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Abbe Refractometers

ATAGO's Abbe Refractometers are highly reliable instruments which measure Refractive Index. Compared with other types of refractometers, the Abbe refractometers are capable of measuring liquid and solid samples such as plate glasses, plastic sheets, and of solid films.

Abbe Refractometer DR-A1

By very simple operation that needs only to set the boundary line of refraction at the cross hairs, this refractometer directly indicates a measured value (in refractive index or Brix (%) , selective) in digits together with temperature on the display. This refractometer enable anybody to carry out measurement easily without reading of analog graduation. *Dispersive value cannot be measured by this refractometer.



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Model	DR-A1	Cat.No.	1310
Measurement range	Refractive index (nD) 1.3000 to 1.7100 Brix 0.0 to 25.0% (Automatic Temperature Compensation is executed at 5 to 50°C)	Minimum Indication	Refractive index (nD) 0.0001 Brix 0.1%
Measurement Accuracy	Refractive index (nD) ±0.0002 Brix ±0.1%	Measurement Temperature Range	5 to 50°C (at unit of 0.1°C)
Indication	Refractive index (nD) or Brix (%) and temperature (° C)	Power Supply	With AC adapter (100 to 240V (50/60Hz) AC input)
Power Consumption	10VA	Dimensions & Weight	13×29×31cm, 6.0kg (Refractometer) 10.5x17.5x4cm, 0.7kg(AC adapter)
Optional	<ul style="list-style-type: none"> •Adapter for film sample : RE-1581 •Eyepiece for polarizing : RE-1146 		
Parts	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-1195 * As for the other consumables & the part please view this. 		

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Abbe Refractometer NAR-1T LIQUID

This is the Abbe Refractometer for liquid sample measurement only. It has the Refractive Index Scale and the BRIX scale, and it comes with D line (589nm) light source. Calibration can be done with distilled water.



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Model	NAR-1T LIQUID	Cat.No.	1211
Measurement range	Refractive index (nD) 1.3000 to 1.7000 Brix 0.0 to 95.0%	Minimum scale	Refractive Index (nD) 0.001 Brix 0.5%
Measurement Accuracy	Refractive index (nD) ±0.0002 Brix ±0.1%	Measurement Temperature Range	0 to 50°C
Digital Thermometer	Indication range 0.0 to 50.0°C (Accuracy ±0.2°C Minimum indication 0.1°C)	Power Supply	115V, 220V, 240V (Select one when you place an order.) 50/60Hz
Light Source	LED	Power Consumption	3VA
Dimensions & Weight	13×18×23cm, 3.4kg (Refractometer) 8×10×11cm, 0.8kg (Thermometer)		
Optional	•10% Sucrose Solution (±0.03%) : RE-110010 •30% Sucrose Solution (±0.03%) : RE-110030 •50% Sucrose Solution (±0.03%) : RE-110050		
Parts	As for the consumable & the part please view this.		

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Abbe Refractometer NAR-1T SOLID

NEW Abbe Refractometer for solid sample measurement (it can also be used to measure liquid samples), the NAR-1T SOLID was launched. It has the Refractive Index Scale and the BRIX scale, and it comes with D line (589nm) light source.



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Model	NAR-1T SOLID	Cat.No.	1212
Measurement range	Refractive index (nD) 1.3000 to 1.7000 Brix 0.0 to 95.0%	Minimum scale	Refractive Index (nD) 0.001 Brix 0.5%
Measurement	Refractive index (nD)	Average	nF-nC (to be calculated according to conversion

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Accuracy	±0.0002 Brix ±0.1%	dispersion value	table)
Digital Thermometer	Indication range 0.0 to 50.0° C (Accuracy ±0.2°C Minimum indication 0.1°C)	Measurement Temperature Range	0 to 50°C
Light Source	LED	Power Supply	115V, 220V, 240V (Select one when you place an order.) 50/60Hz
Power Consumption	3VA	Dimensions & Weight	13×18×23cm, 3.4kg (Refractometer) 8×10×11cm, 0.8kg (Thermometer)
Optional	<ul style="list-style-type: none"> •10% Sucrose Solution (±0.03%) : RE-110010 •30% Sucrose Solution (±0.03%) : RE-110030 •50% Sucrose Solution (±0.03%) : RE-110050 •Test piece C with m-naphthalene : RE-1197 •Test piece D for measurement of film : RE-1498 •Monobromona-phthalene as contact liquid : RE-1196 •Methylene iodide containing : RE-1199 •Eyepiece for polarizing : RE-1146 		
Parts	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-1195 •As for the other consumables & the part please view this. 		

