

ABBE REFRACTOMETERS



1T



3T



2T



DR-A1



4T



DR-M2, DR-M4



DR-M2/1550, DR-M4/1550

EXPLANATION OF ICONS

Icons for functions, specifications and scales have been added to this catalog.



- *Connectable with circulating constant temperature bath
- *Thermostatable par circulation
- *Cirkulierendes konstant temperiertes Wasserbad angeschlossen
- *Collegabile a bagno termostatico a circolazione
- *Conexión para baño termostático de circulación
- *可連結恒溫循環水槽



- *Calibration with water
- *Calibration 1 point* sur eau distillée
- *Kalibrierung mit Wasser
- *Calibrazione con acqua
- *Calibración con agua
- *用水歸零



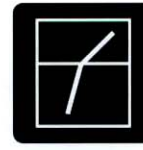
- *Connectable with printer
- *Sortie imprimante
- *Verbindung mit Personalcomputer
- *Collegabile a stampante esterna
- *Conexión para impresora
- *可與印表機連結



- *AC outlet(AC100 to 240V)
- *Alimentation secteur(CA 100 à 240 V)
- *AC Ausgang (AC 100 bis 240V)
- *Uscita AC(AC 100 240V)
- *Conexión a 240V CA
- *AC插座(AC 100至240V)



- *Digital display
- *Affichage numérique
- *Digital Anzeige
- *Display digitale
- *Pantalla digital
- *數字顯示



- *Refractive index scale
- *Indice de réfraction
- *Skala fuer Refraktive Index
- *Indice di rifrazione
- *Escala de índice de refracción
- *折射率刻度

CAT.NO.1310

DIGITAL 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 enables anybody to carry out measurement easily without reading of analog graduation.

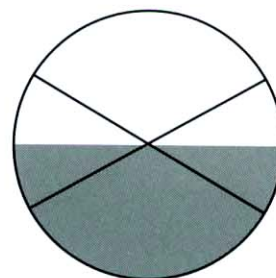
* Dispersive value cannot be measured by this refractometer.

SPECIFICATIONS

Measurement range	:Refractive index(nD) 1.3000 to 1.7100 Brix(%) 0.0 to 95.0% (Automatic temperature compensation is executed from 5 to 50°C for Brix only)
Minimum indication	:Refractive index(nD) 0.0001, Brix(%) 0.1%
Measurement accuracy	:Refractive index(nD) ± 0.0002 Brix(%) $\pm 0.1\%$
Measurement temperature range	: 5 to 50°C (at unit of 0.1°C)
Indications	:Refractive index(nD) or Brix(%) and temperature(°C)
Power supply	:With AC adapter (100 to 240V (50/60Hz) AC input)
Power consumption	:10VA
Dimensions and Weight	:Main Unit 13×29×31cm, 6.0kg

ACCESSORIES

Test piece (Refractive index standard)	1pc
Monobromonaphthalene(4ml)	1pc
Allen wrench	1pc
Lighting adapter	1pc
Tube band	10pcs
Instruction manual	1pc



Refraction view



Display

CAT.NO.1210/CAT.NO.1240

ABBE REFRACTOMETER 1T/4T

1T (ATAGO'S STANDARD MODEL)



The 1T is an Abbe refractometer of standard type, measures refractive indices of liquids and solids quickly and accurately. It is designed to give refractive indices of D line without using a sodium lamp.

SPECIFICATIONS

Refractive index range	nD 1.3000 to 1.7000
R.I. minimum scale	nD 0.001
Brix range	0 to 95%
Brix minimum scale	0.5%
Accuracy of R.I. & Brix	±0.0002, ±0.1%
Dispersion (nF-nC)	with conversion table
Applicable temperature	0 to 50°C
Digital thermometer	Built-in thermistor in the prism ±0.2°C
Input	100 to 120, 220 to 240 V a.c.
Size and weight	Refractometer 23×18×23cm, 3.4kg Thermometer 8×10×11cm, 0.8kg

ACCESSORIES

Test piece (Refractive index standard)	1pc
Monobromonaphthalene(4 ml)	1pc
Thermometer (Digital type)	1pc
Screwdriver for scale adjustment	1pc
Lamp cord	1pc
Illuminator lamp (8V 0.15A)	5pcs
Instruction manual	1pc



With Digital Thermometer !

4T(HIGH REFRACTIVE INDEX MODEL)



R&D on new materials for modern technologies is being actively conducted in every industry. Many of these materials (especially polymer film and related materials) are of high refractive index - often too high for measurement with existing Abbe refractometers. But these are now covered with the nD 1.4700 to 1.8700 range of the Type 4T.

