). For this check, two different standard specimens for each type of hand refractometer are used. These are distilled water and a test-piece, as suggested in the table above

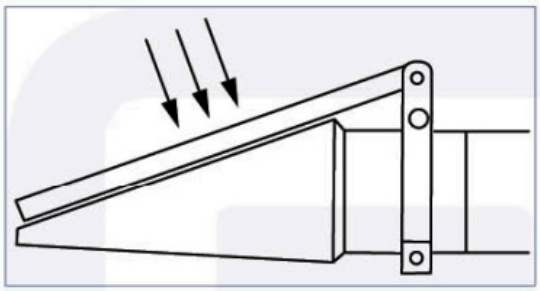
A) Distilled water
Open the prism cover (B). and put a drop of distilled water on the surface of prism (A). Close the prism cover and peep through the eyepiece (D). You will see the horizontal demarcation line as well as the scale in the field of view . If the scale is correctly calibrated the horizontal demarcation line should be exactly on the 0% position of the scale. If not, one can adjust the scale with the screwdriver until the demarcation line is at the scale's 0% position

B) Test-piece

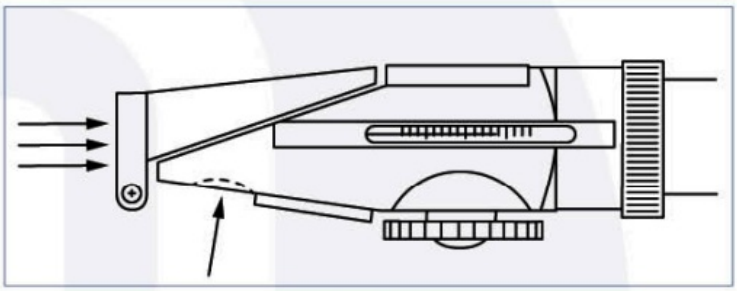
For RF.6190, RF.6562, RF.6582, RF.6592, RF.6642 and RF.6644 a standard test-piece is included to calibrate the scale . Put a small drop of the supplied dispersion fluid on the prism and put the testpiece into this drop, close the cover gently. The value should read 19.6% or 78.8% depending on the model

Light entrance

Usually daylight is good enough for all types of hand refractometers but depending of the kind of sample, one can also direct the refractometer to a bright light source



High contrast type



Universal type

Note: Only for the RF.6190, a special daylight window for opaque specimens is provided. Usually it should be kept closed

Actual measurement

Wipe off the distilled water, or dispersion fluid. Put a few drops of the specimen on the prism. Close the prism cover and the percentage of the measurement can be read at the position of the demarcation line

Temperature compensation

All types have an Automatic Temperature Compensation system (ATC), except for the RF.6190 universal type. With this type, if the temperature at the measurement is not 20°C but higher or lower, the reading should be compensated in accordance with the compensating table below. For example, when the reading is 20 at a temperature of 28°C. the compensated percentage is 20% + 0.62% = 20.62%.

%	s	10	15	20	25	30	35	40	45	so	55	60	65	70
·c	(-) reduce figure from theread figure(%)													
15	0.29	0.31	0.33	0.34	0.34	0.35	0.36	0.37	0.37	0.38	0.39	0.39	0.40	0.40
16	0.24	0.25	0.26	0.27	0.28	0.28	0.29	0.30	0.30	0.30	0.31	0.31	0.32	0.32
17	0.18	0.19	0.20	0.21	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.24	0.24
19	0.06	0.06	*O.QI*	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
(+) add figure to the read figure(%)														
21	0.07	0.07	*O.QI*	*O.QI*	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
22	0.13	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16
23	0.20	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.24	0.24
24	0.27	0.28	0.29	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.32	0.32	0.32	0.32
25	0.35	0.36	0.36	0.38	0.38	0.38	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
26	0.42	0.43	0.44	0.45	0.46	0.47	0.48	0.48	0.48	0.48	0.48	0.48	0.48	0.48
27	a.so	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.56	0.56	0.56
28	0.57	0.60	0.61	0.62	0.63	0.63	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64
29	0.66	0.68	0.69	0.71	0.72	0.72	0.72	0.73	0.73	0.73	0.73	0.73	0.73	0.73
30	0.74	0.77	0.78	0.79	0.80	0.80	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81

Maintenance and cleaning

Always clean the prism of the refractometer after use with a soft tissue
Warning
Cleaning cloths containing plastic fibres can damage the coating of the prism!
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Documents / Resources

	euromex RF.6510 Analog Refractometer [pdf] User Manual RF.6190, RF.6510, RF.6510 Analog Refractometer, Analog Refractometer