

# REED

## Model R9500

### Brix Refractometer



## Instruction Manual

[www.reedinstruments.com](http://www.reedinstruments.com)

.800.561.8187

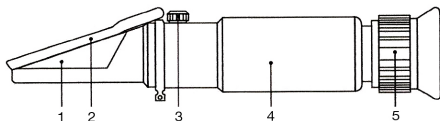
[www.itm.com](http://www.itm.com)

[information@itm.com](mailto:information@itm.com)

## Specifications

Measuring Range:	0 - 32% Brix
Minimum Scale Division:	0.2%
Dimensions:	30 x 40 x 170mm (1 x 1.5 x 6.5")
Weight:	200g (7 oz)
Includes:	Cleaning Cloth, Suction Tube, Screw Driver

## Instrument Description



1. Prism
2. Cover Plate
3. Correcting Screw
4. Mirror Tube
5. Eyepiece (Adjusting ring of diopter)

## Operating Instructions

1. Aim the front end of the refractometer towards the direction of a bright light and adjust the Eyepiece until the reticule is clearly seen.
2. Open the Cover Plate and clean the surface of the Prism with the included Cleaning Cloth.
3. Apply 1 - 2 drops of measuring solution, close the Cover Plate and press lightly. Read the corresponding scale of light and dark boundary. The reading is the Brix of the measured solution.
4. After measuring clean the measured solution off the Prism and Cover Plate with a moist cotton cloth. Allow to air dry before storing.

## Calibration

1. Open the cover plate and place 2-3 drops of distilled water onto the prism surface, close the cover plate, press lightly and ensure the water spreads evenly across the whole surface area without air bubbles or dry sections. (wait 30 seconds until the water adjusts to ambient temperature)
2. Hold towards light source and look into the eyepiece, if the boundary line between the upper blue field and the lower white field is not located exactly on the 0°C waterline, adjust the correcting screw until both lines meet.
3. Wipe the water from the prism with clean dry cloth and replace the rubber correcting screw cover.

**NOTE:** under normal operating conditions the calibration only needs to be checked periodically.

## Temperature Compensation for Sucrose Solution

To compensate the reading for temperature make the calculation according to the chart below. Reference Temperature is set at 20°C.

Quality Fraction %																		
Subtract from measured value																		
°C	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
10	0.52	0.58	0.59	0.61	0.64	0.67	0.69	0.71	0.72	0.74	0.74	0.74	0.75	0.76	0.77	-	-	-
11	0.48	0.51	0.54	0.55	0.58	0.61	0.63	0.65	0.65	0.64	0.67	0.67	0.68	0.68	0.69	-	-	-
12	0.44	0.47	0.49	0.50	0.52	0.55	0.57	0.58	0.58	0.60	0.60	0.60	0.60	0.61	0.61	-	-	-
13	0.39	0.42	0.43	0.44	0.45	0.49	0.50	0.51	0.51	0.53	0.53	0.53	0.53	0.53	0.53	-	-	-
14	0.35	0.37	0.38	0.39	0.40	0.42	0.43	0.44	0.44	0.45	0.45	0.45	0.45	0.45	0.46	-	-	-
15	0.29	0.31	0.32	0.33	0.34	0.35	0.36	0.37	0.37	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.37	0.37
16	0.24	0.25	0.26	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.31	0.31	0.31	0.31	0.31	0.30	0.30	0.30
17	0.18	0.19	0.20	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23	0.23
18	0.12	0.13	0.13	0.14	0.14	0.14	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
19	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07
Add to the measured value																		
°C	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85
21	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07
22	0.13	0.14	0.14	0.14	0.14	0.15	0.15	0.16	0.16	0.16	0.16	0.16	0.16	0.16	0.15	0.15	0.15	0.15
23	0.20	0.21	0.21	0.22	0.22	0.23	0.23	0.23	0.23	0.24	0.24	0.24	0.24	0.23	0.23	0.23	0.23	0.22
24	0.27	0.28	0.28	0.29	0.30	0.30	0.31	0.31	0.31	0.32	0.32	0.32	0.32	0.31	0.31	0.31	0.30	0.30
25	0.34	0.35	0.36	0.37	0.38	0.38	0.38	0.39	0.40	0.40	0.40	0.40	0.40	0.39	0.39	0.39	0.38	0.37
26	0.42	0.43	0.44	0.45	0.46	0.35	0.47	0.47	0.48	0.48	0.48	0.48	0.48	0.47	0.47	0.46	0.46	0.45
27	0.50	0.51	0.52	0.53	0.54	0.55	0.55	0.56	0.56	0.56	0.56	0.56	0.55	0.55	0.54	0.53	0.52	0.52
28	0.58	0.59	0.60	0.61	0.62	0.63	0.64	0.64	0.64	0.65	0.65	0.64	0.64	0.64	0.63	0.62	0.61	0.60
29	0.66	0.67	0.68	0.69	0.70	0.71	0.72	0.73	0.74	0.73	0.73	0.73	0.72	0.72	0.71	0.70	0.69	0.68
30	0.74	0.75	0.77	0.78	0.79	0.80	0.81	0.81	0.81	0.82	0.81	0.81	0.81	0.80	0.79	0.78	0.77	0.75

## Maintenance

1. If the ambient temperature is not within the automatic temperature compensation range (10 - 30°C) the instrument must be calibrated before testing commences.
2. The prism must be cleaned thoroughly with a soft, clean damp cloth after each use - failure to do so will result in inaccurate readings and possible long term damage.
3. The instrument must be kept in a dry clean environment to prevent condensation forming on the optical components.
4. If used in accordance with the instructions and all warning are followed - the optical performance will remain constant and the instrument will give many years of reliable service.

## Warning

1. DO NOT IMMERSE IN OR CLEAN WITH RUNNING WATER
2. THIS TOOL IS A PRECISION OPTICAL INSTRUMENT, IT REQUIRES CAREFUL HANDLING and STORAGE
3. DO NOT DROP OR SUBJECT TO SHOCK AS DAMAGE MAY RESULT TO THE MIRROR TUBE and OPTICAL COMPONENTS
4. DO NOT SCRATCH OR ATTEMPT TO MEASURE CORROSIVE CHEMICALS AS DAMAGE MAY OCCUR TO THE PRISM'S COATING