

Guide Line Auto Refractometer



1. What is the differences between Automatic Refractometer and Abbe Refractometer?

- Automatic Refractometer can measure liquid, Abbe Refractometer can measure both solid and liquid.
- Abbe Refractometer measuring liquid has certain requirements, such as thick and dark sample can lower its measuring accuracy, but Automatic Refractometer need not take these factors into consideration.

2. Which field does Refractometer used in?

It can be widely used in petroleum, oil, medicine, paint, food, daily chemicals, sugar making and other industries.

3. Why we need control temperature when measure refractive index?

Temperature can affect refractive index of substance, and temperature affecting different substance is different. Temperature deviation of the same substance is not linear, only a few substances have temperature deviation coefficient or temperature deviation table, but most of substances testing need at a prescribed temperature.

4. How the temperature effects on testing result of sample?

Different substance influencing on temperature is uncertain, and the same substances refractive index change rate is not a linear at different temperature. Some substance temperature has a great influence on refractive index, each deviation of refractive index change more than 0.001. Some substance refractive index is insensitive to temperature, each deviation of refractive index may only change 0.0001.

5. What's the advantage of products with built-in Peltier temperature control system?

Compared with external connection water bath, Peltier temperature control system has the advantages of small control temperature volume and fast speed. Built-in Peltier can be convenient for user to set various of testing requirements, avoiding multiple instruments coordinate working together caused error or mistake.

6. A620 need connect water bath. Are there any requirements for refrigerated water bath?

There are three requirements:

1. Need with refrigeration
2. Need external circulator
3. Stability requires at least 0.1°C

7. Why measuring prism of Refractometer uses sapphire glass as raw material?

Traditional Refractometer adopt ordinary glass prism, but ordinary glass prism is not durable and service life is short. High hardness sapphire avoid the problem of natural sapphire impurity affect refractive index, with excellent properties against corrosion and scratches, greatly prolong service life.

8. What detector does Automatic Refractometer use?

Automatic Refractometer uses high-resolution CCD detector, can accurately and efficiently complete various samples analysis experiment by exclusive signal acquisition analysis processing technology

9. What are the advantages of CCD detector?

Use CCD detector instead of eyes, the advantages as below:

- Can greatly improve the resolution, avoiding man-made error, make the accuracy improved a high level.
- Improve the test speed, make the efficiency greatly improved.

10. Can Hanon Refractometer measure substance with color ? Why?

Hanon Automatic Refractometer Series, not only adopt CCD detector with the highest performance on currently market, but also make special optimized process. The instrument basically can measure any color liquid, and having very high sensitivity.

11. Does Refractometer need to calibration? How to calibrate?

Refractometer needs to calibrate. Hanon Automatic Refractometer provides users with single-point calibration. The users only need to calibrate distilled water, or a certain standard sample prepared by the users themselves.

Automatic Refractometer

A650/A620/A610 Automatic Refractometer includes high-performance CCD light-sensitive part, can accurately and efficiently complete sample analysis tests through exclusive signal acquisition, analysis and processing technology. A650/A620/A610 can automatically measure the refractive index (nD) of transparent or translucent liquids and mass fraction (Brix) of sugar solution, is accurate, reliable, quick, easy for operation and so on.



Food



Cosmetic



Pharmaceuticals



Oil chemical

Characteristics

- High-resolution CCD detector offers automatic measurement, avoiding personal errors, having higher accuracy.
- Extremely large storage capacity can store up to 1000 groups of data information automatically.
- Exclusive signal acquisition, analysis and processing technology ensures accurate measurement results.
- Large color touch screen display and innovative WINDOWS software interface give extremely convenient device operation and data acquisition.



Ultra long life light source

It adopt High brightness LED lights with service life exceeding 100000 hours, less time ready for use, save your cost and time.

Auto temperature control system

A650 adopts peltier temperature control system, make sure the whole testing with accuracy and constant temperature.

Perfect measuring prism

Measuring prism is made of high hardness sapphire glass, of excellent properties against corrosion and scratches, free for clean and durable.

Multiple data output interface

External USB and RS232 ports can be directly connected to PC, USB disk and SD card interfaces are easy for data export and backup.

