World's most accurate measurements!

Automatic Digital Refractometer（Cat.No.3921）

RX-007α

Measurement of low concentration samples (less than 5% aqueous solutions) with an accuracy of ± 0.005% Brix!!

Applications

- Tea beverages
- Sugar-free or low sugar content beverages (diet beverages)
- Non-alcoholic beer and carbonated beverages.
- Low concentration of industrial solutions (surfactants corrosion prevention agents, surface treatment liquids, sodium silicate, and more!)

Specifications

Measuring system	Optical-refraction critical-angle detection system
Constant-temperature function	Built-in Peltier thermo-module
Measurement scales	Brix (Automatic Temperature Compensation), Refractive Index (RI), User scales (30 User-defined Scales can be inputted).
Measurement range	Brix : 0.000 to 5.000%, Refractive Index (RI) : 1.330150 to 1.341500
Minimum indication	Brix : 0.001%, Refractive Index (RI) : 0.000001, Temperature : 0.01 ℃
Measurement accuracy	Brix : ± 0.005% (Under specific ambient and sample temperature) Refractive Index (RI) : ± 0.000010 (at 20℃)
Measurement modes	MODE-1 After a sample is applied on the prism and the START key is pressed, the measurement will begin after the sample reaches the target temperature. MODE-2 The unit starts measuring immediately after a sample is placed on the prism and the START key is pressed. The measured value is displayed in 20 seconds (You can set an automatic delay using the "WAIT" function). In mode-2, the thermo - module can be turned on/off freely.
Temperature compensation range	15.00 to 30.00℃
Display method	Back lit LCD (320×240 dpi)
Ambient temperature	15.00 to 30.00℃
Graphic display	Setting upper and lower standard values, a graphic upper and lower limit bar can be displayed with the value.
Input of user scale	By simply inputting 3 points corresponding to Brix or concentration, the unit will calculate the conversion formula automatically.
History function	30 previous measurements are stored and can be displayed or printed.
Zero adjustment	Zero-set with air and distilled water.
Output	Digital Printer DP-RX or DR-RD(Optional) Communication method RS-232C
Power supply	AC100V to 240V, 50/60Hz
Power consumption	480 VA
Materials	Prism : Optical glass Sample Stage : SUS316
Sample volume	0.1ml more
Constant temperature conditions	Ambient Temperature 15℃ (Thermo-module can be set at 15 to 20℃) Ambient Temperature 20℃ (Thermo-module can be set at 15 to 25℃) Ambient Temperature 25℃ (Thermo-module can be set at 20 to 25℃) Ambient Temperature 30℃ (Thermo-module can be set at 25℃)
Dimensions and weight	37×26×14cm, 6.9kg (main unit only)

EXPLANATION OF ICONS

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

- RS-232C Interface
- Interface RS232C pour PC
- Interface RS232C
- Interfaccia RS232C
- Interface RS232C
- RS-232C輸出

- Can be connected to a printer
- Sortie imprimante
- Verbindung mit Personalcomputer
- Collegabile a stampante esterna
- Conexión para impresora
- 可與印表機連結

- User scales can be inputted
- Echelles à façon programmables
- Eingabe von Anwendertabellen
- Scale di misura impostabili dall'utente
- Definición de escalas de usuario programmables
- 可輸入用戶自訂刻度

- Measurement at a set temperature
- Mesure à température constante programmable
- Messung bei voreingestellter Temperatur
- Misura a temperatura impostata
- Medida a temperatura prefijada
- 可設定測量溫度

- Automatic Temperature Compensation
- Compensation automatique de température
- Automatische Temperaturkompensation
- Compensazione automatica della temperatura
- Compensación de automática de temperatura
- 自動溫度補償

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

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

- 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)

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

- High temperature samples
- Résistant à la chaleur
- Hitzebestaendig
- Resistente al calore
- Muestras De Alta Temperatura
- 高溫樣品用

All ATAGO refractometers are designed and manufactured in Japan.

CE HACCP G.M.P. G.L.P. ATAGO products are acknowledged by HACCP, G.M.P. and G.L.P.

*Specifications and appearance are subject to change without notice.

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ATAGO®

Automatic Digital Refractometers

RX-α Series

The leaders of refractometry have arrived!

