REFRACTOMETERS

REFRACTOMETERS FOR SUGAR SOLUTIONS

The refractive index of a sugar solution changes with its concentration, so refractometers can provide a quick measurement of this using just a drop of liquid as a sample. This means you can make multiple checks during the production of your wort without having to draw off and cool a sample large enough for a hydrometer.

OPTICAL REFRACTOMETERS

The Eclipse refractometers are manufactured by Bellingham + Stanley in the UK to the highest specification using only the best materials and optical components. All instruments are supplied with a soft carrying case and instructions for use. These reliable and robust refractometers are sealed against the ingress of water with IP65 construction, so they can be used in the harshest of environments. The large body housing and rubber handgrip make the instrument easy to handle.

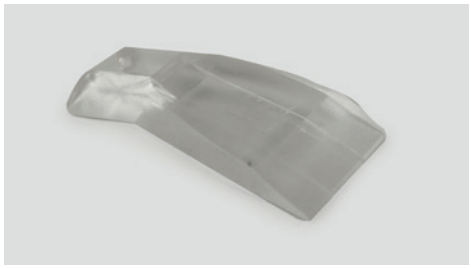
Special features make measurements easy and reliable: Simple zero adjust with lock - Shaded view with bright display for maximum distinction - High precision, clear scale - Easy-clean prism - Unique sample 'dribble feed' feature - Anti-roll supports

Product Code	Range	Price
BS4501	0 to 15% Brix in 0.1%	£250.00
BS4502	0 to 30% Brix in 0.2%	£250.00
BS4503	0 to 50% Brix in 0.5%	£250.00
BS4508	28 to 65% Brix in 0.2%	£250.00
BS4522	10 to 135 Zeiss in 1	£270.00

SPARE ILLUMINATOR FLAP FOR ECLIPSE REFRACTOMETER

The eclipse refractometers have a push-on prism flap which can be easily replaced if broken.