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Abbe Refractometer NAR-2T

Designed for use with compounds which require measurement at high temperature.



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Model	NAR-2T	Cat.No.	1220
Measurement range	Refractive index (nD) 1.3000 to 1.7000 Brix 0.0 to 95.0%	Minimum Scale	Refractive index (nD) 0.001 Brix 0.5%
Measurement Accuracy	Refractive index (nD) ±0.0002 Brix ±0.1%	Average dispersion value	nF-nC (to be calculated according to conversion table)
Digital Thermometer	Indication range 0.0 to 120.0°C (Accuracy 0 to 100°C :±0.2° C, 100 to 120°C :±0.1°C Minimum indication 0.1°C)	Measurement Temperature Range	0 to 120°C

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Light Source	8V,0.15A tungsten lamp	Power Supply	115V, 220V, 240V (Select one when you place an order.) 50/60Hz
Power Consumption	6VA	Dimensions & Weight	12×20×25cm, 5.8kg (Refractometer) 8x10x11cm, 0.8kg (Thermometer)
Optional	<ul style="list-style-type: none"> •10% Sucrose Solution (±0.03%) : RE-110010 •30% Sucrose Solution (±0.03%) : RE-110030 •50% Sucrose Solution (±0.03%) : RE-110050 •Test piece C with m-naphthalene : RE-11497 •Test piece D for measurement of film : RE-11498 •Monobromona-phthalene as contact liquid : RE-11495 •Methylene iodide containing sulfur solution : RE-11499 •Eyepiece for polarizing : RE-11488 		
Parts	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-11485 <p>* As for the other consumables & the part please view this.</p>		

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Abbe Refractometer NAR-3T

The NAR-3T has been developed to give improved measuring accuracy and ease of use. This has been achieved by making fundamental improvements to the optical system, utilizing a larger scale, incorporating a high intensity lamp and using a double control knob to give quick and finer control.



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Model	NAR-3T	Cat.No.	1230
Measurement range	Refractive index (nD) 1.30000 to 1.71000 Brix 0.00 to 95.00%	Minimum scale	Refractive index (nD) 0.0002 Brix 0.1%
Measurement Accuracy	Refractive index (nD) ±0.0001 Brix0.05%	Average Dispersion Value	nF - nC (to be calculated according to conversion table)
Digital Thermometer	Indication range 0.0 to 50.0° C (Accuracy ± 0.2°C Minimum indication 0.1°C)	Measurement Temperature Range	0 to 50°C
Power Supply	115V, 220V, 240V (Select one when you place an order.) 50/60Hz	Power Consumption	3VA

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Dimensions & Weight	12×31×25cm, 9.0kg (Refractometer) 8x10x11cm, 0.8kg (Thermometer)
Optional	<ul style="list-style-type: none"> •10% Sucrose Solution (±0.03%) : RE-110010 •30% Sucrose Solution (±0.03%) : RE-110030 •50% Sucrose Solution (±0.03%) : RE-110050 •Test piece C with m-naphthalene : RE-1197 •Monobromona-phthalene as contact liquid : RE-1196 •Methylene iodide containing sulfur solution : RE-1199 •Eyepiece for polarizing : RE-1146
Parts	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-1195 * As for the other consumables & the part please view this.

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Abbe Refractometer NAR-4T

R&D on new materials for modern technologies is being actively conducted in every industry. Many of these materials (especially polyn film and related materials) are of high refractive index-often too high for the existing Abbe refractometers. But these are now covered with the nD1.4700 to 1.8700 range of the NAR-4T.



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Model	NAR-4T	Cat.No.	1240
Measurement range	Refractive index (nD) 1.4700 to 1.8700	Minimum scale	Refractive index (nD) 0.001
Measurement accuracy	Refractive index (nD) ±0.0002	Digital Thermometer	Indication range 0.0 to 50.0° C (Accuracy ± 0.2°C Minimum indication 0.1°C)
Measurement Temperature Range	0 to 50°C	Light Source	8V, 0.15A tungsten lamp
Power Supply	115V, 220V, 240V (Select one when you place an order.) 50/60Hz	Power Consumption	3VA
Dimensions & Weight	13×18×23cm, 3.4kg (Refractometer) 8x10x11cm, 0.8kg(Thermometer)		
Optional	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-1195 •Test piece D for measurement of film : RE-1498 •Test piece E for measurement of film : RE-1499 •Monobromona-phthalene as contact liquid : RE-1196 •Methylene iodide containing sulfur solution : RE-1199 		

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	<ul style="list-style-type: none"> •Contact liquid LJ : RE- 99080 •Eyepiece for polarizing : RE-1146
Parts	<ul style="list-style-type: none"> •Test piece C with m-naphthalene : RE-1197 * As for the other consumables & the part please view this.

