VEE GEE

Handheld Refractometers

VEE GEE ANALYTICAL INSTRUMENTS 1 YEAR WARRANTY

X-Series Models

- **Largest & Sharpest Display Scale Available**
- **Exclusive "Zero-Ring" Requires No Calibration Tools**
- **Durable, All-Metal 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 the 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 the instrument is used by several different operators. All units feature rubber grips on the body, which block the transmission of hand heat to reduce temperature errors.

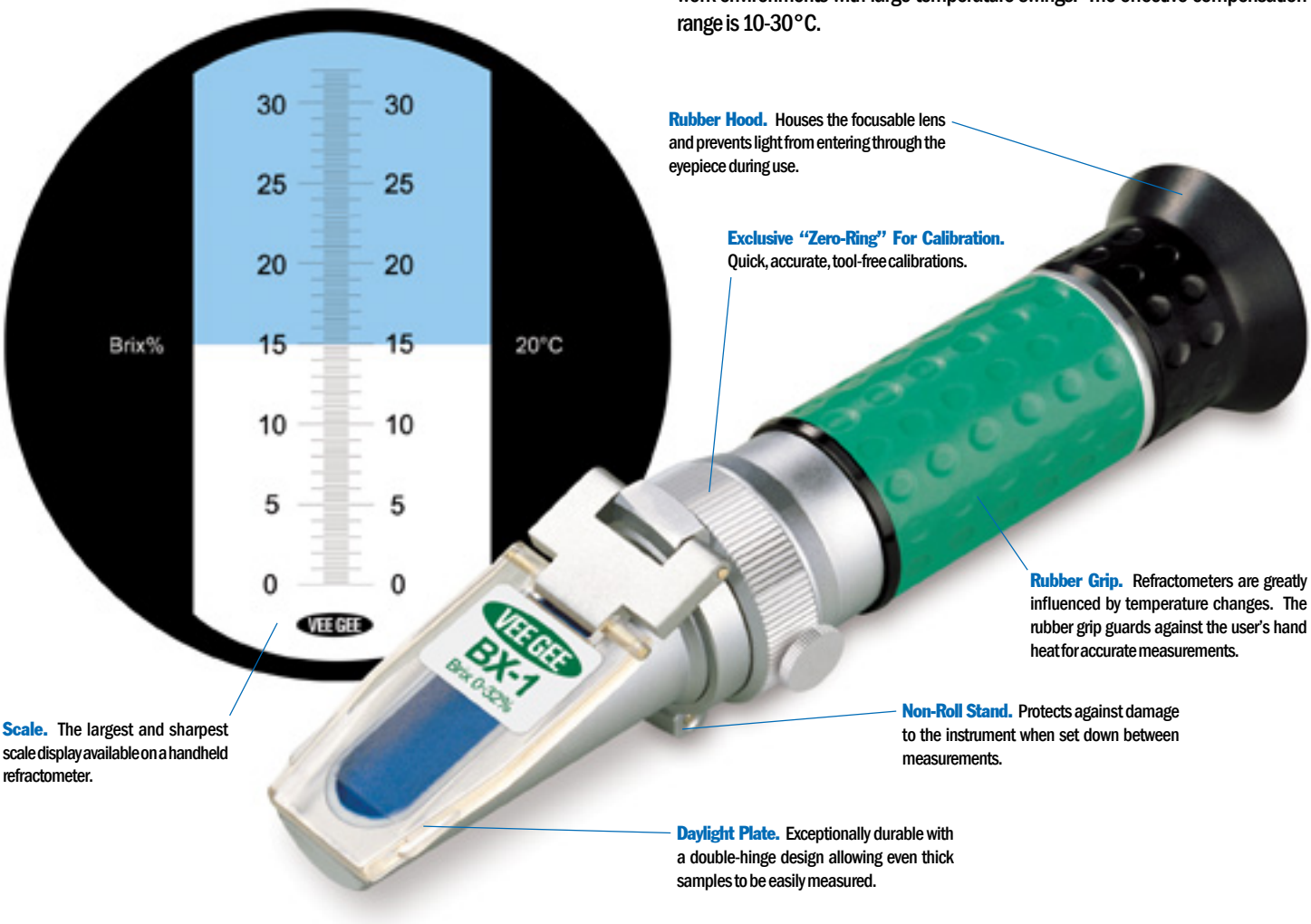
Compact & Portable. The small size of the X-Series models allows them to be used anywhere...whether it's in the field, plant, or lab.

Tool-Free Calibration. The VEE GEE exclusive "Zero-Ring" eliminates the hassle of using a separate tool for 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 benchtop, they won't be prone to roll off the surface.

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

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.

Exclusive "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.

