



# Handheld Refractometers

## X-Series Models

- **Largest & Sharpest Display Scale Available**
- **Patented “Zero-Ring” Requires No Calibration Tools**
- **Durable, Industrial Grade Design**

VEE GEE® X-Series Handheld Refractometers are exceptionally simple to operate and provide quick, accurate measurements for the concentration of nearly any aqueous solution.

**Easy to Use.** Operation consists of placing 1 or 2 drops of sample on the prism, closing the daylight plate over the sample, then looking through the focusable, cushioned-rubber eyepiece for the readings (see scale below left).

**Accurate.** Featuring the largest, easiest-to-read scale available with clear, sharp figures, screen shading, and incredible contrast. These features significantly enhance overall accuracy...even when several different operators use the instrument. All units feature rubber grips on the body, which block the transmission of hand heat to reduce temperature errors.

**Compact & Portable.** The small size of the X-Series models allows them to be used anywhere...the field, plant, or lab.

**Tool-Free Calibration.** The VEE GEE® patented “Zero-Ring” eliminates the hassle of using a separate tool for calibration. Simply place a few drops of distilled water or liquid standard (R.I. oil or prepared sucrose solution) on the prism, turn the built-in “Zero-Ring” until the shadowline is at the correct value of the liquid, and secure the set screw...that’s it!

**Durable.** The X-Series models feature rugged construction to provide years of reliable use. The prism is mounted in an all-metal housing which allows the sample and prism to reach temperature equilibrium quickly. Also feature non-roll stands to ensure that once the units are placed on a table or bench top, they won’t be prone to roll off the surface.

**Wide Selection of Scales & Ranges.** Choose from Brix, Salinity Refractive Index (nD), Coolant (freezing points of Ethylene & Propylene Glycol), Battery Charge Level, Urea and NaCl.

**Automatic Temperature Compensation (ATC).** Models BTX-1, BTX-20, STX-3, CTX-1, & CTX-2 feature ATC, which frees the user from having to re-calibrate in work environments with large temperature swings. The effective compensation range is 10-30 °C.

**Rubber Hood.** Houses the focusable lens and prevents light from entering through the eyepiece during use.

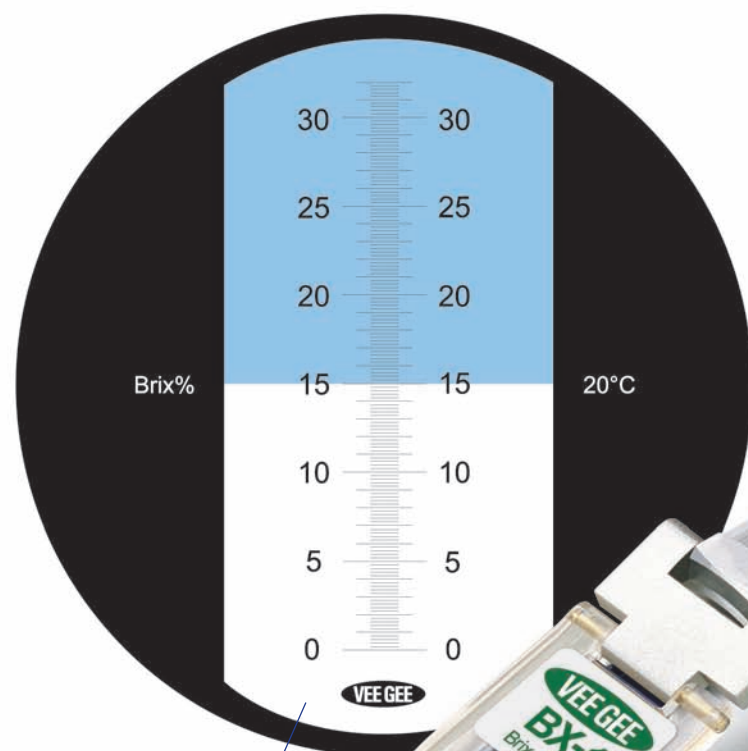
**Patented “Zero-Ring” For Calibration.**  
Quick, accurate, tool-free calibrations.

**Rubber Grip.** Refractometers are greatly influenced by temperature changes. The rubber grip guards against the user’s hand heat for accurate measurements.