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Circulating Constant Temperature Bath 60-C3

The 60-C3 is an external circulation type constant temperature water tank provided with a thermo-module. The temperature can be set the range of 10 to 60°C and the unit is perfectly suited for connection with a refractometer.



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Model	60-C3	Cat.No.	1921
Tank Capacity	0.5 lit	Temperature Setting Range	10 to 60°C (water)
Constant-Temperature Accuracy	±0.2°C	Temperature control	PID control method using a thermo-module
Power Consumption	430VA	Flow Rate	4 lit / min
Power Supply	AC 100 to 240V, 50/60Hz	Dimensions & Weight	38×24×27cm, 11.0kg (Main Unit only)

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Abbe Refractometer 1T-LO (for low refractive index measurement)

Abbe Refractometers for low refractive index and high refractive index measurements In addition to our standard Abbe Refractometer NAR-1T, 2T, 3T, 4T and DR-A1, we can supply the following Abbe models. We shall ask you to use them if the specifications of our standard Abbe Refractometers do not meet your requirements. Another Optional *We can supply Abbe Refractometer with measurement range of "nD 1.7000 to 2.0800" and with Measurement Temperature Range of "0 to 50°C" or "0 to 120°C".

Note:You are requested to convert measured refractive indices to "real refractive indices" (with referring to conversion tables) , since the above Abbe Refractometers have the same scales as our standard Abbe Refractometer NAR-1T and 2T.



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Model	1T•LO	Cat.No.	1217
Measurement range	Refractive index (nD) 1.1500 to 1.4800	Measurement Temperature Range	0 to 50°C
Optional	<ul style="list-style-type: none"> •Monobromona-phthalene as contact liquid : RE-1196 		

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	<ul style="list-style-type: none"> •Methylene iodide containing sulfur solution : RE-1199
Parts	<ul style="list-style-type: none"> •Secondary prism for 1T : RE-1111 •*Thermo display unit (DTM-1) 110V : RE-1164, 220V : RE-1165, 240V : RE-1166 •*Thermistor unit C : RE-1157 •*Thermistor unit E : RE-1158 •Lamp for illuminator (8V, 0.15A) : RE-1170 •Lamp cable : RE-1175 •Desiccant (10g) : RE-1187 •Fuse (0.315A) : RE-1152 •Tube band : RE-8507 <p>*Please inform us of a serial number in the case of an order.</p>

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Abbe Refractometer 2T-LO (for high temperature and low refractive index measurement)



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Model	2T•LO	Cat.No.	1227
Measurement range	Refractive index (n _D) 1.1500 to 1.4800	Measurement Temperature Range	0 to 120°C
Optional	<ul style="list-style-type: none"> •Monobromophthalene as contact liquid : RE-1196 •Methylene iodide containing sulfur solution : RE-1199 		
Parts	<ul style="list-style-type: none"> •*Thermo display unit 110V : RE-1164, 220V : RE-1165, 240V : RE-1166 •*Thermistor unit D : RE-1357 •*Thermistor unit F : RE-1358 •Lamp for illuminator (8V, 0.15A) : RE-1170 •Desiccant (10g) : RE-1187 •Fuse (0.315A) : RE-1152 •Tube band : RE-8507 <p>*Please inform us of a serial number in the case of an order.</p>		

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Abbe Refractometer 2T-HI (for high temperature and high refractive index measurement)



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Model	2T•HI	Cat.No.	1228
		Measurement	

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Measurement range	Refractive index (nD) 1.4700 to 1.8700	Temperature Range	0 to 120°C
Optional	<ul style="list-style-type: none"> •Test piece A with m-naphthalene : RE-1195 •Test piece D for measurement of film : RE-1498 •Test piece E for measurement of film : RE-1499 •Monobromona-phthalene as contact liquid : RE-1196 •Methylene iodide containing sulfur solution : RE-1199 •Contact liquid LJ : RE-99080 •Eyepiece for polarizing : RE-1146 		
Parts	<ul style="list-style-type: none"> * secondary prism for 3T :RE-1204 *Thermo display unit (DTM-1) 110V : RE-1164, 220V : RE-1165, 240V : RE-1166 *Thermistor unit D : RE-1357 *Thermistor unit F : RE-1358 •Lamp for illuminator (8V, 0.45A) / RE-1170 •Desiccant (10g) : RE-1187 •Fuse (0.315A) CRE-1152 •Test piece C with m-naphthalene : RE-1197 •Tube band : RE-8507 <p style="color: red; font-size: small;">*Please inform us of a serial number in the case of an order.</p>		

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