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

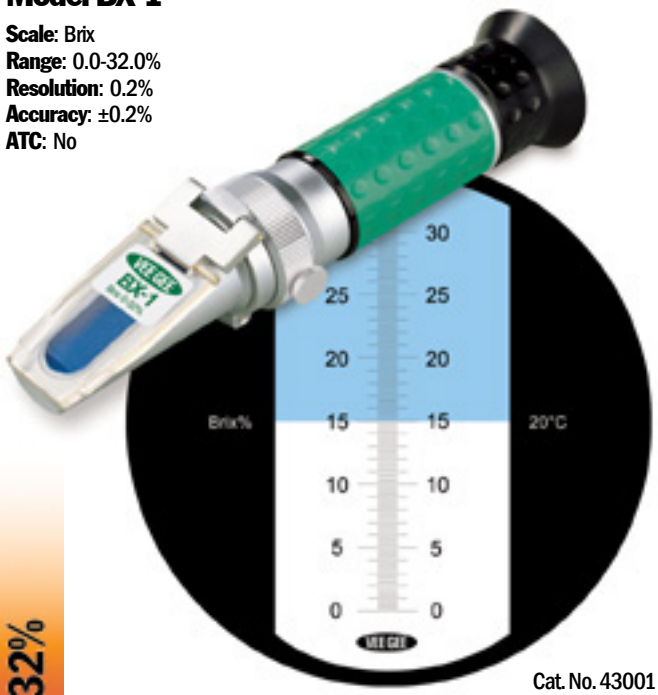
Non-Roll Stand. Protects against damage to the instrument when set down between measurements.

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

VEE GEE

Model BX-1

Scale: Brix
Range: 0.0-32.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: No



Cat. No. 43001

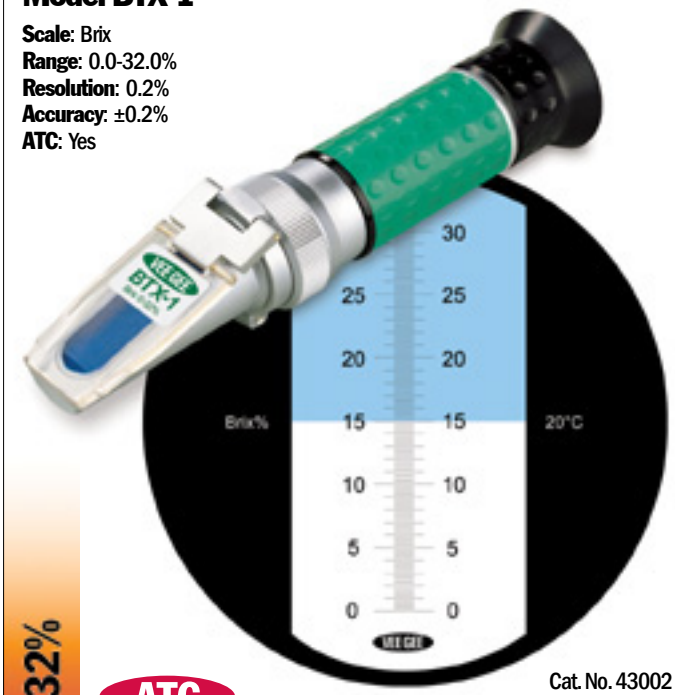
Brix 0-32%

Samples & Applications
Fruit ● Juices ● Soft Drinks ● Coffee/Cocoa Beverages ● Lactic Beverages
Puree ● Soup ● Industrial Fluids ● Water-Soluble Detergents ● A.F.F.F.

VEE GEE

Model BTX-1

Scale: Brix
Range: 0.0-32.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: Yes



ATC

Cat. No. 43002

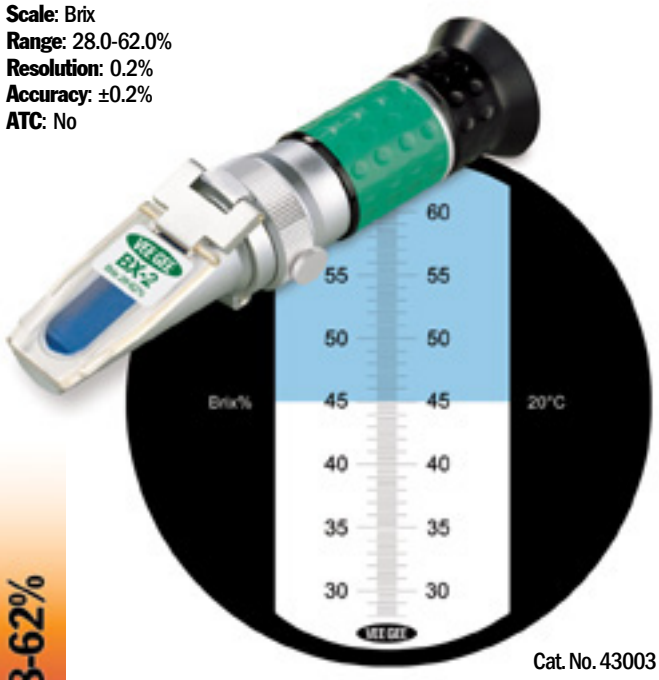
Brix 0-32%

Samples & Applications
Fruit ● Juices ● Soft Drinks ● Coffee/Cocoa Beverages ● Lactic Beverages
Puree ● Soup ● Industrial Fluids ● Water-Soluble Detergents ● A.F.F.F.

