SUGAR/BRIX REFRACTOMETER

300001/300002

INSTRUCTION MANUAL

SPER
SCIENTIFIC

TABLE OF CONTENTS

INTRODUCTION

Your portable refractometer is a precision optical instrument which is designed to measure the concentration of sugar in aqueous solutions. It utilizes the standardized Brix scale which is accurate and easy to read. Its light weight and ergonomic design make it convenient for both field and laboratory applications. It is excellent for quality assurance, process control, and scientific research.

The refractometer operates on the principle that, as the concentration or density of a solution increases, its refractive index changes proportionately. The refractive angle measured by your refractometer registers on the scale. The larger the concentration of sugar in solution the higher the reading on the scale.

PANEL DESCRIPTION

1. Prism
2. Cover plate
3. Calibration screw
4. Barrel with textured grip
5. Eyepiece adjustment ring

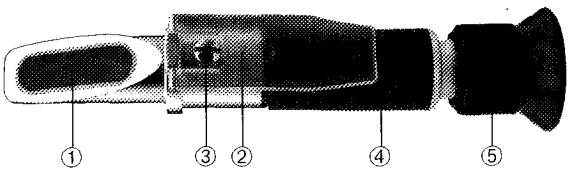


Fig. 1

OPERATING PROCEDURES

1. Aim the front end of the refractometer toward a light source and adjust the eye piece (5) until the scale is in focus.

2. Adjustment of the null (reference point). Model #300001
   - A - Open the cover plate (2).
   - B - Place a few drops of distilled water on to prism platform (1).
   - C - Close cover plate (2).
   - D - Rotate the calibration screw (3) until the dark and light boundary line coincides with the zero line.

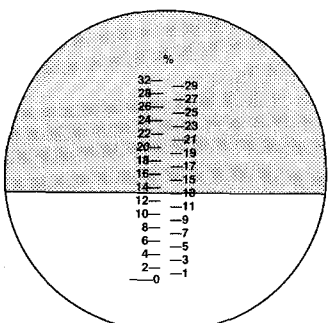
   Adjustment of the null (reference point). Model #300002
   - A - Open the cover plate (2).
   - B - Place a few drops of precise 28% Brix solution (included) on to the prism platform (1).
   - C - Close cover plate (2).
   - D - Rotate the calibration screw (3) until the dark and light boundary line coincides with th 28% concentration line.

3. Open the cover plate and clean prism, with a soft cloth to remove any surface residue.

4. Place a few drops of solution to be tested on the prism platform and close the cover plate.

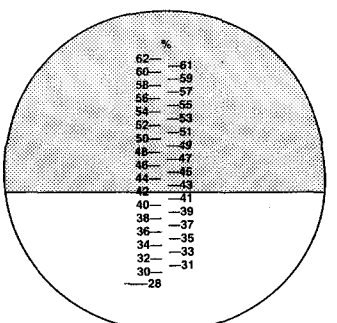
5. The boundary line will show the percent sugar contained in the sample on the scale. See Fig. 2

6. The temperature of the null reference liquid should be at the same temperature as the sample solution. For variations in temperature during use, the null point should be recalibrated once every 30 minutes.



Model #300001 illustrating a 13% Brix reading

Fig. 2



Model #300002 illustrating a 42% Brix reading

PRECAUTIONS

1. Do not dip or run unit under water. Avoid letting water seep into the internal section of the refractometer.
2. Store the refractometer in a dry, clean, and non-corrosive environment. Avoid strong shocks.
3. If reasonable care is applied to your refractometer the reliability, precision and optical performance will not change.
4. After sample measurement is complete clean the prism with a soft cloth until the surface is clean.

SPECIFICATIONS

MODEL	RANGE	RES.	ACCURACY	SIZE	WEIGHT	MAGNIFICATION
#300001	0-32%	0.2%	±0.2%	6 3/4" x 1 1/2" dia.	6 oz.	3.4X
#300002	28-62%	0.2%	±0.2%	6 1/4" x 1 1/2" dia.	6 1/2 oz.	2.7X

STANDARD ACCESSORIES

Carrying case, 28% Brix solution (#300002 only), Distilled Water (300001 only), Transfer pipette, Instruction manual,, Registration card

WARRANTY

Sper Scientific warrants this product against defects in materials or workmanship for a period of **five (5) years** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover damage resulting from accident, misuse, or abuse of the product or batteries. In order to obtain warranty service, simply ship the unit postage prepaid to: Sper Scientific, Ltd., 7720 E. Redfield, Suite 7, Scottsdale, Arizona 85260.

Please note: The defective unit must be accompanied by a description of the problem and your return address.

Please be sure to return your warranty registration card within ten (10) days of purchase.