**Automatic Titrator Karl Fischer Moisture Titrator** Density/Specific Gravity Meter

Refractometer

Thermal Measurement Instrument **Process & Environment** 

## Refractometer RA-620/-600

Minimum measurement in 2 seconds

**Touchscreen operation** 

One of the smallest to fit in A4 size (192 x 281mm)

Comes with KEM Refractive Index Standard Liquid

Completely ready for use

**Short warm-up time** 

Display & sound can be customized

Easy operation & maintenace-free

: D 1218 **ASTM** 

D 1569

D 1807

D 1992

D 2140

D 4056

D 4095

ICUMSA: GS 4/3-13

SPS-3

ISO : 1743

OIML : R 124

#### Agence Nord:

ZA Object'Ifs Sud - Lot A3 6 Allée Emilie du Châtelet 14123 Ifs

tél: 02.31.34.50.74 fax: 02.31.34.55.17

## ELTA LABO

#### Agence Sud:

Bât Le Venango. 392 Rue Jean Dausset AGROPARC - BP11575

84916 Avignon Cédex 9

tél: 04.90.27.17.95 fax: 04.90.27.17.52

#### Agence Est:

Parc Club des Tanneries 2 Rue de la Faisanderie 67380 Lingolsheim tél: 03.88.04.01.81 fax: 03.68.93.01.52

> www.deltalabo.fr info@deltalabo.fr





# Refractometer

## **Uniqueness**

## 1 Accuracy of One of the Highest in the World

Accuracy of  $\pm 0.00002$  nD (RA-620). (Measurement conducted under standard conditions of KEM.)

Reliable measurement with repeatability of ±0.00001 nD.

Tolerance of Brix of ±0.014%. (Calculated from accuracy of refractive index.)

## 2 Compact Size Benchtop Refractometer

(Built-in Temperature Control)

Space-saving of A4 Size, Two-thirds of Previous Models in Size (192mm×281mm)
(Comparison with previous models.)

Half of previous models in weight with aluminum die casting housing.

Can be installed anywhere in a limited space of lab.

## **3** Quick Measurement

Refractive index, Brix or concentration obtained in a short time: 2 sec. in the shortest. (When limit time is set to 2 sec.)

## 4 Comes with Refractive Index Standard Liquid (Pure Water)

KEM is the only manufacturer of refractometers that also produces the standard liquids.

Can be used to evaluate reliability.

## 5 Image of Critical Angle



An image of the Abbe measurement scale can be viewed.





#### **Features**

#### ■ 4.7-inch TFT Colour LCD & Touch Screen Operation



Straightforward & user-friendly operation. Display colours can be changed.

Easy view of various info.

#### Sample Cover Equipped with Anti Volatilization Device



Anti Volatilization Device Furnished on back side of sample cover to prevent sample liquid from volatilizing. Splash Prevention

Sample cover, when opened, prevents sample from being splashed on LCD. Secure Measurement Start button will not be activated when sample cover remains open.

## ■ Wide Range of Temperature Control

Temperature control range of 5~75°C. Suitable for measurement of high-melting-point petroleum or oil and fat. (Lower limit subject to ambient temperatures.)

### Easy to Clean Sample Stage



Easy operation with sample stage at the front.

### **Calibration Navigator**



Convenient and easy-to-follow navigator for calibration.

#### Indicator



Concentration range can visually be recognized.

## **Equipped with USB Port**



For data save and transfer to PC. (Saved in a CSV file.)

#### LAN & Browser Controls

Easy connection to PC with LAN. Control and data transfer possible through browser in your PC. No special software required.

#### Conversion to Concentration

Up to 100 conversion tables can be stored.

### **Application**



#### **Food & Beverages**

- Honey
- Starch syrup
- Liquid sugar
- Isomerized sugar
- Glucose
- Sweeteners
- Beet sugar
- Jam, marmalade
- Fat & oil
- Cooking oil
- Cottonseed oil
- Sesame oil

- Canola oil
- Olive oil
- Palm oil
- Coconut oil
- Condiments & seasonings
- Ketchup
- Vinegar
- Purée
- Soy sauce ■ Alcoholic drinks
- Beer
- Wine

- Japanese sake (rice wine)
- Whisky
- Soft drinks
- Carbonated drinks
- Fruit drinks
- Coffee drinks
- English tea
- Milk
- Soy milk
- Lactic acid drinks
- Fruits
- Oranges

- Grapes
- Pears
- Watermelons
- Melons
- Lemons
- Apples
- Grapefruit
- Pineapples
- Peaches
- Limes ■ Tomatoes

#### **Standards**

ICUMSA: GS 4/3-13 ISO

To check Brix.

