xylem

INSTRUCTIONS
B+S CODE: 45-095 / VERSION 6A

Eclipse Refractometer

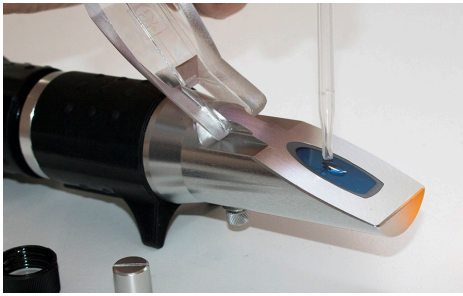
INSTRUCTIONS FOR GENERAL USE

Bellingham + Stanley

a xylem brand

Applying the sample to the refractometer

Lift the illuminator flap, drip the sample on to the prism then close the illuminator flap, alternatively use the dribble feature; drip sample into the top of the closed flap.



Use a plastic pipette to apply sample

Optical glass is relatively soft and care should be taken not to scratch the prism surface. Do not use metal spatulas or glass rods to apply samples but instead use softer materials such as plastic.

The Eclipse can also be used for testing solid substances such as apples, melons, grapes, sugar beet and potatoes. Cut a slice of the sample about 2mm thick and slightly smaller than the prism area. With the flap lifted, apply the slice to the surface of the prism taking care to obtain a good contact.

Taking a reading

Hold the instrument up to a suitable light source and look through the eyepiece. Rotate the eyepiece to focus the scale.

Take a reading from the scale at the border of the light and dark areas. If the scale is completely light then the sample concentration may be too high for the instrument range.

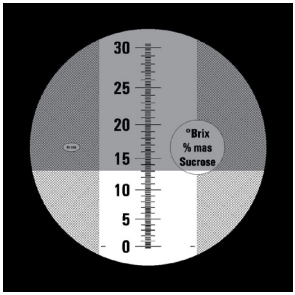


Illustration of an Eclipse Refractometer Scale

Cleaning the prism

Thoroughly clean the prism after use with water or other suitable solvent and dry with clean tissue.

The prism surface could be damaged by strong alkalis or acids if left in contact for long periods of time.

Clean the prism with water and a clean tissue or cloth

Clean samples from the prism as soon as practicable.

Wiping the prism surface occasionally with alcohol will remove any build-up of oils left from the samples.

Fitting an illuminator flap

Should the illuminator plate become damaged or lost, simply replace it by clipping a new one in place.

Replacing the illuminator flap

Adjusting the Calibration

Eclipse refractometers are calibrated to read correctly at 20°C.

The refractive index of the measured sample will vary with temperature and the calibration should be adjusted to take account of this prior to taking any readings.

Calibration & Temperature Correction

For low range models able to measure water

1. Stabilise the instrument at ambient temperature.
2. Apply distilled water to the prism and adjust the reading to zero.
3. Sample readings will then be correct at the ambient temperature.

Turn to adjust

For fixed calibration or high Brix models not able to measure water

1. Unscrew the protective cap.
2. Turn the knurled screw to adjust the readings.
3. Replace the protective cap.

Unscrew cap

⚠ Attention

These refractometers are precision optical instruments and should be handled with care.

Do not drop or subject them to sharp knocks.

Always check the Safety Data and specifications for the samples before applying them to the refractometer.

When applying samples to the prism which are likely to cause harm to skin or eyes, wear appropriate protective clothing and glasses (PPE).

The material of the hinged lid is made of polycarbonate, which can react with a series of concentrated acids and bases and is soluble in various organic solvents. Avoid contact with acetone and certain aromatic hydrocarbons. Review the specifications of the samples before application.

If the flap should become damaged, a replacement can be clipped on easily – part number 45-003 (pack of 5).

Bellingham + Stanley assumes no liability for any loss or damage of any kind caused by the use of this instrument.

Precautions to improve accuracy

Make sure that the prism is cleaned and dried between each reading, using a little clean water at room temperature, and a soft tissue or cloth to dry.

Make sure the scale of the instrument is in sharp focus before taking readings, adjust the eyepiece if necessary.

Look at the quality of borderline obtained. Poor sharpness may indicate insufficient sample on prism, or temperature gradients across the prism, or that the prism was not properly cleaned and dried after the last reading.

If in doubt, clean and dry the prism, leave for a while, and repeat measurements from the start. Measuring the same sample twice in quick succession is a useful indication of the reliance that should be placed on the results obtained. Always clean the plastic illuminator plate when cleaning the prism.

More Information

Eclipse refractometers are Made in UK.

IP Rating: IP65 water resistant

Further information on CRM's and a full Eclipse User Guide in various other languages can be found on our website www.bellinghamandstanley.com

Suitable for these models

Code	Range
45-01	0 – 15 °Brix
45-02	0 – 30 °Brix
45-03	0 – 50 °Brix
45-05	45 – 80 °Brix
45-06	72 – 95 °Brix
45-08	28 – 65 °Brix
45-26	0 – 30% Starch
45-27	10 – 30% Water in Honey
45-81	0 – 50 °Brix (low volume)
45-82	45 – 80 °Brix (low volume)
45-41	1.33 – 1.42 Refractive Index
45-44	0 to -40°C Antifreeze
45-46	0 – 60% Vol. Antifreeze
45-65	0 – 28% Salinity (NaCl)
45-66	1.33 – 1.42 RI (Aviation) - fixed calibration at 20°C

Certificate of Conformity

This Eclipse refractometer was calibrated and tested by Bellingham + Stanley and has been found to meet the published specifications for this instrument.

For the refractometer to continue to operate within our specifications, it should be kept in clean condition and well maintained in accordance with the user guide.

This certificate implies no responsibility by Bellingham + Stanley with regard to the accuracy of the instrument after the date of examination at Bellingham + Stanley.

WATER IP65 RESISTANT

UK MADE

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1) The tissue in plants that brings water upward from the roots;
2) a leading global water technology company.

Xylem Analytics' global brands have been leaders in the laboratory instrumentation market for decades, and are relied upon every day across more than 150 countries. Working in true partnership with our clients, we listen, learn and adapt to individual needs, offering deep application expertise built upon our long history of innovation in instruments and services. Our solutions for analysis, measurement and monitoring help enable many of today's modern laboratories and industrial processes, and provide our customers the trusted and high performing solutions they need to succeed.

Xylem Analytics is part of Xylem Inc., a global company focused on solving the world's most challenging and fundamental water issues. As accurate analysis is crucial to the water industry, Xylem Analytics taps its diverse product brands for leadership in that field and beyond, providing the best laboratory and field monitoring instrumentation across a wide variety of industries.

For more information on how Xylem can help you, go to www.xylem.com

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Let's Solve Water

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