



# Automatic Refractometers



## ATR-Series Models

- Unparalleled Performance & Features
- Brix%, Refractive Index, & Programmable User Scales
- Alphanumeric Keypad w/ Menu-Driven LCD Display
- Glass, Plastic, Film, & Organic Solvents Testing

Schmidt+Haensch ATR-Series Automatic Refractometers offer 3 model levels to match any application with a strong selection of performance, accuracy, and reliability. The ideal instruments for extremely precise refractive index measurements.

**Easy to Use.** Standard operation consists of placing a sample on the prism and pressing the START button... in a few seconds the result is accurately displayed on the large, backlit LCD screen. All models automatically calibrate with water or with user-selectable liquid standards. Calibration solution lists and calibration history logs are automatically created.

**High Precision & Digital Accuracy.** 5th-decimal resolution/accuracy ( $\pm 0.00002$ ) for the refractive index scale and 2nd-decimal resolution / accuracy ( $\pm 0.02\%$ ) for Brix. The LCD digital display and push-button operation both significantly enhance achieving accurate readings... no dials to turn, no interpretation of a shadowline, no analog scales to read.

**Prism Temperature Regulation.** Temperature has a direct effect on refractive index readings. The sensor module on Model ATR-SW is outfitted with ports, which enable connection to a circulator for high-level control of prism temperature. Model ATR-W2 features electronic temperature regulation (Peltier), which automatically heats or cools the prism assembly to any value from 10-70°C for the ultimate in controlling temperature and producing the highest level of repeatability.

**Automatic Temperature Compensation (ATC).** Precisely corrects measured Brix values with 20°C as the standard reference temperature. For custom settings and scales, the ATR-Series Models feature user-definable reference temperatures and temperature compensation coefficients.

**Separate Control & Sensor Modules.** Ensures that heat generated by the electronic components of the control unit has absolutely no effect on the temperature, and ultimately, the accuracy of measurements conducted by the sensor module. In turn, if the sensor module is connected to a circulator for prism temperature regulation, the control module is protected from any moisture generated. Also, without the need for internal cooling fans, the units run at an almost silent level. Featured on Models ATR-SW & ATR-W2.

**LED Light Source.** The long-lasting LED light source with a 589.3nm (Sodium D-Line) precision interference filter is intended to last the life of the instrument.

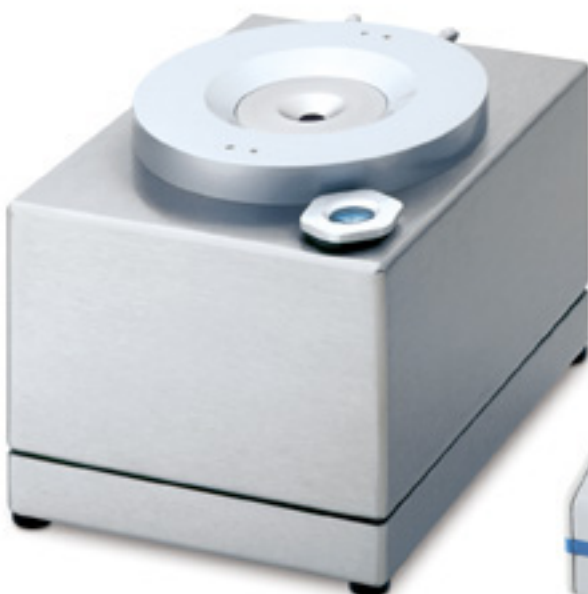
**Professional Features.** Manual, automatic, and remote measurement modes; large, menu-driven, backlit, customizable LCD display; push-button operation; 20-key alphanumeric keypad; password-protected user settings; user-definable profiles; user-definable tolerances for readings and temperature; wait-time setting (0-120 seconds); batch/ operator ID; Centronics printer port (parallel); RS-232C computer port (serial); built-in clock displaying date & time. An optional flow-through attachment for the prism assembly is also available for Model ATR-SW.