PRODUCT CODE: BS45003 PRICE: £12.00

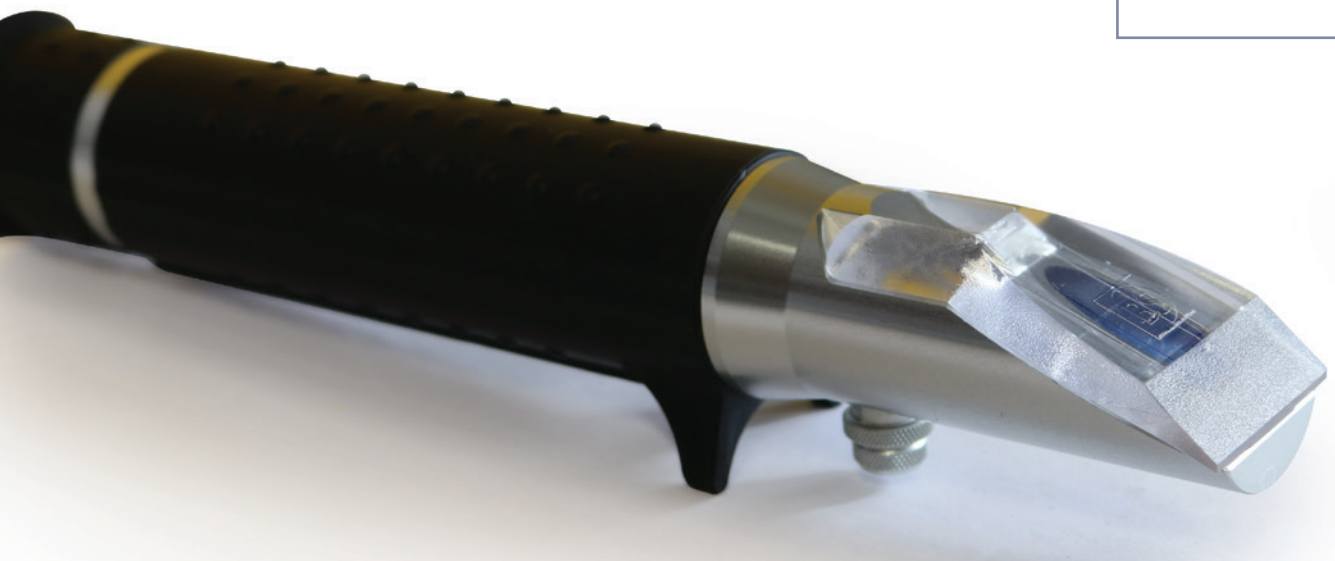


WHEN TO USE A REFRACTOMETER INSTEAD OF A HYDROMETER

Refractometers and hydrometers are very different instruments and will only read the same in a very specific set of circumstances. This is because the only thing a hydrometer can measure is density (or specific gravity), and the only thing a refractometer can measure is refractive index. The Brix or sucrose equivalent SG scales are based on the refractive index of a pure solution of sucrose in water. In such a solution tested at 20°C, the readings should correspond exactly to the readings of a hydrometer.

When used in a solution that is not just sucrose and water, such as wort or beer, the refractometer SG reading will be different from the hydrometer reading. Wort is fairly similar to a sucrose solution, so the readings will be fairly similar to those of a hydrometer and a simple wort correction factor can be used if you want the most accurate refractometer SG determination. You can determine your wort correction factor for each recipe by cooling a typical wort sample to 20°C and comparing the hydrometer and refractometer readings.

Once fermentation has started introducing alcohol into the mix, the refractometer SG readings will be radically different from those of a hydrometer.



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DIGITAL REFRACTOMETERS

The OPTi digital handheld refractometer is manufactured in the UK and is a premium quality instrument suitable for use in the harshest of environments. Displays up to three active scales from an onboard library of 50 scales. Automatic Temperature Compensation (ATC) is available for the sugar scales used in brewing. By default the refractometer is set to read the Brix scale, and we can supply the refractometer with any of the other scales pre-loaded on request. A selection of the relevant scales for brewing are shown below.

PRODUCT CODE: BS3801 **PRICE: £290.00**

Brewing Scales	Range	Accuracy
°Brix (sucrose)	0-95	±0.2°
°Plato (dissolved solids)	0-30	±0.2°
°Zeiss (ABV determination)	10-135	±0.5%
SG (sucrose equivalent)	1.000–1.120	±0.001

USING A REFRACTOMETER AND HYDROMETER TO ESTIMATE ALCOHOL CONTENT

It is not possible for either a refractometer or a hydrometer to directly measure the alcohol content of a finished beer or wine, however using readings from both instruments can give you a good estimate. Because sugar and alcohol have different effects on the density and refractive index of a solution, measuring both will let you estimate the proportion of alcohol in the solution.

The refractometer Zeiss scale can be used along with a final gravity reading to determine ABV using the calculator on the Bellingham and Stanley website, or the simple table supplied with our kit, so for example beer with a final SG of 1.008 on a hydrometer and a Zeiss reading of 38 on a refractometer would have 5.6% ABV. An accuracy of 0.5% is usually claimed for this method, although with an accurate hydrometer and a refractometer as good as the OPTi Digital, it is likely to be a slightly more accurate than that.

ABV TESTING KIT WITH ZEISS REFRACTOMETER

The complete kit consists of an optical or digital refractometer measuring the Zeiss scale, a hydrometer with a gravity range of 980 to 1050 in 1° gravity divisions, a glass 100ml measuring cylinder and pipettes for the refractometer samples. The kit is supplied in a sturdy plastic case, and all individual parts are available separately.

Product Code	Refractometer	Price
B0151/O	Optical	£355.00
B0151/D	Digital	£375.00

PARTS FOR ABV KIT

Product Code	Range	Price
B0151/C	Carrying Case for B0151 Kit	£30.00
B0151/CH	Chart and Instructions	£5.00
B0151/H	Saccharometer for B0151 Kit	£38.00
B1524/0100	100ml Cylinder for B0151 Kit	£14.10
B0151/P	Plastic Pipette (10 pieces)	£1.00
BS4522	Optical Zeiss Refractometer	£270.00
BS3801	Digital Zeiss Refractometer	£290.00