: 1743 : R 124 OIML



#### Petroleum, Chemicals

- Light oil
- Kerosene
- Gasoline
- Cvclohexane

■ Injection solutions

- Benzene
- Styrene
- Toluene
- Xylene
- Quenching oils
- Cutting oils (cutting fluids)
- Lubricants
- Water-soluble lubricants
- Insulating oils
- Water-soluble hydraulic oils
- Water-soluble metal working oils
- Rust preventive oils
- Antifreeze
- Ethylene glycol
- Propylene glycol
- Surfactants
- Water-soluble quenching oils
- Electronic components

#### **Standards**

ASTM: D 1218 D 1569 D 1807 D 1992 D 2140

D 4056

To check concentration.

D 4095



#### Pharmaceuticals, Flavours & Fragrances, Cosmetics

- Shampoos
- Chinese herbal remedy ■ Hair conditioners
- Evedrops Detergents
  - Skin toner
- Hair tonic
- Medical services
- Serum
- Urine
- Ascites ■ Body fluids
- Disinfectants
- Ethyl alcohol ■ Hydrogen peroxide

To check concentration.

#### **FAQ**

■ Toiletries



### Q What are the features of RA-620/-600?

State-of-the-art design that cannot be seen with past models, and user-friendly operation, even suitable for the first-time users.

## Q What is the sample amount required?

A sample of 0.2mL or more is required.

## Q How long does it take to measure one sample?

A Minimum two (2) seconds. (May vary according to samples and ambient conditions.)

## Q What should I do after a measurement?

If the sample is an aqueous solution, wipe it off with water and ethanol using tissues or a soft cloth. If the sample is an organic solvent such as toluene, wipe it off with ethanol or acetone.

## Q Are there any consumables?

Nothing special. We recommend, however, that the dustproof filter be cleaned every one to two months. If dust persists, replace the filter. (P/N 12-01576-00-48 Filter Set (10 filters/set))

## How can I check the measurement accuracy?

A We recommend that our Refractive Index Standard Liquids be used to check the accuracy.

#### **Quick Reference**

1

## Wipe the sample stage and the prism to clean them.

Remaining samples or some other stuff on the sample stage or the prism may prevent you from conducting an accurate measurement.

2

## Drop a sufficient amount of sample on the prism to cover it entirely.

The minimum amount required is approx. 0.2mL. A small amount of sample may result in inaccurate measurement with some samples.

Meanwhile, too much sample liquid would make it longer to adjust the temperature and to complete the measurement.



3

## Close the sample cover.

Make sure to close the sample cover.

It is important to do so to block the exterior light and to achieve an accurate measurement.



4

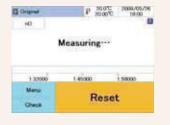
## Press "Start".



5

## Measuring...

"Start" changes to "Reset" once a measurement has started. Press "Reset" if you wish to stop the measurement.



6

## A measurement result appears.

Immediately wipe off the sample after measurement and clean the prism and the sample stage.

Leaving the sample there for a long time may make it difficult to clean the prism and the sample stage.



## **Options**



#### Sampler

Auto Cleaning and Sampling Unit DCU-551N



- Very convenient with samples of flavours/fragrances or drug materials.
- Capable of viscous samples up to 30,000mPa s.
   Measurement of one sample only in a 20mL vial.
   Connecting cable included.

#### **Multiple Sample Changer CHD-502N**



- Automatically cleans and drys measurement cell and connecting tubes.
  Capable of viscous samples up to 30,000mPa s.
  Measurement of up to 30 samples in 20mL vials.
  Connecting cable included.



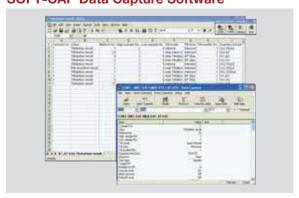
#### **Printer**

#### **Thermal Printer DP-600**



## Software

#### **SOFT-CAP Data Capture Software**



• Data transfer to your PC in a CSV file.