RX-9000α（Cat.No.3263）
RX-7000α（Cat.No.3262）
RX-5000α（Cat.No.3261）
RX-5000α-Bev（Cat.No.3271）
RX-007α （Cat.No.3921）

(RX-9000α, RX-7000α)

(RX-5000α, RX-5000α-Bev, RX-007α)

Automatic Digital Refractometers

RX-α Series

After applying a sample and pressing the START key, the RX-α series gives a digital readout of Refractive Index, Brix, or concentration in just a few seconds.

Application

1 Measure Refractive Index (nD) for flavors, organic solvents, oils, liquid medicines, etc.

2 Measure Brix of soft drinks, fruit juices, liquid sugars, seasonings, and more!

3 Measuring concentration of metalworking fluid, water-soluble cleaning solution , water-soluble liquid, and more!

Refractive Index (nD)

Medical liquids	Plastic liquid solution
Liquid rubber	Vegetable fat and oil
Methylene chloride	Cooking oil
Chemical agents	Concentrated solutions
Plasticizer	Spice essential oil
Chinese herbal medicine	Oil refinery production
Diesel oil	Electronic oil
Cosmetics	Animal oil and fat
Gel solutions	Polyether fluid
Crude oil	Polymer fluids
Industrial chemicals	Sodium Silicate
Synthetic resin	Organic sulfur compound
High polymers	Organic solvent (Toluene) etc.
Fragrance	
Citrus oil	
Heavy oil	

Brix

Corn syrup	Soft drinks
Liquid sugar	Sauce (Various)
Liquid egg	Tea drinks
Concentrated fruit	Seasoning liquid
Fruit puree	Seasoning soy sauce
Canned syrup	Soybean milk
Glucose	Waste liquid of sugar
Ketchup	Tomato juice
English tea	Milk drinks
Coffee, Cocoa	Honey
Condensed milk	Fermentation liquor
Jam	Pickle (liquid)
Soy sauce	Starch syrup
Vinegar	Sweet syrup
Starch	Gelatin etc.

User Scale

DMF	Soluble cutting oil
IPA	Citric acid, acetic acid
PVA	Glycerin
Amino acid	Lubricating oil
Ammonia	Juice from tobacco leaves
Ethanol	Sodium carbonate
Ethylene glycol	Antifreeze agents
Propylene glycol	Urine
Starch liquid	Broth
Water-soluble cleaning solution	Injection solution
Coolant solution	Spinning liquid
Calcium chloride	Rust preventive
Sodium chloride solution	Formalin
Saltwater	Fire extinguishing solution
Surfactants	Metalworking fluid
Hydrogen peroxide solution	Cupric sulfate etc.
Sodium hydroxide	

■RX-α series Special features for each model

Features	HIGH PERFORMANCE	WIDE RANGE	STANDARD	FLAT STAGE
	The best digital refractometer! It measures samples with very high accuracy, over a wide range.	Measures Refractive Index over a wide range, from 1.3250 to 1.7000, with a measuring temperature range up to 70℃. This is ideal for samples with a high Refractive Index, oils and fats with a high melting point, and other similar samples.	Refractive Index measurements are highly accurate to ± 0.00004, and Brix to ±0.03%. Great for measuring Brix of foods, beverages and sugar solutions.	RX-5000α with a virtually flat sample stage, for easy sample clean-up! Designed to measure beverage samples.

