6. WARRANTY STATEMENT

Fisher Scientific warrants this product against defects in materials and 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 Fisher 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 void the warranty.

SPER SCIENTIFIC

Environmental Measurement Instruments

Sugar / Brix Optical Refractometer

PRODUCT USER MANUAL

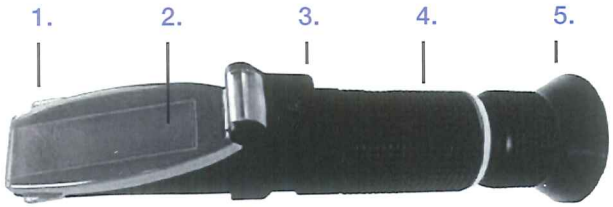
SPER SCIENTIFIC

Environmental Measurement Instruments

1. PRODUCT INTRODUCTION

Your portable refractometer is a precision optical instrument designed to measure the concentration of sugar in aqueous solutions. It utilizes a percentage 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.

2. PRODCUT DESCRIPTION



1. Cover Plate
2. Prisim
3. Calibration Screw
4. Barrel
5. Eyepiece & focus ring

3. TECHNICAL SPECIFICATIONS

Model	Range	Resolution	Accuracy
FS1394623	45-82%	0.5%	±0.5%
FS1394624	58-90%	0.5%	±0.5%
Size / Weight	6.75" x 1.5" (165 x 38 mm), 3.1 oz. (86 g)		
Accessories	Screwdriver, Carrying Case, Transfer Pipette, Dioptric Oil, Reference Block		

4. MAINTENANCE AND SAFETY INSTRUCTIONS

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

5. OPERATING PROCEDURES

1. With the COVER PLATE open, clean the PRISM with a soft cloth to avoid scratching the surfaces.
2. Aim the refractometer toward a light source and rotate the EYEPIECE to obtain the clearest focus.
3. Adjustment of the null (reference point):
   a. Open the COVER PLATE.
   b. Apply a few drops of dioptric oil onto the clear side of the enclosed reference block.
   c. "Stick" reference block with the oil onto prisim (oil side down) and press it lightly so it does not slide.
   d. Turn the CALIBRATION SCREW until the dark and light boundary line coincides just above 78% on the sugar scale.
4. Carefully dry the prism platform and the cover.
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 of the light and dark hemispheres.
7. The boundary line indicates the concentration of sugar in the test sample.
8. After use, clean prism with a cloth and remove any residue.
9. The temperature of the null reference liquid should be at the same temperature as the sample solution. For variations in temperature the null point should be adjusted once every 30 minutes.