**Wide Refractive Index Range.** Model ATR-W2 features the full Abbe measurement range of 1.33200-1.70000 nD, with ultra-high accuracy of  $\pm 0.00002$ .

**Glass, Plastic, & Film Testing.** In addition to conventional liquid testing, Model ATR-ST can also measure the refractive index values for glass, plastic, & film. The custom prism assembly of this instrument allows it to function in the method of a traditional Abbe refractometer, but with the advantage of fully digital technology.

**Organic Solvents Testing.** With the use of its included Teflon® prism assembly insert, Model ATR-ST can be used for testing organic solvents and other caustic solutions which are quite harmful to the prism sealant for all other types of refractometers.

**Measurement Software.** The included software package and RS-232C cable make it very easy to connect the ATR-Series models to computers for collection of measurement data or to be operated remotely with full command of all functions. As new software versions are released, the instruments can also receive flash updates.



Model ATR-SW



# VEE GEE ATR-Series Specifications

	Model ATR-ST	Model ATR-SW	Model ATR-W2
<b>Measuring System:</b>	Optical Refraction Critical Angle Detection	Optical Refraction Critical Angle Detection	Optical Refraction Critical Angle Detection
<b>Measuring Range</b>	<b>R.I.:</b> 1.3320-1.5320 nD <b>Brix:</b> 0.0-95.0%	1.33200-1.53200 nD 0.00-95.00%	1.33200-1.70000 nD 0.00-95.00%
<b>Resolution</b>	<b>R.I.:</b> 0.0001 nD <b>Brix:</b> 0.01%	0.00002 nD 0.01%	0.00002 nD 0.01%
<b>Accuracy</b>	<b>R.I.:</b> ±0.0001 nD <b>Brix:</b> ±0.05%	±0.00002 nD ±0.02%	±0.00002 nD ±0.02%
<b>Programmable User Scales:</b>	3	3	3
<b>Wait Time Setting:</b>	0-120 seconds	0-120 seconds	0-120 seconds
<b>Internal Clock:</b>	Date & Time Indication	Date & Time Indication	Date & Time Indication
<b>Temperature Compensation:</b>	10-40°C	5-50°C	10-50°C
<b>Ambient Temperature:</b>	5-40°C	5-40°C	5-40°C
<b>Measuring Temperature:</b>	10.0-40.0°C(±0.1°C)	5.00-50.00°C(±0.02°C)	10.00-70.00°C(±0.02°C)
<b>Prism Temperature Control:</b>	N/A	Circulator Ports	Electronic(Peltier): 10.00-70.00°C(0.01°C)
<b>Measuring Time:</b>	5.0 seconds	5.0 seconds	5.0 seconds
<b>Measuring Mode:</b>	Manual, Automatic, & Remote	Manual, Automatic, & Remote	Manual, Automatic, & Remote
<b>Flow Attachment:</b>	N/A	Available As An Option	N/A
<b>Sample Type:</b>	Transparent, Translucent, & Opaque	Transparent, Translucent, & Opaque	Transparent, Translucent, & Opaque
<b>Sample Quantity:</b>	>0.3ml	>0.3ml	>0.3ml
<b>Zero Calibration Liquid:</b>	Distilled Water	Distilled Water	Distilled Water
<b>Custom Calibration Liquid:</b>	Liquid Standard or User-Prepared Standard	Liquid Standard or User-Prepared Standard	Liquid Standard or User-Prepared Standard
<b>Calibration History:</b>	Last 25 Calibrations	Last 25 Calibrations	Last 25 Calibrations