Use \ Model	RX-9000α (Cat.No.3263)	RX-7000α (Cat.No.3262)	RX-5000α (Cat.No.3261)	RX-5000α-Bev (Cat.No.3271)
Measurement items	Refractive Index (nD), Brix (Automatic Temperature Compensation), 30 User Scales		Refractive Index (nD), Brix (Automatic Temperature Compensation), 60 User scales	
Measurement range	Refractive Index (nD) 1.32500 to 1.70000 Brix 0.00 to 100.00%	Refractive Index (nD) 1.3250 to 1.7000 Brix 0.0 to 100.0%	Refractive Index (nD) 1.32700 to 1.58000 Brix 0.00 to 100.00%	
Minimum indication	Refractive Index (nD) 0.00001 or 0.0001 Brix 0.01% or 0.1% (by selection) Temperature 0.01℃	Refractive Index (nD) 0.0001 or 0.00001 Brix 0.1% or 0.01% (by selection) Temperature 0.01℃	Refractive Index (nD) 0.00001 Brix 0.01% Temperature 0.01℃	
Measurement accuracy	Refractive Index (nD) ±0.00004 *±0.00002 (nD 1.33299 to 1.42009 at measurement temperature 10.00 to 30.00℃) Refractive Index (nD): ±0.00010 (For ranges other than the above) Brix ±0.03% (※) *±0.01% (※) (Brix 0.00 to 50.00% at measurement temperature 10.00 to 30.00 ℃) Brix ±0.05% (※) *±0.01% (※) (Brix 50.01 to 100.00% at measurement temperature 10.00 to 30.00 ℃) Brix ±0.10% (※) *±0.02% (※) (For temperatures outside the above ranges) Temperature ±0.05℃	Refractive Index (nD) ±0.0001 *±0.00005 Brix ±0.1% (※) *±0.05% (※) Temperature ±0.05℃	Refractive Index (nD) ±0.00004 *±0.00002 Brix ±0.03% (※) *±0.01% (※) Temperature ±0.05℃	
Measurement modes	MODE-1: This is the standard and most common mode of measurement. The sample's temperature is adjusted to the set target temperature and then the measurement is taken. MODE-2: This mode is used to measure the sample quickly and when accuracy is not as critical. After the START key is pressed, the unit measures the Refractive Index and temperature at short intervals and displays the estimated value at the target temperature. MODE-3: This mode is the quickest way to measure and is best suited when the properties of the sample are changing constantly. In this mode, the unit starts measuring immediately after the START key is pressed. A time delay can also be programmed to postpone the measurement after pressing START.			
Automatic Temperature Compensation range for Brix	5.00 to 70.00℃ (the lower limit is the room temperature minus 10℃)		5.00 to 60.00℃ (the lower limit is the room temperature minus 10℃)	
Dimensions and weight	37×26×14cm, 6.9kg (main unit only)		37×26×14cm, 6.4kg (main unit only)	