SPECIFICATIONS

Refractive index range	nD 1.4700 to 1.8700
R.I. minimum scale	nD 0.001
Accuracy of R.I.	±0.0002
Applicable temperature	0 to 50°C
Digital thermometer	Built-in thermistor in the prism ±0.2°C
Input	100 to 120, 220 to 240 V a.c.
Size and weight	Refractometer 23×18×23cm, 3.4kg Thermometer 8×10×11cm, 0.8kg

ACCESSORIES

Test piece (Refractive index standard)	1pc
Monobromonaphthalene(4ml)	1pc
Methylene iodide containing sulfur solution(4 ml)	1pc
Thermometer(Digital type)	1pc
Screwdriver for scale adjustment	1pc
Lamp cord	1pc
Illuminator lamp (8V 0.15A)	5pcs
Instruction manual	1pc

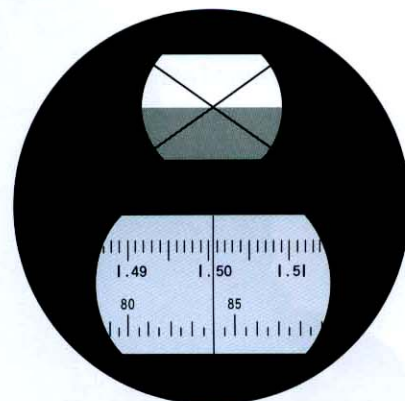


Photo:1T

Abbe Refractometer for low refractive index measurement

In addition to our standard Abbe Refractometer type 1T, we can supply the following Abbe model.

- **Abbe Refractometer 1T•LO** (for low refractive index measurement) Cat.No.1217
Measurement range :Refractive index(nD) 1.1500 to 1.4800
Measurement temperature range:0 to 50°C

Note : You are requested to convert measured refractive indices to "real refractive indices"(with referring to conversion table), since the above Abbe refractometer has the same scale as our standard Abbe refractometer type 1T.
For further details, please make inquiries to our export department.

CAT. NO.1220

ABBE REFRACTOMETER (HIGH TEMPERATURE MODEL)

2T



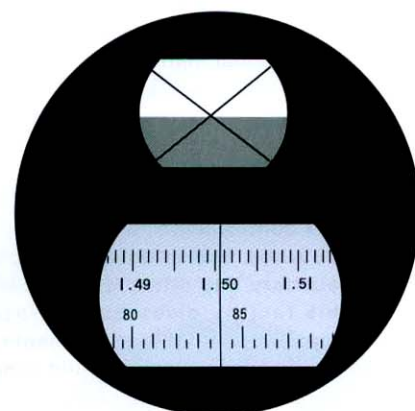
The field of application of the abbe refractometer is further extended to enable measurement to be made with high molecular compounds by this new model, Type 2T, which is designed for use with samples at high temperature.

SPECIFICATIONS

Refractive index range	nD 1.3000 to 1.7000
R.I. minimum scale	nD 0.001
Brix range	0 to 95%
Brix minimum scale	0.5%
Accuracy of R.I. & Brix	$\pm 0.0002, \pm 0.1\%$
Dispersion (nF-nC)	with conversion table
Applicable temperature	0 to 120°C
Digital thermometer	Built-in thermistor in the prism 0 to 100°C ($\pm 0.2^\circ\text{C}$) 100 to 120°C ($\pm 0.5^\circ\text{C}$)
Input	100 to 120, 220 to 240 V a.c.
Size and weight	Refractometer 21x20x25cm, 5.8kg Thermometer 8x10x11cm, 0.8kg

ACCESSORIES

Test piece (Refractive index standard)	1pc
Monobromonaphthalene(4ml)	1pc
Thermometer(Digital type)	1pc
Screwdriver for scale adjustment	1pc
Illuminator lamp(8V 0.15A)	5pcs
Instruction manual	1pc



With Digital Thermometer !

Abbe Refractometers for low refractive index and high refractive index measurements

In addition to our standard Abbe Refractometer type 2T, we can supply the following Abbe models.

- **Abbe Refractometer 2T•LO** (for high temperature and low refractive index measurements) Cat.No.1227
Measurement range :Refractive index(nD) 1.1500 to 1.4800
Measurement temperature range:0 to 120°C
- **Abbe Refractometer 2T•HI** (for high temperature and high refractive index measurements) Cat.No.1228
Measurement range :Refractive index(nD) 1.4700 to 1.8700
Measurement temperature range:0 to 120°C

Another option

*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 type 2T.

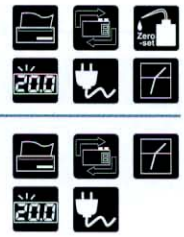
For further details, please make inquiries to our export department.

CAT. NO.1410, 1414

MULTI-WAVELENGTH ABBE REFRACTOMETER

DR-M2

DR-M4



Refractive index or Abbe number (vd or ve) can be measured at different wavelengths ranging from 450 to 1,100nm (For measurement at wavelengths ranging from 681 to 1,100nm, the optional Near Infrared Ray Viewer (RE-9115) is required.) The DR-M2/DR-M4 display measurement result of refractive index or Abbe number digitally on the LCD. Measurement can be achieved by matching the boundary line with the intersection point of the cross hairs. These refractometers are connectable with digital printer DP-21 (A) (optional).

