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Manual Refractometers

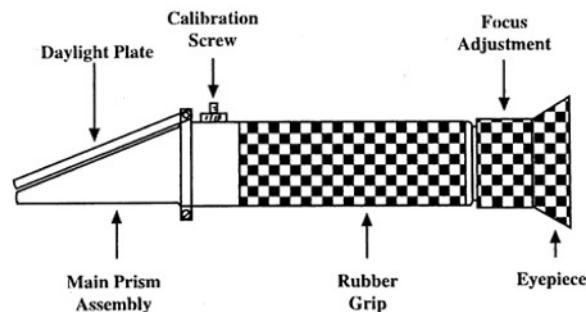


The **PCE** series are developed for working with sugar related liquids (fruit juices, honey, soft drinks, wine), help monitor and control sugar concentrations in foods and beverages. Whether users are checking the "ripeness" of fruit in the field, verifying product quality after harvesting, or controlling concentrations during processing and packaging, refractometers provide critical information to ensure product quality. It is also commonly used for controlling the concentration of various industrial fluids (cutting lubricants and flux rinsing compounds). Which model is to be chosen according to the concentration in the liquids and the parameter of refractometer.

SERIES:

Style	Model	Range	Min. Div	Accuracy	Remarks
Sugar Refractometer	PCE-010	0-10% Brix	0,1 % Brix	± 0,1 %	ATC
	PCE-018	0-18% Brix	0,1 % Brix	± 0,1 %	ATC
	PCE-032	0-32% Brix	0,2 % Brix	± 0,2 %	ATC
	PCE-2862	28-62% Brix	0,2 % Brix	± 0,2 %	ATC
	PCE-4582	45-82% Brix	0,5 % Brix	± 0,5 %	ATC
	PCE-5890	58-90% Brix 38-43Be 12-27% Water	0,5 % Brix 0,5 % Be 0,5 % Wat	± 0,5 % ± 0,5 % Be' ± 0,5 % Wat	ATC
	PCE-Oe	0 ... 190 °Oe 0 ... 44 % sac / brix 0 ... 25 KMN / babo	1 °Oe 0,2 % brix 0,2 KMN	± 2 °Oe ± 0,2 % brix ± 0,5 KMN	ATC

Parts Diagram:



Operation Steps:

Step 1.

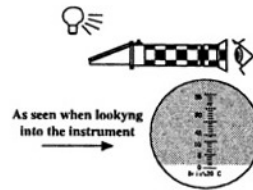
Open daylight plate, and place 2–3 drops of distilled water or calibration liquid on the main prism. Close the daylight plate so the water spreads across the entire surface of the prism without air bubbles or dry spots. Allow the sample to test on the prism for approximately 30 seconds before going to step #2. (THIS ALLOWS THE SAMPLE TO ADJUST TO THE AMBIENT TEMPERATURE OF THE REFRACTOMETER.)



Step 2.

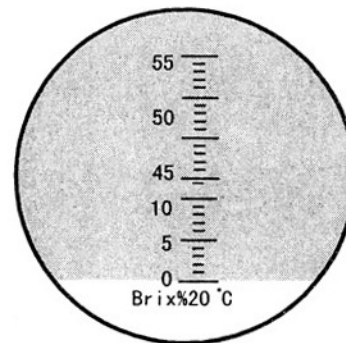
Hold daylight plate in the direction of a light source and look into the eyepiece. You

will see a circular field with graduations down the center (you may have to focus the eyepiece to clearly see the graduations). The upper portion of the field should be blue, while the lower portion should be white. (The pictures showed here and showed in step 3. & step 4 are only as reference, The right specific scale is listed in the product.)



Step 3.

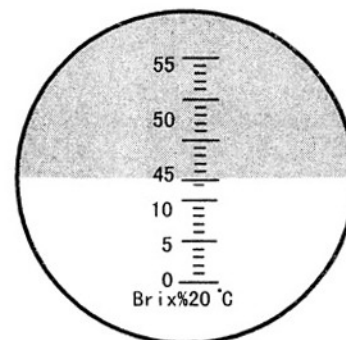
Using distilled water or calibration liquid as a sample, look into the eyepiece and turn the Calibration Screw until the boundary between the upper blue field and the lower white field meet exactly on the zero scale, such as showed in the picture. That is the end of calibration. Make sure ambient room temperature is correct for the solution you are using (20°C for our solution that is 68°F). When working temperature of the room or the environment (not the sample) changes by more than 5°F, we recommend recalibrating to maintain accuracy and reproducibility.



If the instrument is equipped with Automatic Temperature Compensation system, the ambient working temperature of the room must be 20°C (68°F) whenever the instrument is recalibrated. Once calibrated, shifts in ambient temperature within the acceptable range (10°C–30°C) should not affect accuracy.

Step 4.

Do step 1. using the specimen of liquids which will be measured as the substitution of distilled water or calibration solution. Then do step 2 and step 3. When do step 3 again, you can take the reading where the boundary line of blue and white cross the graduated scale. The scale will provide a direct reading of the Brix concentration.



Warning–Maintenance

1. Accurate measurement depends on careful calibration. Follow the instructions above closely. Note: Shifts in ambient room temperature of the prism prior to measurement. The prism and sample must be at the same temperature for accurate results.
2. Do not expose the instrument to damp working conditions, and do not immerse the instrument in water. If the instrument becomes foggy, water has entered the body. Call a qualified service technician or contact your dealer.
3. Do not measure abrasive or corrosive chemicals with this instrument. They can damage the prism's coating.
4. Clean the instrument between each measurement using a soft, damp cloth. Failure to clean the prism on a regular basis will lead to inaccurate results and damage to the prism's coating.
5. This is an optical instrument. It requires careful handling and storage. Failure to do so can result in damage to the optical components and its basic structure. With care, this instrument will provide years of reliable service.

In this direction will find a vision of the measurement technique:

<http://www.industrial-needs.com/measuring-instruments.htm>

NOTE: "This instrument doesn't have ATEX protection, so it should not be used in potentially explosive atmospheres (powder, flammable gases)."