Note: "•" with the same technical index; "—" without

Technical data:

| | A650 | A620 | A610 |
|--|-------------------------------|--------------------|------|
| Refractive index measuring range (nD) | 1.3000-1.7000 | • | • |
| Measured value error: (nD) | ±0.0002 | • | • |
| Measurement resolution (nD) | 0.0001 | • | • |
| Scope of sugar solution mass fraction (Brix) | 0-95% | • | • |
| Measured value error (Brix) | ±0.1% | • | • |
| Measurement resolution (Brix) | 0.1% | • | • |
| Temperature control mode | Built-in semiconductor | Built-in flow cell | — |
| Scope of temperature display | 0-50°C | • | • |
| Temperature resolution | 0.1°C | • | • |
| Temperature control range | 15°C-30°C | — | — |
| Temperature control accuracy | 0.1°C | — | — |
| Interface | RS232/USB/SD card/ U disk | • | • |
| Data storage capacity | 1,000 pieces; | • | • |
| Display modes | 5.6 inches, TFT, touch screen | • | • |
| Power supply | 220VAC±10%, 50Hz | • | • |
| Power | 100w | 50W | • |
| Net weight | 12kg | 10kg | 10kg |
| Dimension | 455mmx312mmx200mm | | |

A610/A620/A670 Automatic Refractometer

Hanon A670/A620/A610 Automatic Refractometer includes high-performance CCD light-sensitive part, can accurately and efficiently complete sample analysis tests through exclusive signal acquisition, analysis and processing technology. A670/A620/A610 can automatically measure the refractive index (nD) of transparent or translucent liquids and mass fraction (Brix) of sugar solution, is accurate, reliable, quick, easy for operation and so on.



A670



A620/A610



Food



Cosmetic



Pharmaceuticals



Oil chemical

Ultra long life light source

It adopt High brightness LED lights with service life exceeding 100000 hours, less time ready for use, save your cost and time.

Auto temperature control system

A670 adopts peltier temperature control system, make sure the whole testing with accuracy and constant temperature.

Perfect measuring prism

Measuring prism is made of high hardness sapphire glass, of excellent properties against corrosion and scratches, free for clean and durable.

Innovatively cloud service system

A670 let the cloud data with instruments connected, lead the laboratory to Cloud generation.

Characteristics

A610/A620

- High-resolution CCD detector offers automatic measurement, avoiding personal errors, having higher accuracy.
- Extremely large storage capacity can store up to 1000 groups of data information automatically.
- Exclusive signal acquisition, analysis and processing technology ensures accurate measurement results.
- Large color touch screen display and innovative WINDOWS software interface give extremely convenient device operation and data acquisition.

A670

- Could service system, connecting cloud database with instruments, data storage is unlimited;
- 7inch color touch screen, Windows type operating interface, One-touch testing, let the operating and data reading more convenient;
- 2 USB port, RS232 port and internet port for connecting printer or internet, U disk and SD card port for data exporting.
- Completely meet the requirements of user ID classification & tracking, E-signature, and Data tamper-proof, which listed in 21CFR part 11.

Technical data:

| | A670 | A620 | A610 |
|--|------------------------------|------------------------------|------------------------------|
| Refractive index measuring range (nD) | 1.30000-1.70000 | 1.3000-1.7000 | 1.3000-1.7000 |
| Measured value error (nD) | ±0.0001 | ±0.0002 | ±0.0002 |
| Measurement resolution (nD) | 0.0001/0.00001 | 0.0001 | 0.0001 |
| Scope of sugar solution mass fraction (Brix) | 0-100% | 0-95% | 0-95% |
| Measured value error (Brix) | ±0.05% | ±0.1% | ±0.1% |
| Measurement resolution (Brix) | 0.1%/0.01% | 0.10% | 0.10% |
| Temperature control mode | Built-in semiconductor | flow cell | — |
| Scope of temperature display | 10-85°C | 0-50°C | 0-50°C |
| Temperature control range | 5-70 °C | — | — |
| Temperature control accuracy | ±0.05°C | — | — |
| Interface | RS232/USB/Ethernet Interface | RS232/USB/SD card/U disk | RS232/USB/SD card/U disk |
| Data storage capacity | 4G | 1000 pieces | 1000 pieces |
| Display modes | 7 inches, TFT touch screen | 5.6 inches, TFT touch screen | 5.6 inches, TFT touch screen |
| Power supply | 110V-240V(12V.10A) | 220VAC±10%, 50Hz | 220VAC±10%, 50Hz |
| Power | 45W | 50W | 50W |
| Net weight | 12kg | 10kg | 10kg |
| Dimensions | 365mm×300mm×150mm | 455mm×312mm×200mm | 455mm×312mm×200mm |