<b>Display:</b>	Backlit LCD (16 Lines x 16 Characters)	Backlit LCD (16 Lines x 16 Characters)	Backlit LCD (16 Lines x 16 Characters)
<b>Keypad:</b>	20-Key Alphanumeric	20-Key Alphanumeric	20-Key Alphanumeric
<b>Password Protection:</b>	User Settings	User Settings	User Settings
<b>Languages:</b>	English & German	English & German	English & German
<b>Measuring Light Source:</b>	LED w/ Interference Filter 589.3nm (Sodium D-Line)	LED w/ Interference Filter 589.3nm (Sodium D-Line)	LED w/ Interference Filter 589.3nm (Sodium D-Line)
<b>Sensor:</b>	Linear High-Resolution CCD	Linear High-Resolution CCD	Linear High-Resolution CCD
<b>Prism Sealant:</b>	Viton®	Viton®	Viton®
<b>Prism:</b>	Synthetic Sapphire	Synthetic Sapphire	Synthetic Sapphire
<b>Prism Assembly Insert:</b>	Teflon®	N/A	N/A
<b>Stage:</b>	Stainless Steel	Stainless Steel	Stainless Steel
<b>Power Requirements:</b>	90 to 240V AC, 48-62 Hz	90 to 240V AC, 48-62 Hz	90 to 240V AC, 48-62 Hz
<b>Printer Port:</b>	Centronics (Parallel)	Centronics (Parallel)	Centronics (Parallel)
<b>Computer Port (I/O):</b>	RS-232C (9-Pin Serial)	RS-232C (9-Pin Serial)	RS-232C (9-Pin Serial)
<b>Dimensions</b>	<b>Control:</b> 290 (L) x 220 (W) x 120 (H) mm <b>Sensor:</b>	290 (L) x 220 (W) x 120 (H) mm 200 (L) x 160 (W) x 150 (H) mm	290 (L) x 220 (W) x 120 (H) mm 200 (L) x 160 (W) x 140 (H) mm
<b>Weight</b>	<b>Control:</b> 3.0kg <b>Sensor:</b>	3.0kg 4.5kg	3.0kg 4.5kg
<b>Country Of Origin:</b>	Germany	Germany	Germany
<b>Supplied With:</b>	Power Cord (1 ea.) Teflon® Prism Assembly Insert (1 ea.) Prism Sample Press (1 ea.) Prism Cover (1 ea.) RS-232C Cable (1 ea.) Software (1 ea.) Instruction Manual (1 ea.)	Power Cord (1 ea.) Prism Sample Press (1 ea.) RS-232C Cable (1 ea.) Software (1 ea.) Desiccant Cartridge, Replacement (1 ea.) Instruction Manual (1 ea.)	Power Cord (1 ea.) Prism Sample Press (1 ea.) RS-232C Cable (1 ea.) Software (1 ea.) Desiccant Cartridge, Replacement (1 ea.) Instruction Manual (1 ea.)



Teflon® Prism Assembly Insert



Model ATR-ST



Model ATR-SW



Model ATR-SW  
(w/ Optional Flow Attachment)



Model ATR-W2

## VEE GEE Ordering Information

Cat. No.	Model	Scale	Range	Resolution	Accuracy	Dimensions / Weight
45001	ATR-ST	Refractive Index (nD)	1.3320-1.5320	0.0001	±0.0001	290 (L) x 220 (W) x 120 (H) mm / 3.0kg
		Brix	0.0-95.0%	0.01%	±0.05%	
45004	ATR-SW	Refractive Index (nD)	1.33200-1.53200	0.00002	±0.00002	Control Module: 290 (L) x 220 (W) x 120 (H) mm / 3.0kg Sensor Module: 200 (L) x 160 (W) x 150 (H) mm / 4.5kg
		Brix	0.00-95.00%	0.01%	±0.02%	
45007	ATR-W2	Refractive Index (nD)	1.33200-1.70000	0.00002	±0.00002	Control Module: 290 (L) x 220 (W) x 120 (H) mm / 3.0kg Sensor Module: 200 (L) x 160 (W) x 140 (H) mm / 4.5kg
		Brix	0.00-95.00%	0.01%	±0.02%	



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