*Repeatability (※)On measurement of Sucroce solution by MODE-1

■RX-α Series Common Use

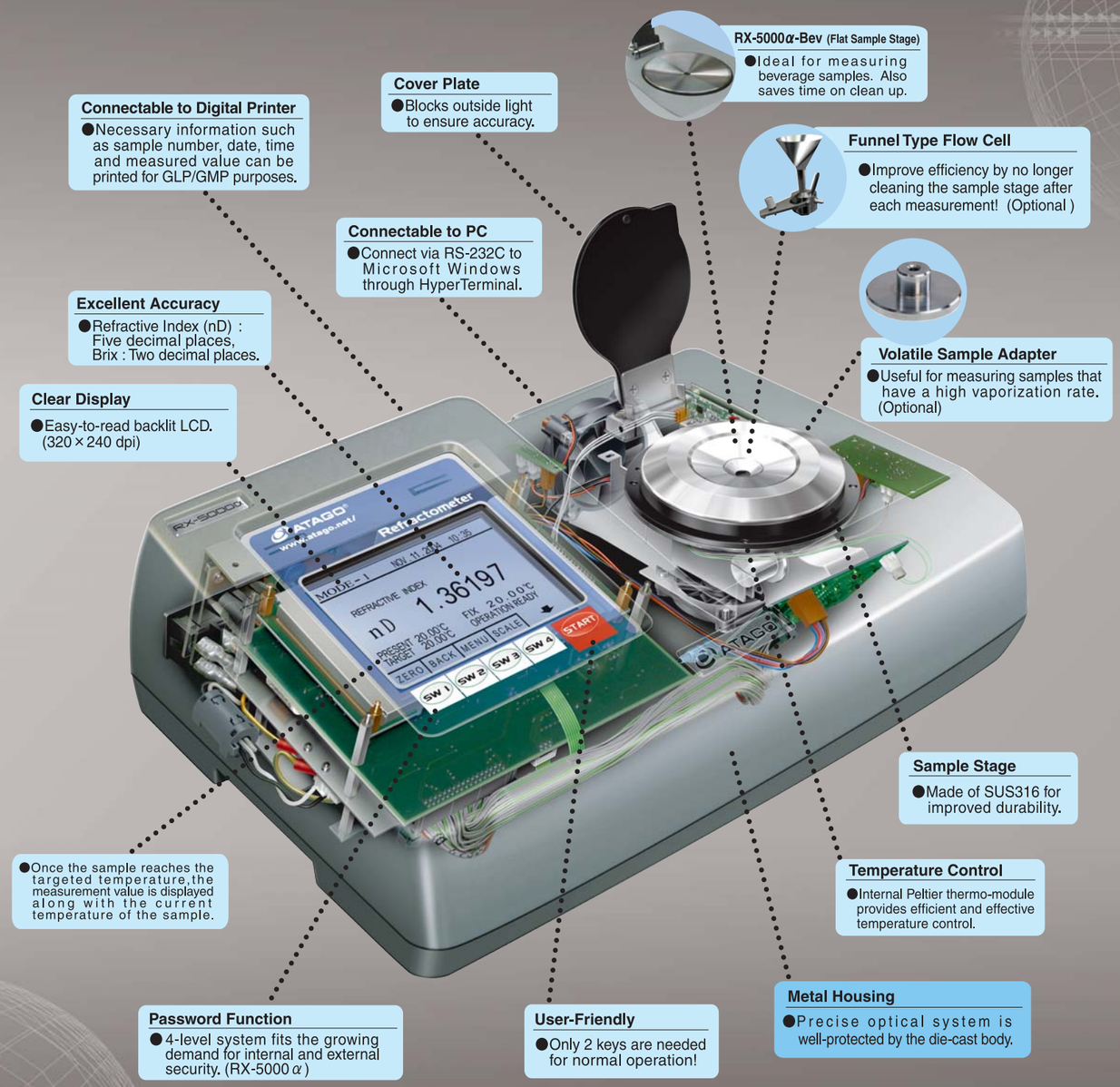
Measuring system	Optical-refraction critical-angle detection system
Light source	LED
Materials	Prism : Artificial Sapphire Sample stage : SUS316
Power supply	AC100V to 240V
Power consumption	50/60Hz, 480VA
Sample volume	Greater than 0.1ml
Environmental operating conditions	Temperature: 5 to 40℃, Humidity: Max.90%RH, Altitude (above sea level): Max. 5,000m

Optional	Digital printer DP-RX (Thermal dot) (Cat.No.3121)
	Digital printer DP-RD (Dot impact) (Cat.No.3122)
	Volatile sample adapter (RE-56152) for RX-9000α and RX-7000α
	Volatile sample adapter (RE-56151) for RX-5000α
	Flow Cell Attachment (RE-56155) for RX-9000α and RX-7000α
	Flow Cell Attachment (RE-56156) for RX-5000α
	Fan filter replacement (RE-58001)

◆RX-α Series Features◆

〈Each model has customized user-friendly features〉

①**Easy Measuring** : The RX-α offers three unique modes for measuring samples.
②**Easy Handling** : Automatically calculates a user scale when three points of measurement data are entered.
③**Easy Verification** : Memory function allows the user to look up the past 30 measurement values with the touch of a button!
④**Easy Viewing** : By setting upper and lower standard values, a graphic upper and lower limit bar can be displayed with the value. Easily see if your measurement is within your desired range.
⑤**Easy double checking**: The RX-α Series has a manual calibration function that compensates for the difference between standard liquids, or other units.



■Optional

Digital Printer
DP-RX (Cat.No.3121)

Printing method : Thermal dot
Power supply : AC adapter (AC100V)
Power consumption : 13VA
Dimension and weight : 17×16×7cm, 580g (main unit only)

Digital Printer
DP-RD (Cat.No.3122)

Printing method : Dot impact
Power supply : AC adapter (AC100V)
Power consumption : 7VA
Dimension and weight : 11×18×9cm, 470g (main unit only)

Fan filter replacement (RE-58001)

Fan filter replacement (12 sheets)

Sucrose solutions (For checking Brix)

RE-111001
Sucrose solution 10% (±0.01%)
RE-113001
Sucrose solution 30% (±0.01%)
RE-115002
Sucrose solution 50% (±0.02%)