Measurement range:

DR-M2

Wavelength 450nm :Refractive index 1.3277 to 1.7379
Wavelength 589nm :Refractive index 1.3000 to 1.7100
Wavelength 680nm :Refractive index 1.2912 to 1.7011
Wavelength 1,100nm:Refractive index 1.2746 to 1.6843

DR-M4

Wavelength 450nm :Refractive index 1.5164 to 1.9164
Wavelength 589nm :Refractive index 1.4700 to 1.8700
Wavelength 680nm :Refractive index 1.4558 to 1.8557
Wavelength 1,100nm:Refractive index 1.4304 to 1.8303

Minimum indication :0.0001 in refractive index
0.1 in Abbe number

Measurement accuracy :±0.0002 in refractive index (with the attached test piece at 589nm)

Wavelength range :From 450 to 1,100nm
(with interference filters)
(For measurement at wavelengths ranging from 681 to 1,100nm, the Near Infrared Ray Viewer (optional) is required.)

Measurement temperature range :5 to 50°C

Output terminal :For printer, DP-21(A) (optional),
Conforming to Centronics standard

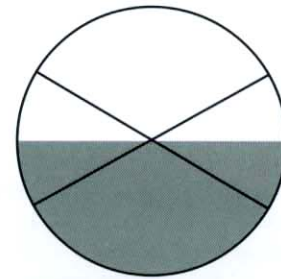
Power supply :AC100 to 240V (50/60Hz)

Size and weight :Refractometer 13×29×31cm,6.0kg
Light source unit 15×33×11cm,3.0kg

Optional accessory :Near Infrared Ray Viewer (Part No.RE-9115)

ACCESSORIES

Allen wrench	1pc
Test piece (Refractive index point)	1pc
Monobromonaphthalene,4ml	1pc
Methylene iodide containing sulfur solution,4ml (for DR-M4 only)	1pc
Lighting glass	1pc
Interference filter, 589 nm and 546 nm	1each
Tube band	10pcs
Spare bulb	1pc
Instruction manual	1pc



Refraction view



Display



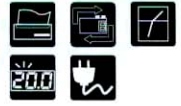
CAT. NO.1412, 1415

MULTI-WAVELENGTH ABBE REFRACTOMETER

DR-M2/1550



DR-M4/1550



Refractive index or Abbe number (vd or ve) can be measured at different wavelengths ranging from 450 to 1,550 nm. These refractometers digitally display measurement result of refractive index or Abbe number on the LCD. Measurement can be achieved by matching the boundary line with the intersection point of the cross hairs. They are connectable with digital printer DP-21(A)(optional).

Measurement range:

DR-M2/1550

- Wavelength 450nm: Refractive index 1.3278 to 1.7379
- Wavelength 589nm: Refractive index 1.3000 to 1.7100
- Wavelength 680nm: Refractive index 1.2913 to 1.7011
- Wavelength 1,100nm: Refractive index 1.2746 to 1.6843
- Wavelength 1,550nm: Refractive index 1.2594 to 1.6690

DR-M4/1550

- Wavelength 450nm : Refractive index 1.5164 to 1.9164
- Wavelength 589nm : Refractive index 1.4700 to 1.8700
- Wavelength 680nm : Refractive index 1.4558 to 1.8557
- Wavelength 1,100nm : Refractive index 1.4304 to 1.8303
- Wavelength 1,550nm : Refractive index 1.4215 to 1.8214

Minimum indication : 0.0001 in refractive index
0.1 in Abbe number

Measurement accuracy: ± 0.0002 in refractive index
(with the attached test piece at 589nm)

Wavelength range : From 450 to 1,550nm
(with interference filters)

Measurement temperature range: 5 to 50°C

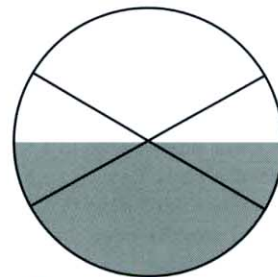
Output terminal : For digital printer, DP-21(A),
Conforming to Centronics standard

Power supply : AC 100 to 240V(50/60Hz)

Size and weight : Refractometer 13×29×31cm, 6kg
Power supply 15×33×11cm, 3kg

ACCESSORIES

- Near Infrared Ray Viewer.....1pc
- Mounting adapter and set screw.....1each
- Monochromatic light source devise.....1set
- Allen wrench.....1pc
- Test piece.....1pc
- Monobromonaphthalene, 4ml.....1pc
- Methylene iodide containing sulfur solution, 4ml(for DR-M4/1550 only).....1pc
- Interference filter, 589nm.....1pc
- Tube band.....10pcs
- Instruction manual.....1pc



Refraction view



Display



Specifications and appearance are subject to change without notice.



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