VEE GEE

Model BX-2

Scale: Brix
Range: 28.0-62.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: No



Cat. No. 43003

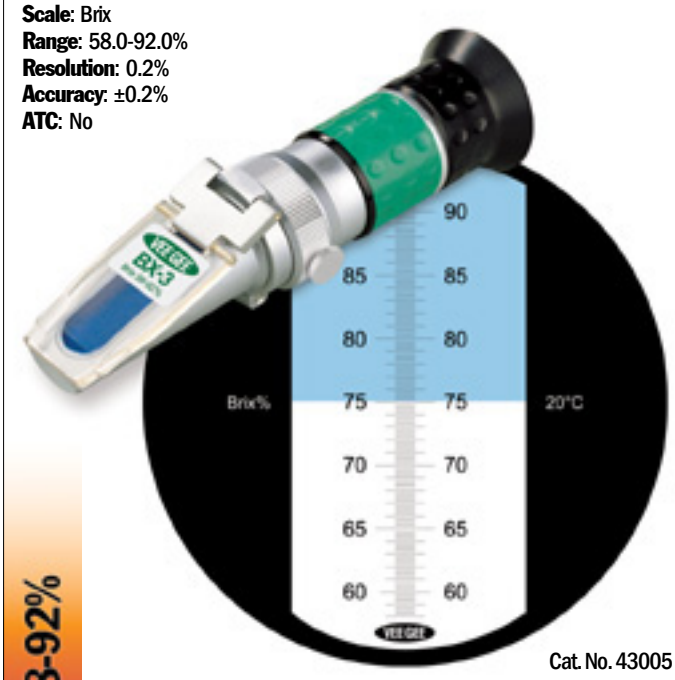
Brix 28-62%

Samples & Applications
Concentrated Fruit Juices ● Soft Drink Syrup ● Canned Goods ● Ketchup

VEE GEE

Model BX-3

Scale: Brix
Range: 58.0-92.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: No



Cat. No. 43005

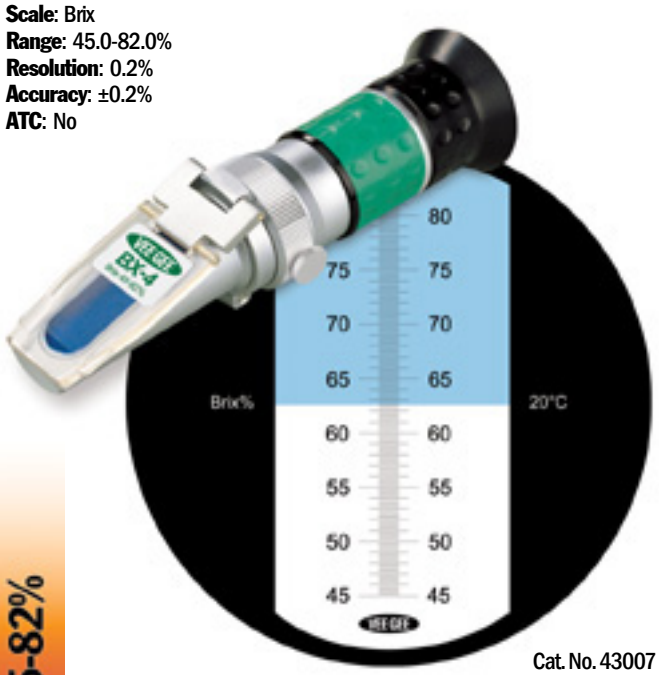
Brix 58-92%

Samples & Applications
Jam ● Jelly ● Marmalade ● Malt ● Honey ● Maple Syrup

VEE GEE

Model BX-4

Scale: Brix
Range: 45.0-82.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: No