#### **Dot Matrix Printer IDP-100**





#### Standard Liquid

#### **Refractive Index Standard Liquids**



## **Optional Refractive Index Standard Liquid**

### KEM is the only manufacturer of refractometers that also produces the standard liquids.

Part Name	Part Code	nD at 20°C	Note (2 bottles per set)
Pure Water	61-001-0200-48	1.33299	One set of 2 bottles
Isooctane	61-001-0300-48	1.391**	Set of pure water and isooctane
Cyclohexane	61-001-0400-48	1.426**	Set of pure water and cyclohexane
Dichlorotoluene	61-001-2200-48	1.546**	Set of pure water and dichlorotoluene
Dibenzyl ether	61-001-0600-48	1.563**	Set of pure water and dibenzyl ether
1-Bromonaphthalane*1	61-001-0700-48	1.658**	Set of pure water and 1-bromonaphthalene

<sup>\*1-</sup>Bromonaphthalane is out of range of measurement for RA-620.

## **Brix Converted Standard Liquid of Refractive Index**

Part Name	Part Code	Brix% nD at 20°C	Note (2 bottles per set)
5 Brix solution	61-001-1100-48	5.** Brix% 1.340**	Equivalent to 5 Brix% One set of 2 bottles
10 Brix solution	61-001-1200-48	10.** Brix% 1.347**	Equivalent to 10 Brix% One set of 2 bottles

## **Recommend Consumables and Parts**

Part Name	Part Code	Note
Printer Roll (4rolls)	98-829-0001S	For IDP-100 Dot Matrix Printer
Ribbon cartridge	98-829-0054	Black, For IDP-100 Dot Matrix Printer
Ribbon cartridge	98-829-0054S	5pcs/set Black, For IDP-100 Dot Matrix Printer
Thermal Paper Roll (10rolls)	69-00522-11-48	For DP-600 Thermal Printer
Filter Set	12-01576-00-48	10 filters/set

## **Standard Parts**

Part Name	Part Number	Quantity
Main Unit	RA-620 or RA-600	1 unit
AC Adapter	<u></u> *1	1 set
Stylus	69-00444-00-48	1 piece
Pure Water (set of two Refractive Index Standard Liquids)	61-001-0200-48	1 set
Operation Manual	69-00462-01-48	1 сору
Function Description	69-00463-01-48	1 сору
Quick Manual	69-00464-01-48	1 copy
Warranty	-	1 copy

