

**Sugar/Brix
Refractometer**

0 - 32%

300001

28 - 62%

300002

Instruction Manual

SPER
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Environmental Measurement Instruments

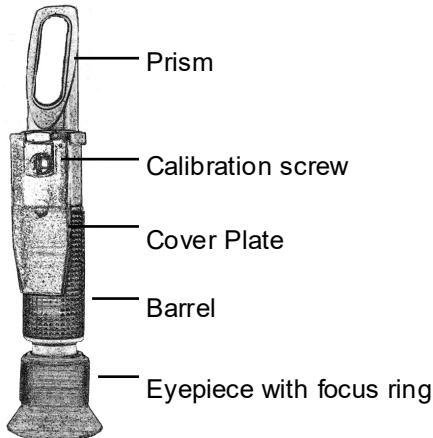
CONTENTS

INTRODUCTION	2
DESCRIPTION.....	2
OPERATING PROCEDURES.....	3
PRECAUTIONS	4
SPECIFICATIONS	4
WARRANTY	4

INTRODUCTION

Your portable refractometer is a precision optical instrument designed to measure the concentration of sugar in aqueous solutions. It utilizes a Brix scale that is accurate and easy to read. It is excellent for quality assurance, process control requirements, and research. Refractometers operate 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.

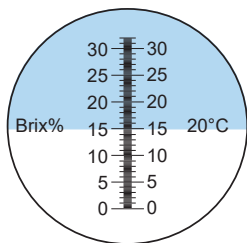
DESCRIPTION



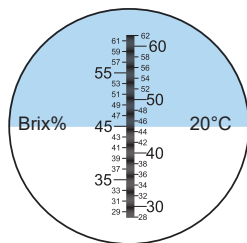
OPERATING PROCEDURE

1. With the **COVER PLATE** open, clean the **PRISM** with a soft cloth to avoid scratching the surface.
2. Aim the refractometer toward a light source and rotate the **EYEPIECE** to obtain the clearest focus.
3. Zero Point Calibration:
 - A. Open the **COVER PLATE**.
 - B. Apply a few drops of the included calibration solution onto the **PRISM** platform.
 - C. Close the **COVER PLATE**.
 - D. Turn the **CALIBRATION SCREW** until the dark and light boundary line coincides with the bottom line of the scale. The bottom line is 0 for 300001 Model and 28 for 300002 Model.
4. Carefully dry the prism platform and **COVER PLATE**.
5. Place a few drops of the test solution on the prism and close the **COVER PLATE** so the solution spreads evenly on the prism.
6. Aim the front of the refractometer towards the light source and focus the eyepiece on the boundary line.
7. The boundary line indicates the concentration of sugar in the test sample at 20°C.

15% Sample (300001)



45% Sample (300002)



8. After use, clean the prism with distilled water and a cloth to remove any residue.
9. The temperature of the zero point calibration should be at the same temperature as the test solution. For variations in temperature the zero point should be adjusted once every 30 minutes.

PRECAUTIONS

Never submerge the unit, and do not let liquid seep into the unit's body. Clean the refractometer after each use with a soft cotton cloth. Do not scratch surface of the prism. Store in a dry, clean, and non-corrosive environment. Avoid strong impacts.

IMPORTANT NOTE...

This Sugar/Brix Refractometer is intended for solutions containing sugar solute. Any test solutions that contain salt will affect the reading.

SPECIFICATIONS

Model	300001	300002
Range	0-32%	28-62%
Resolution	0.2%	
Accuracy	±0.2%	
Size	6 3/4" x 1 1/2" (171 x 38 mm)	6 1/4" x 1 1/2" (159 x 38 mm)
Weight	3.1 oz. (89 gr.)	3.2 oz. (90 gr.)
Calibration Solution	Distilled Water	28% Brix
Accessories	Screwdriver, Carrying Case, Transfer Pipette, Manual.	

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **five (5) year** 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 probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will break the waterproof seal and void the warranty. To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.

8281 E. Evans Rd., Suite #103
Scottsdale, AZ 85260
(480) 948-4448

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.