Cat. No. 43007

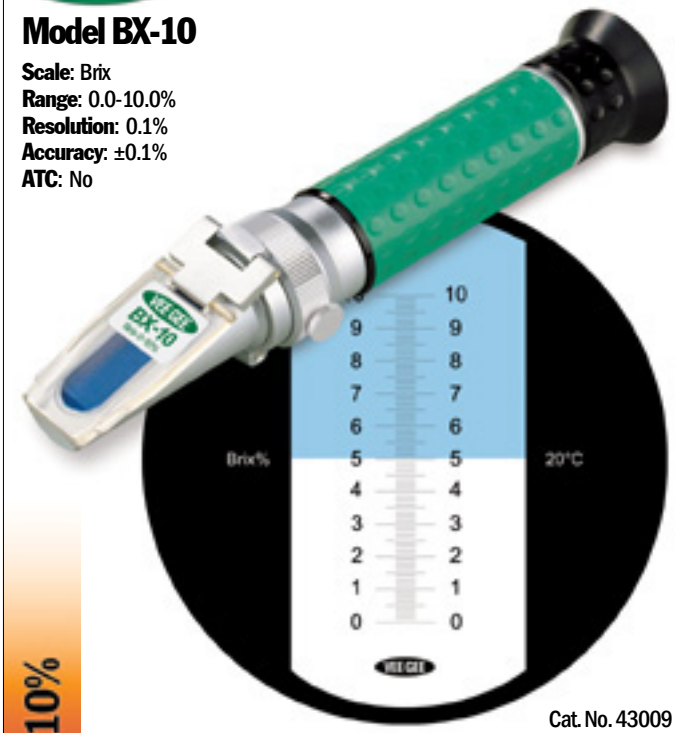
Brix 45-82%

Samples & Applications
High-Concentration Juices • Condensed Milk • Liquid Sugar • Jam

VEE GEE

Model BX-10

Scale: Brix
Range: 0.0-10.0%
Resolution: 0.1%
Accuracy: ±0.1%
ATC: No



Cat. No. 43009

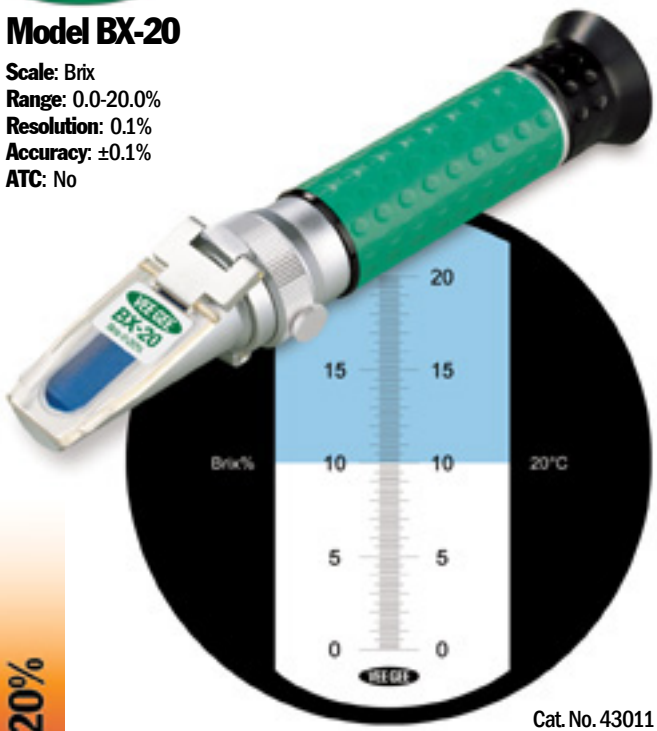
Brix 0-10%

Samples & Applications
Low-Concentration Juices • Low-Concentration Industrial Fluids

VEE GEE

Model BX-20

Scale: Brix
Range: 0.0-20.0%
Resolution: 0.1%
Accuracy: ±0.1%
ATC: No



Cat. No. 43011

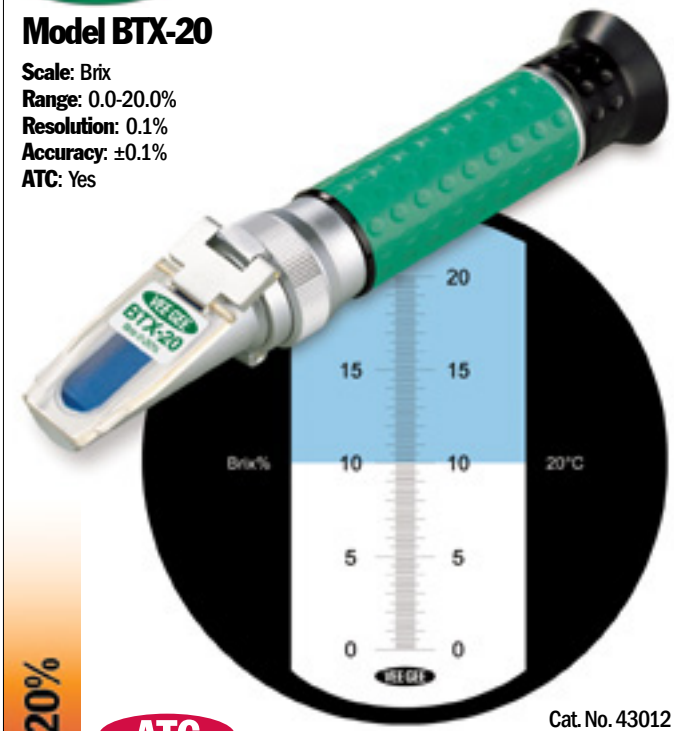
Brix 0-20%

Samples & Applications
Low-Concentration Juices • Soft Drink Post-Mix • Industrial Fluids