<sup>\*1 :</sup> Varies by power supply requirement

Detection of Critical Angle of Optical Retractive Conduction Control Contr			RA-620	RA-600		
Measuring Range Rang	Measuring Method		Detection of Critical Angle of Optical Refract	ion		
Measuring Ranging Ran	-					
Brix         0.00 - 100.00%           Accuracy " Britantive Index (nD)         # 0.000022         # 0.0001           Brix         # 0.00001         # 0.0001         # 0.0001           Repeatability " Britantive Index (nD)         # 0.00001         # 0.0001         # 0.0001           Resolution Brix         # 0.0001         # 0.0001         # 0.0001           Resolution Brix         0.0001         0.0001         0.0001           Temperature Contract         Petiter Thermostat 5°C - 75°C°         # 0.1%C           Temperature Bouldoot In Resolution         0.01°C         0.1°C           Minimum Anount of Sample         0.22mL         # 0.0000           Security         7 0.000         7 0.000         1.0000           Special Storage         Number of Methods         100 methods         1.0000         1.00	Measuring Items					
Accuracy**	Measuring Range	Refractive Index (nD)	1.32000 ~ 1.58000	1.3200 ~ 1.7000		
Brix         ± 0.014%** (0 - 85.0%)         ± 0.0001           Repeatability**         A practive Index (nD)         ± 0.00001         ± 0.0001           Breadution         Refractive Index (nD)         0.00001         0.00001           Resolution         Refractive Index (nD)         0.00001         0.00001           Temperature Contract         Pellier Thermostat 5°C - 75°C*         Temperature Index to the Index (nD)         0.1°C           Minimum Amount of Sample         0.2mL         Temperature Contractive Index (nD)         0.1°C           Display         4.7-inch TFT         Temperature Contractive Index (nD)         0.1°C           Operation         Touch Screen (Comes with Stylus.)         Temperature Index (nD)         0.1°C           Security         Passor of Protection         Temperature Index (nD)         100 methods		Brix	0.00 ~ 100.00%			
Repeatability**         Refractive Index (nD)         = 0.00001         = 0.0001           Resolution         Refractive Index (nD)         = 0.001%         0.0001           Resolution         Refractive Index (nD)         0.001%         0.0001           Temperature Indicators Resolution         0.01%         0.1%         0.1%           Minimum Amount Service In Solution         0.01%         0.1%         0.1%           Minimum Amount Service In Solution         0.01%         0.1%         0.1%           Operation         4.7-finch TFT	Accuracy <sup>1</sup>	Refractive Index (nD)	±0.00002	±0.0001		
Resolution         Brix         ± 0.01%         ± 0.00001           Resolution         4 perfactive Index (nD)         0.00001         0.00001           Temperature Control         Petitier Themostat 5°C - 75°C°           Temperature Indication         Bout 100 number of Methods         0.2mL           Display         4 -7-inch TFT           Operation         Peasword Protection           Socurity         Peasword Protection           Data Storage         Mumber of Methods         100 methods           Socurity         Peasword Protection           Data Storage         100 methods           Massurement Results         300 data           Califaction Record         20 data           Califaction Record         All partial (C		Brix	±0.014% <sup>12</sup> (0 ~ 85.0%)	±0.1%		
Resolution         Refractive Index (nID)         0.00001         0.0001           Temperature Centrol         Peither Thermostat. 5°C ~ 75°C°         0.1%           Temperature Indicators         Peither Thermostat. 5°C ~ 75°C°         0,1°C           Minimum Amount of Temperature Indicators         0.2mL         0.2mL           Display         4.7-inch TFT	Repeatability *3	Refractive Index (nD)	±0.00001	±0.0001		
Brix         0.01%         0.1%           Temperature Indication         Pelitier Thermostat 5°C - 75°C°           Temperature Indication Resolution         0.01°C           Minimum Anount of Sample         0.01°C           Minimum Anount of Sample         0.01°C           Minimum Anount of Sample         1.7 colspan="2">0.01°C           Minimum Anount of Sample Anounce of Minimum Anounce of Minim		Brix	±0.01%	±0.1%		
Temperature Control         Pelitier Thermostat 5°C ~ 75°C°¹           Temperature Indication         Besolution         0.01°C         0.1°C           Minimar Amount of Sample         0.01°C         0.2mL           Display         4.7-inch TFT           Operation         Touchscreen (Comes with Stylus.)           Security         Password Protection           Security         Password Protection           Manuford Methods         100 methods           Measurement Results         300 data           Calibration Record         20 data           Calibration Record         20 data           Compensation         Calibration Record         20 data           Compensation         Password Protection           Compensation         Cyperation Stoppersourcessources of Cyperation Stoppersources of Cyperation Table.)         Cyperation Table.)         Cyperation (Cyperation)         Cyperation (Cyperation)         Cyperation (Cyperation)         Cyperation (Cyperation)         Cyperation (Cyperation)	Resolution	Refractive Index (nD)	0.00001	0.0001		
Temperature Indicators         Note of the importance of the im		Brix	0.01%	0.1%		
Minimum Amount of Smple         0.2mL           Display         4.7-inch TFT           Operation         Touchscreen (Comes with Stylus.)           Security         Password Protection           Data Storage         Number of Methods         100 methods           Adaptation Record         20 data           Check Record         20 data           External Storage         USB Flash Drive           Compensation         5.00 ~ 75.00°C           Compensation         (Automatic compensation by preprogrammed conversion table.)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           WiB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-23C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192(W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Dwale         Card Box         Artificial Sapphire           With Samples         Susple	Temperature Control		Peltier Thermostat 5°C ~ 75°C'4			
