

Salt Refractometer

300011

Instruction Manual

SPER
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Environmental Measurement Instruments

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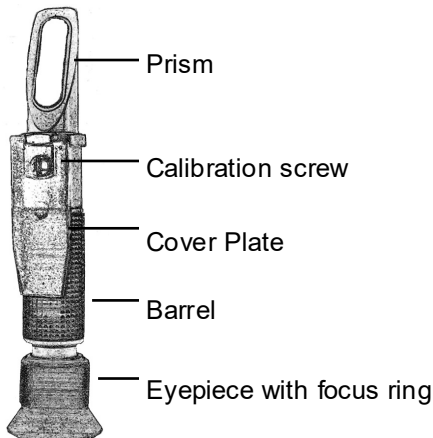
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INTRODUCTION

Your portable refractometer is a precision optical instrument designed to measure the concentration of sugar in aqueous solutions. This unit features automatic temperature compensation (ATC) which makes manual temperature corrections unnecessary between 10 and 30°C. Its light weight, ergonomic design make it convenient for both field and laboratory applications. It is excellent for quality assurance, process control, and scientific research.

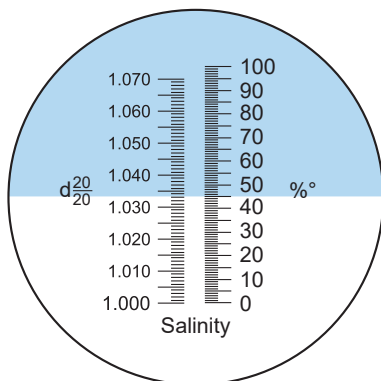
The refractometer operates on the principle that, as the concentration or density of a solution increases, its refractive index changes proportionately. The refractive angle measured by your refractometer registers on the scale. The larger the concentration of salt in solution, the higher the reading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

DESCRIPTION



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 pure distilled water 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.
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 salt in the test sample.



8. After use, clean prisms 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.

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 prisms. Store in a dry, clean, and non-corrosive environment. Avoid strong shocks.

SPECIFICATIONS

Range	0.0 ~ 100 ppt, 1.000 ~ 1.070 sg
Resolution	1.0 ppt, ± 0.001 sg
Accuracy	$\pm 1.0\%$ ppt, ± 0.001 sg
Size	6 3/4" x 1 1/2" (171 x 38 mm)
Weight	3.1 oz. (89 gr.)
Accessories	Screwdriver, Carrying Case, Transfer Pipette, Distilled Water, Instruction 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.