VEE GEE

Model BTX-20

Scale: Brix
Range: 0.0-20.0%
Resolution: 0.1%
Accuracy: ±0.1%
ATC: Yes



ATC

Cat. No. 43012

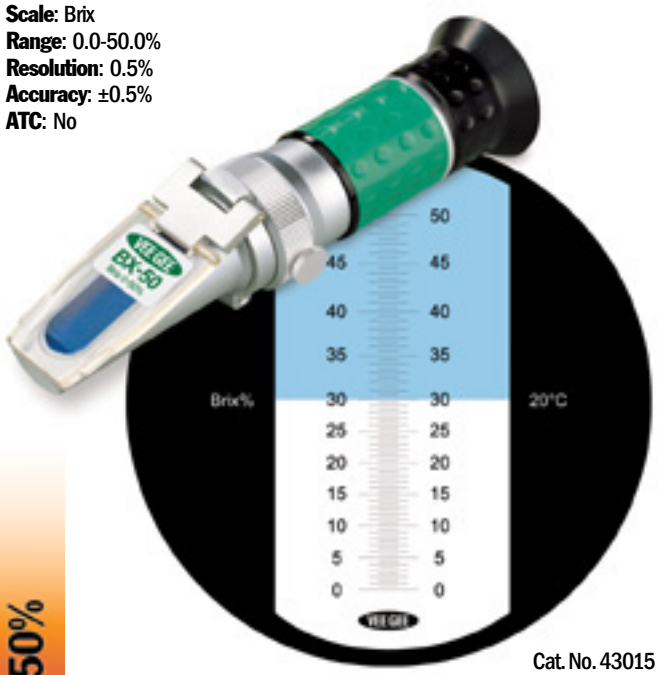
Brix 0-20%

Samples & Applications
Low-Concentration Juices • Soft Drink Post-Mix • Industrial Fluids

VEE GEE

Model BX-50

Scale: Brix
Range: 0.0-50.0%
Resolution: 0.5%
Accuracy: ±0.5%
ATC: No



Cat. No. 43015

Brix 0-50%

Samples & Applications
Juices • Sauce • Ketchup

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Model BX-90

Scale: Brix
Range: 0.0-90.0%
Resolution: 0.2%
Accuracy: ±0.2%
ATC: No

Cat. No. 43017

Brix 0-90%

Samples & Applications
Wide Range for Most Dissolved Solids Applications

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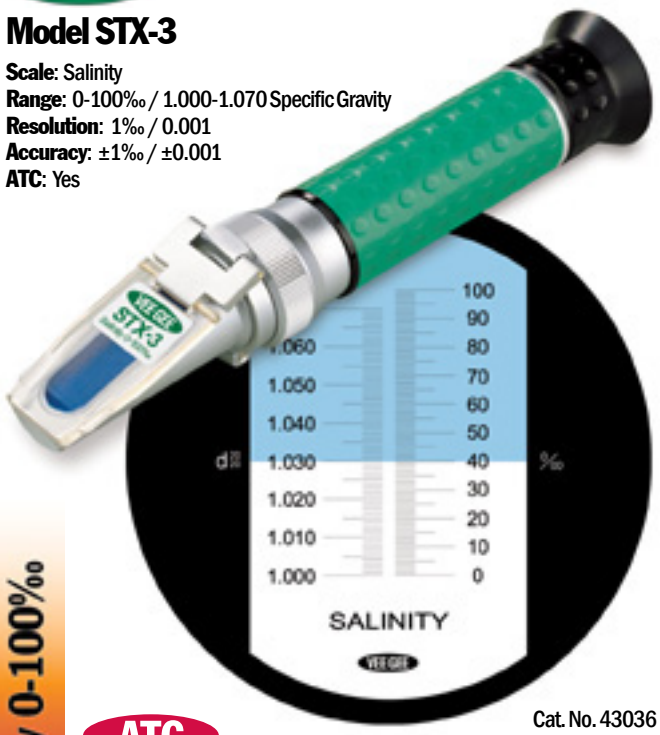
Model STX-3

Scale: Salinity
Range: 0-100‰ / 1.000-1.070 Specific Gravity
Resolution: 1‰ / 0.001
Accuracy: ±1‰ / ±0.001
ATC: Yes