Display         4.7-inch TFT           Operation         Touchscreen (Comes with Stylus.)           Security         Password Protection           Data Storage         Mumber of Methods         100 methods           Measurement Results         300 data           Calibration Record         20 data           Check Record         20 data           Compensation         Check Record         USB Flash Drive           Compensation         Compensation by preprogrammed conversion table.)           Compensation         My Concentration         By Conversion Table         100 data           Compensation Day preprogrammed conversion table.)         Compensation Table         100 data           Compensation Interfaces         LAN         1 port (for USB flash drive, A4-size printer, barcode reader, keyboard)           Massistance         Capots (for USB flash drive, A4-size printer, barcode reader, keyboard)           Massistance         Capots (for USB flash drive, A4-size printer, barcode reader, keyboard)           Capots (for USB flash drive, A4-size	Temperature Indication	on Resolution	0.01°C	0.1°C		
Security         Password Protection           Security         Password Protection           Data Storage         Mumber of Methods         100 methods           Measurement Results         300 data           Celck Record         20 data           External Storage         USB Flash Drive           Temp.         5.00 ~ 75,00°C           Compensation         (Automatic compensation by preprogrammed conversion table.)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           R8-232C         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           R8-232C         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           Power Supply         Formperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Consumption         AC 100 ~ 240V, 50/60Hz (Cornes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in Druble Carton Bo	Minimum Amount of	Sample	0.2mL			
Coperation         Touchscreen (Comes with Stylus.)           Security         Password Protection           Data Storage         Mumber of Methods         100 methods           Measurement Results         300 data           Colspan="2">Cols	Display		4.7-inch TFT			
Data Storage         Number of Methods         100 methods           Measurement Results         300 data           Calibration Record         20 data           Check Record         20 data           Temp.         5.00 ~ 75,00°C           Compensation         (Automatic compensation by preprogrammed conversion table.)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Consumption         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         Skg           Export Packing in D-Location Box         GW 9, 1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)           Materials in Contact With Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Op-600, IDP-100         Sampler			Touchscreen (Comes with Stylus.)			
Data Storage         Number of Methods         100 methods           Measurement Results         300 data           Calibration Record         20 data           Check Record         20 data           Temp.         5.00 ~ 75.00°C           Compensation         (Automatic compensation by preprogrammed conversion table,)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max, 50W, min, 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Dotal         Prism         Artificial Sapphire           Materials in Contact With Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Op-600, IDP-100         Sampler         De-600, IDP-100 <td>Security</td> <td></td> <td>Password Protection</td> <td colspan="3"></td>	Security		Password Protection			
Measurement Results         300 data           Calibration Record         20 data           Check Record         20 data           External Storage         USB Flash Drive           Temp.         5.00 ~ 75,00°C           Compensation         (Automatic compensation by preprogrammed conversion table,)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Consumption         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max, 50W, min, 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in Contact         Prism         Artificial Sapphire           Materials in Contact         Prism         Artificial Sapphire           Materials in Contact         Printer         DP-600, IDP-100           Sample Stage         SUS316	· · · · · · · · · · · · · · · · · · ·	Number of Methods				
Check Record         20 data           External Storage         USB Flash Drive           Temp.         5.00 ~ 75.00°C           Compensation         By Conversion Table         100 data           Long Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in Double Carton Box         G/W 9,1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)           Materials in Contact With Samples         Prism         Artificial Sapphire           Supple Stage         SUS316           Option         Printer         DP-600, IDP-100           Sample stage         SUS-51N, CHD-502N           Software         SOFT-CAP	Ü	Measurement Results				
External Storage         USB Flash Drive           Temp.         5.00 - 75.00°C           Compensation         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max, 50W, min, 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in D-tab Carton Box         G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)           Materials in Contact With Samples         Prism         Artificial Sapphire           Sumple Stage         SUS316           Option         Printer         DP-600, IDP-100           Sample Reader         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid		Calibration Record				
Temp.         5.00 − 75.00°C           Compensation         (Automatic compensation by preprogrammed conversion table.)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           With Samples         Sumple Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement cond		Check Record				