**Non-Roll Stand.** Protects against damage to the instrument when set down between measurements.

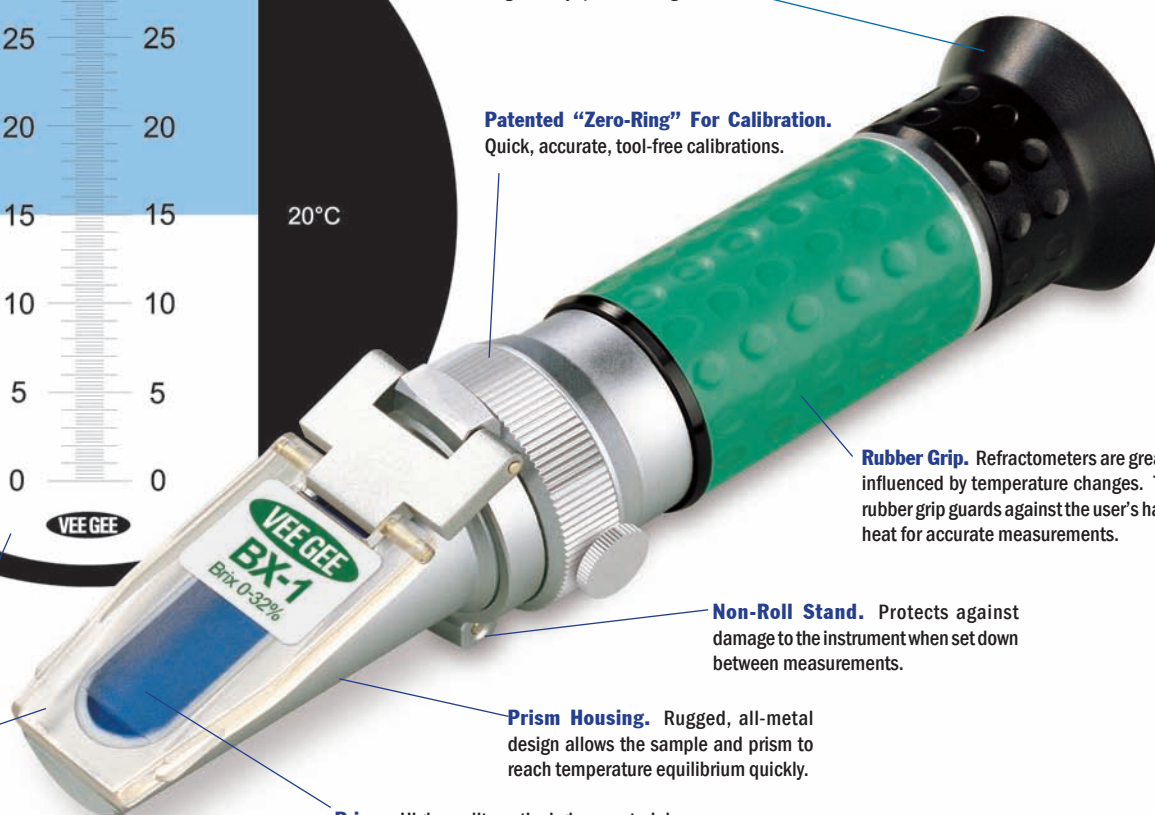
**Prism Housing.** Rugged, all-metal design allows the sample and prism to reach temperature equilibrium quickly.

**Prism.** High-quality optical glass material ensures consistently accurate readings.



**Scale.** The largest and sharpest scale display available on a handheld refractometer.

**Daylight Plate.** Exceptionally durable with a double-hinge design allowing even thick samples to be easily measured.





# Handheld Refractometers

## All Models

|                         |                                                                                      |
|-------------------------|--------------------------------------------------------------------------------------|
| <b>Sample Type:</b>     | Transparent & Translucent                                                            |
| <b>Sample Quantity:</b> | >0.1ml                                                                               |
| <b>Prism:</b>           | Optical Glass                                                                        |
| <b>Prism Housing</b>    | Copper Alloy w/ Nickel-Chrome Coating                                                |
| <b>Supplied With:</b>   | Carrying Case (1 ea.), Plastic Transfer Pipet (1 ea.),<br>Instruction Manual (1 ea.) |