Cat. No. 43036

ATC

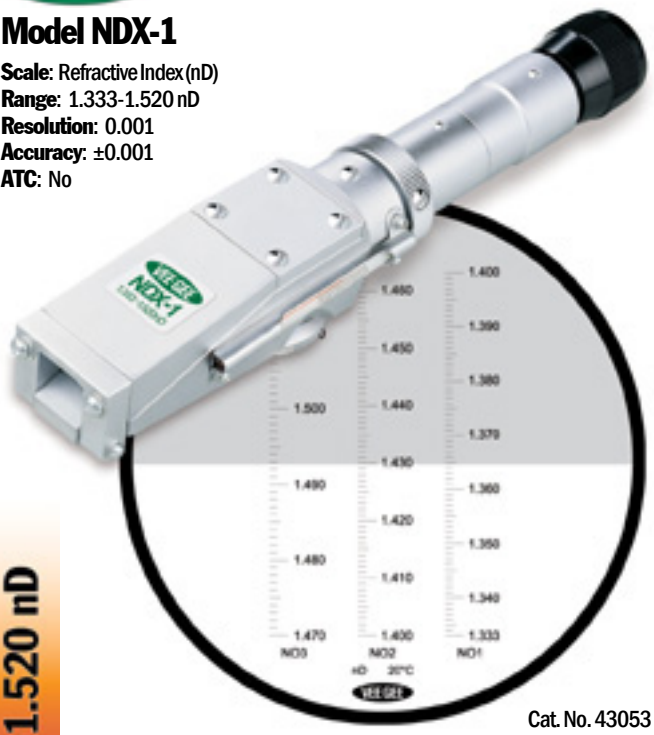
Salinity 0-100‰

Samples & Applications
Salt Concentration & Specific Gravity of Seawater

VEE GEE

Model NDX-1

Scale: Refractive Index (nD)
Range: 1.333-1.520 nD
Resolution: 0.001
Accuracy: ±0.001
ATC: No



Cat. No. 43053

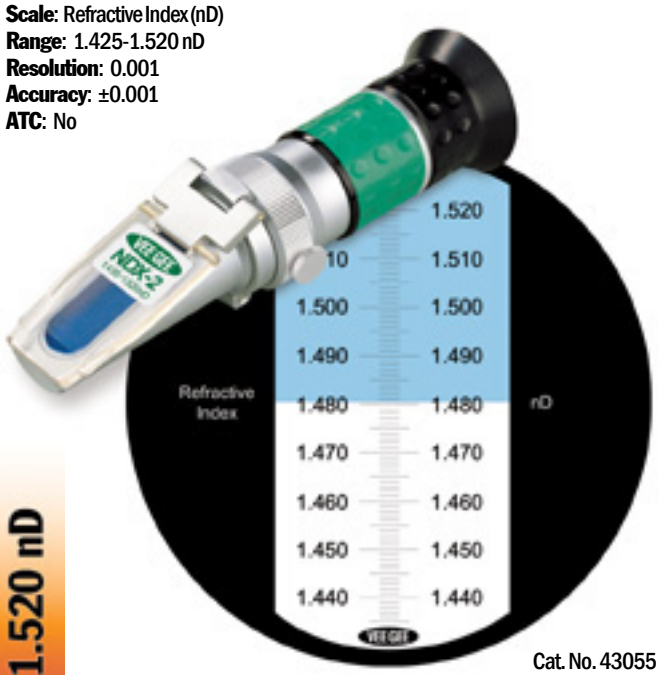
1.330-1.520 nD

Samples & Applications
Wide Range for Most Dissolved Solids Applications

VEE GEE

Model NDX-2

Scale: Refractive Index (nD)
Range: 1.425-1.520 nD
Resolution: 0.001
Accuracy: ±0.001
ATC: No



Cat. No. 43055

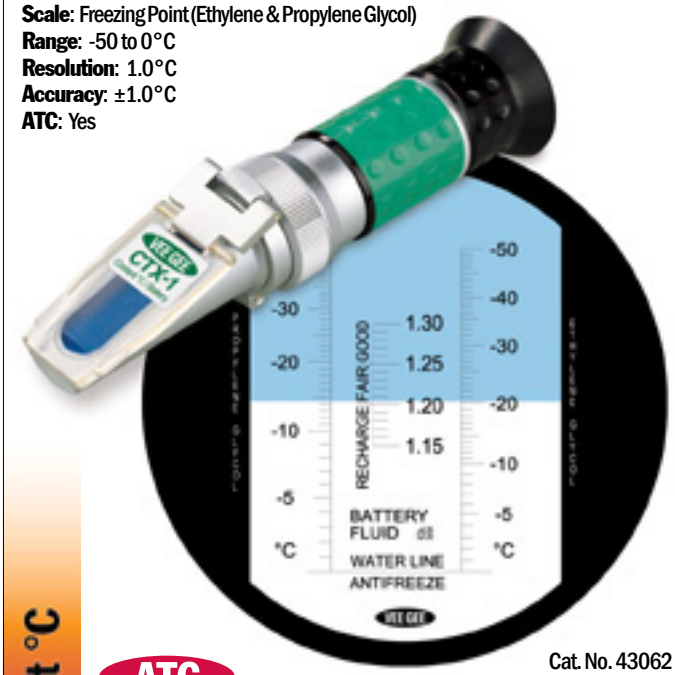
1.425-1.520 nD

Samples & Applications
Vegetable Oils • Animal Oils • Mineral Oils • Essential Oils • Oil Spills