Temp.         5.00 − 75.00°C           Compensation         (Automatic compensation by preprogrammed conversion table.)           Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           With Samples         Sumple Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement cond		External Storage				
Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases,)           Materials in Contact with Samples         Prism         Artificial Sapphire           With Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	Temp.	Ţ.				
Concentration         By Conversion Table         100 data           Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) x 281 (D) x 166 (H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases,)           Materials in Contact with Samples         Prism         Artificial Sapphire           With Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	·					
Interfaces         LAN         1 port for personal computer (PC)           USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192(W) × 281(D) × 166(H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560(W) x 460(D) x 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           With Samples         Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	<u> </u>	By Conversion Table				
USB1.1         2 ports (for USB flash drive, A4-size printer, barcode reader, keyboard)           RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Duble Carton Box         G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           with Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sample Today         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	Interfaces	•				
RS-232C         2 ports (for IDP-100, multiple sample changer)           Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Doble Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid		USB1.1				
Ambient         Temperature         5 ~ 35°C           Conditions         Humidity         85%RH or below (No condensation allowed.)           Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Double Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid		RS-232C				
Power Supply         AC 100 ~ 240V, 50/60Hz (Comes with AC adapter.)           Power Consumption         20W (max. 50W, min. 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Double Carton Box         G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	Ambient	Temperature	· · · · · · · · · · · · · · · · · · ·			
Power Consumption         20W (max, 50W, min, 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Do⊔ble Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	Conditions	Humidity				
Power Consumption         20W (max, 50W, min, 10W)           Dimensions         192 (W) × 281 (D) × 166 (H) mm           Weight         5kg           Export Packing in Do⊔ble Carton Box         G/W 9.1kg 560 (W) × 460 (D) × 330 (H)mm (May vary in some cases.)           Materials in Contact with Samples         Prism         Artificial Sapphire           Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	Power Supply	·				
Dimensions     192 (W) × 281 (D) × 166 (H) mm       Weight     5kg       Export Packing in Double Carton Box     G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)       Materials in Contact with Samples     Prism     Artificial Sapphire       Sample Stage     SUS316       Option     Printer     DP-600, IDP-100       Sampler     DCU-551N, CHD-502N       Software     SOFT-CAP       Expandability     Barcode Reader     Reads sample name, measurement conditions, value of standard liquid						
Weight     5kg       Export Packing in Double Carton Box     G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)       Materials in Contact with Samples     Prism     Artificial Sapphire       Sample Stage     SUS316       Option     Printer     DP-600, IDP-100       Sampler     DCU-551N, CHD-502N       Software     SOFT-CAP       Expandability     Barcode Reader     Reads sample name, measurement conditions, value of standard liquid						
Export Packing in Double Carton Box  G/W 9.1kg 560 (W) x 460 (D) x 330 (H)mm (May vary in some cases.)  Artificial Sapphire  Sample Stage  SUS316  Option  Printer  DP-600, IDP-100  Sampler  DCU-551N, CHD-502N  Software  SOFT-CAP  Expandability  Barcode Reader  Reads sample name, measurement conditions, value of standard liquid	Weight					
Materials in Contact with Samples         Prism         Artificial Sapphire           Option         Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid		uble Carton Box	-			
with Samples         Sample Stage         SUS316           Option         Printer         DP-600, IDP-100           Sampler         DCU-551N, CHD-502N           Software         SOFT-CAP           Expandability         Barcode Reader         Reads sample name, measurement conditions, value of standard liquid	, ,					
Option     Printer     DP-600, IDP-100       Sampler     DCU-551N, CHD-502N       Software     SOFT-CAP       Expandability     Barcode Reader     Reads sample name, measurement conditions, value of standard liquid		Sample Stage				
Sampler DCU-551N, CHD-502N Software SOFT-CAP  Expandability Barcode Reader Reads sample name, measurement conditions, value of standard liquid	Option	· · · · ·				
Software SOFT-CAP  Expandability Barcode Reader Reads sample name, measurement conditions, value of standard liquid	•	Sampler				
Expandability Barcode Reader Reads sample name, measurement conditions, value of standard liquid		<u> </u>				
	Expandability					
	i	PC Software	Data Acquisition Software			

<sup>\*1 :</sup> By KEM's standard measurement conditions. \*2 : From RI accuracy of results.



Yamawaki Bldg, 9F 4-8-21, Kudan-minami, Chiyoda-ku, Tokyo 102-0074 Japan

TEL +81-3-3239-7333 FAX +81-3-3237-0537 www.kyoto-kem.com

<u>Agence Nord:</u> ZA Object'lfs Sud - Lot A3 6 Allée Emilie du Châtelet 14123 Ifs tél: 02.31.34.50.74

fax : 02.31.34.55.17

#### Agence Sud:

Bât Le Venango. 392 Rue Jean Dausset AGROPARC - BP11575 84916 Avignon Cédex 9 tél : 04.90.27.17.95 fax : 04.90.27.17.52

**DELTA LABO** 

Agence Est:
Parc Club des Tanneries
2 Rue de la Faisanderie 67380 Lingolsheim tél: 03.88.04.01.81

fax: 03.68.93.01.52

www.deltalabo.fr info@deltalabo.fr

<sup>\*3 :</sup> By KEM' s standard measurement conditions. Subject to sample properties. \*4 : Lower limit 12°C below ambient.