## X-Series Specifications

| Cat. No. | Model  | Scale                                                                                                       | Range                                   | Resolution         | Accuracy            | ATC | Dimensions                | Weight |
|----------|--------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------|---------------------|-----|---------------------------|--------|
| 43001    | BX-1   | Brix                                                                                                        | 0-32%                                   | 0.2%               | ±0.2%               | No  | 40(W) x 165(L) x 40(H) mm | 240g   |
| 43002    | BTX-1  | Brix                                                                                                        | 0-32%                                   | 0.2%               | ±0.2%               | Yes | 40(W) x 165(L) x 40(H) mm | 240g   |
| 43003    | BX-2   | Brix                                                                                                        | 28-62%                                  | 0.2%               | ±0.2%               | No  | 40(W) x 150(L) x 40(H) mm | 235g   |
| 43005    | BX-3   | Brix                                                                                                        | 60-92%                                  | 0.2%               | ±0.2%               | No  | 40(W) x 140(L) x 40(H) mm | 230G   |
| 43007    | BX-4   | Brix                                                                                                        | 45-82%                                  | 0.2%               | ±0.2%               | No  | 40(W) x 140(L) x 40(H) mm | 230G   |
| 43009    | BX-10  | Brix                                                                                                        | 0-10%                                   | 0.1%               | ±0.1%               | No  | 40(W) x 185(L) x 40(H) mm | 285G   |
| 43011    | BX-20  | Brix                                                                                                        | 0-20%                                   | 0.1%               | ±0.1%               | No  | 40(W) x 185(L) x 40(H) mm | 285g   |
| 43012    | BTX-20 | Brix                                                                                                        | 0-20%                                   | 0.1%               | ±0.1%               | Yes | 40(W) x 185(L) x 40(H) mm | 285g   |
| 43015    | BX-50  | Brix                                                                                                        | 0-50%                                   | 0.5%               | ±0.5%               | No  | 40(W) x 145(L) x 40(H) mm | 230g   |
| 43017    | BX-90  | Brix                                                                                                        | 0-90%                                   | 0.2%               | ±0.2%               | No  | 35(W) x 200(L) x 35(H) mm | 650g   |
| 43033    | SX-1   | NaCl                                                                                                        | 0-10%                                   | 0.1%               | ±0.1%               | No  | 40(W) x 185(L) x 40(H) mm | 285g   |
| 43035    | SX-2   | NaCl                                                                                                        | 0-28%                                   | 0.2%               | ±0.2%               | No  | 40(W) x 165(L) x 40(H) mm | 240g   |
| 43036    | STX-3  | Salinity<br>Specific Gravity of Seawater                                                                    | 0-100‰<br>1.000-1.070                   | 1.0‰<br>0.001      | ±1.0‰<br>±0.001     | Yes | 40(W) x 185(L) x 40(H) mm | 285g   |
| 43053    | NDX-1  | Refractive Index (nD)                                                                                       | 1.333-1.520                             | 0.001              | ±0.001              | No  | 35(W) x 200(L) x 35(H) mm | 650g   |
| 43055    | NDX-2  | Refractive Index (nD)                                                                                       | 1.425-1.520                             | 0.001              | ±0.001              | No  | 40(W) x 140(L) x 40(H) mm | 230g   |
| 43062    | CTX-1  | Freezing Point of Propylene Glycol<br>Freezing Point of Ethylene Glycol<br>Specific Gravity of Battery Acid | -50 to 0°C<br>-50 to 0°C<br>1.10-1.40   | 1°C<br>1°C<br>0.01 | 1°C<br>1°C<br>±0.01 | Yes | 40(W) x 150(L) x 40(H) mm | 235g   |
| 43064    | CTX-2  | Freezing Point of Propylene Glycol<br>Freezing Point of Ethylene Glycol<br>Specific Gravity of Battery Acid | -50 to 32°F<br>-60 to 32°F<br>1.10-1.40 | 2°F<br>2°F<br>0.01 | 2°F<br>2°F<br>±0.01 | Yes | 40(W) x 150(L) x 40(H) mm | 235g   |
| 43071    | URX-60 | Urea                                                                                                        | 0-60%                                   | 0.5%               | ±0.5%               | No  | 40(W) x 145(L) x 40(H) mm | 225g   |