VEE GEE

Model CTX-1

Scale: Freezing Point (Ethylene & Propylene Glycol)
Range: -50 to 0°C
Resolution: 1.0°C
Accuracy: ±1.0°C
ATC: Yes



Cat. No. 43062

Coolant °C

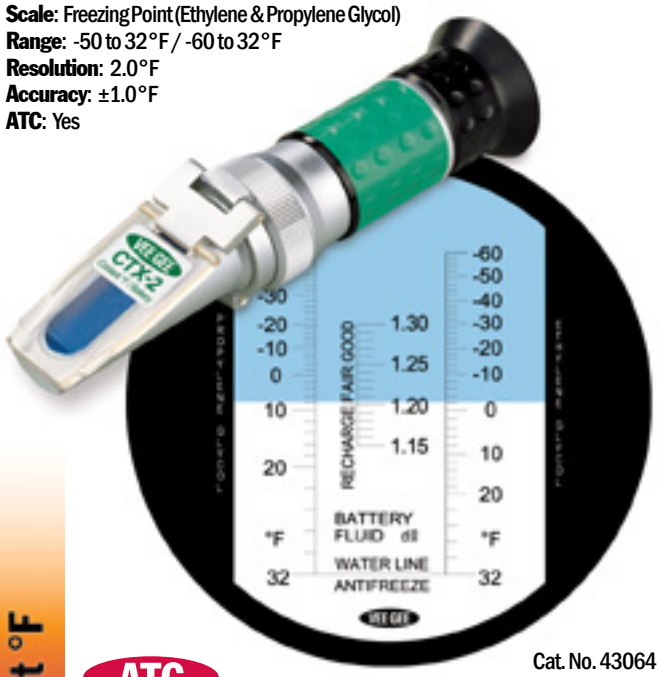
ATC

Samples & Applications
Antifreeze Testing • Battery Charge Level

VEE GEE

Model CTX-2

Scale: Freezing Point (Ethylene & Propylene Glycol)
Range: -50 to 32°F / -60 to 32°F
Resolution: 2.0°F
Accuracy: ±1.0°F
ATC: Yes



Cat. No. 43064

Coolant °F

ATC

Samples & Applications
Antifreeze Testing • Battery Charge Level

VEE GEE

Temperature Compensation

VEE GEE Handheld Refractometers are calibrated to read at 20°C (68°F), which essentially means that sample temperature and ambient temperature need to be as close to or at 20°C for accurate results. Temperature has a direct effect on refractometer readings; if ambient temperature changes dramatically (±2.5°C), incorrect readings can result. Listed below are two styles of handheld refractometers and how they compensate for temperature changes.

Automatic Temperature Compensated (ATC)
refractometers make use of a bi-metal strip, located inside the refractometer body, which slides the scale either up or down based on changes in ambient temperature with regard to calibration temperature. For example VEE GEE ATC Handheld Refractometers have a compensation range of 10-30°C...therefore, if ambient temperature is 27°C, the refractometer compensates for this and displays a reading as if ambient were actually at 20°C. This style of refractometer is the proper choice for those users working in an environment with regular temperature changes, especially outdoor work, where manual calibration may not be practical.

Non Temperature Compensated refractometers should be calibrated daily or when a change of (±2.5°C) in ambient temperature takes place. Calibration simply consists of placing water, or a liquid standard for some models, on the prism and turning the calibration mechanism until the instrument is zeroed. *Properly calibrated, Non Temperature Compensated handheld refractometers are generally more accurate than ATC refractometers.* VEE GEE Handheld Refractometers are equipped with the exclusive "Zero-Ring" which eliminates the need for extra tools for calibration. Re-calibration is a simple process and well worth the added precision.

VEE GEE X-Series Specifications

Measuring Range:	Brix:	0.0-32.0%	(Models BX-1 & BTX-1)
		28.0-62.0%	(Model BX-2)
		58.0-92.0%	(Model BX-3)
		45.0-82.0%	(Model BX-4)
		0.0-10.0%	(Model BX-10)
		0.0-20.0%	(Models BX-20 & BTX-20)
		0.0-50.0%	(Model BX-50)
		0.0-90.0%	(Model BX-90)
	Salinity:	0-100‰	(Model STX-3)
	Refractive Index (nD):	1.333-1.520	(Model NDX-1)
		1.425-1.520	(Model NDX-2)
	Freezing Point of Propylene Glycol:	-50.0 to 0.0°C	(Model CTX-1)
		-50.0 to 32.0°F	(Model CTX-2)
	Freezing Point of Ethylene Glycol:	-50.0 to 0.0°C	(Model CTX-1)
		-60.0 to 32.0°F	(Model CTX-2)
	Specific Gravity of Seawater:	1.000-1.070	(Model STX-3)
	Specific Gravity of Battery Acid:	1.15-1.30	(Models CTX-1 & CTX-2)
Resolution / Accuracy:	Brix:	0.2% / ±0.2%	(Models BX-1, BTX-1, BX-2, BX-3, BX-4, & BX-90)
		0.1% / ±0.1%	(Models BX-10, BX-20, BTX-20)
		0.5% / ±0.5%	(Model BX-50)
	Salinity:	1‰ / ±1‰	(Model STX-3)
	Refractive Index (nD):	0.001 / ±0.001	(Models NDX-1 & NDX-2)
	Freezing Point of Propylene Glycol:	0.1°C / ±0.1°C	(Model CTX-1)
		0.2°F / ±0.2°F	(Model CTX-2)
	Freezing Point of Ethylene Glycol:	0.1°C / ±0.1°C	(Model CTX-1)
		0.2°F / ±0.2°F	(Model CTX-2)
	Specific Gravity of Seawater:	0.001 / ±0.001	(Model STX-3)
	Specific Gravity of Battery Acid:	0.01 / ±0.01	(Models CTX-1 & CTX-2)
Temperature Compensation:	10 to 30°C		(Models BTX-1, BTX-20, STX-3, CTX-1, & CTX-2)
Sample Type:	Transparent, Translucent, & Opaque		
Sample Quantity:	>0.1mL		
Calibration Liquid:	Distilled Water		(Models BX-1, BTX-1, BX-10, BX-20, BTX-20, BX-50 BX-90, STX-3, NDX-1, CTX-1 & CTX-2)
	Liquid Standard / Sucrose Solution		(Models BX-2, BX-3, BX-4, & NDX-2)
Prism:	Optical Glass		
Prism Housing:	Stainless Steel		
Supplied With:	Storage Case (1 ea.) Plastic Transfer Pipet (1 ea.) Instruction Manual (1 ea.)		


Model BX-1


Model BX-2


Model BX-3


Model BX-10


Model STX-3


Model CTX-1

VEE GEE Ordering Information

Cat. No.	Model	Scale	Range	Resolution	Accuracy	ATC	Dimensions	Weight
43001	BX-1	Brix	0-32%	0.2%	±0.2%	No	40x40x165mm	240g
43002	BTX-1	Brix	0-32%	0.2%	±0.2%	Yes	40x40x165mm	240g
43003	BX-2	Brix	28-62%	0.2%	±0.2%	No	40x40x150mm	235g
43005	BX-3	Brix	58-92%	0.2%	±0.2%	No	40x40x140mm	230g
43007	BX-4	Brix	45-82%	0.2%	±0.2%	No	40x40x140mm	230g
43009	BX-10	Brix	0-10%	0.1%	±0.1%	No	40x40x185mm	285g
43011	BX-20	Brix	0-20%	0.1%	±0.1%	No	40x40x185mm	285g
43012	BTX-20	Brix	0-20%	0.1%	±0.1%	Yes	40x40x185mm	285g
43015	BX-50	Brix	0-50%	0.5%	±0.5%	No	40x40x145mm	225g
43017	BX-90	Brix	0-90%	0.2%	±0.2%	No	35x35x200mm	650g
43036	STX-3	Salinity	0-100‰	1.0‰	±1.0‰	Yes	40x40x185mm	285g
		Specific Gravity of Seawater	1.000-1.070	0.001	±0.001			
43053	NDX-1	Refractive Index (nD)	1.333-1.520	0.001	±0.001	No	35x35x200mm	650g
43055	NDX-2	Refractive Index (nD)	1.425-1.520	0.001	±0.001	No	40x40x140mm	230g
43062	CTX-1	Freezing Point of Propylene Glycol	-50 to 0°C	1°C	±1°C	Yes	40x40x165mm	240g
		Freezing Point Of Ethylene Glycol	-50 to 0°C	1°C	±1°C			
		Specific Gravity of Battery Acid	1.15-1.30	0.01	0.01			
43064	CTX-2	Freezing Point of Propylene Glycol	-50 to 32°F	2°F	±2°F	Yes	40x40x165mm	240g
		Freezing Point Of Ethylene Glycol	-60 to 32°F	2°F	±2°F			
		Specific Gravity of Battery Acid	1.15-1.30	0.01	0.01			