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### Brand positioning:

Analytical instrument manufacturer, laboratory solution provider!

### Company introduction:

Shanghai Yuke Industry Co., Ltd. was established in 1999. It is a leading manufacturer of analytical instruments and laboratory equipment in China, and is known as a high-quality instrument manufacturer and perfect service provider. Committed to the research and innovation of scientific instruments and analytical methods in the food and pharmaceutical industries, in order to promote green food and health drugs, develop and produce analytical measuring instruments, and provide technical workers with application methods and comprehensive solutions.

Yuke professional R&D laboratory instruments include: **Thermal Analyzer (DSC/TGA/STA), Microwave Digester, Dissolution system, Melting point meter, Polarimeter, Refractometer, Density meter, Turbidity meter, Dropping point & Softening point tester, Micro heating table, Potentiometric Titration, Moisture meter, Osmometer, Viscosity meter, Hardness tester, Flash point tester**. They are widely used in pharmaceutical and food quality control, education and research, environmental science, chemical engineering and other fields.

Yuke has established strict working standards and technical standards in R&D, parts procurement, standardized manufacturing, and production inspection. Yuke has obtained CE certification, TART certification, ISO quality management system certification, more than 10 software copyrights and multiple patents to ensure that each instrument has stable performance and excellent quality. Yuke headquarters was established in Shanghai, China, with 15 sales branches in China, sales agents in more than 10 overseas countries, and 2 production plants. At the same time, we have a top R&D team returned from Europe and America, cooperate with our superb manufacturing team, professional sales team and dedicated service team, working together to provide customers with high-tech, high-quality products and efficient, convenient, Comprehensive pre-sales and after-sales professional services.

At present, Yuke's products have been exported to more than 50 countries including the United States, Germany, France, Malaysia, Vietnam, India, Italy, etc. We are committed to participating in Arablab, PICCTON, Analytica Russia, Lab Africa, Analytica Germany, Analytica Latin America and other exhibitions. Open up different markets, and enjoy a good reputation with reliable quality, reasonable prices and good service to win a large market share.

Yuke is committed to providing customers with a better user experience and hopes to become a world-class scientific instrument manufacturer and laboratory solution provider!





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## 1. Melting point Apparatus

### 1.1 Smart Series - Automatic melting point Apparatus



#### Brief Introduction

Melting point meter is an instrument for measuring the melting point of a substance. The melting point of a substance refers to the temperature at which the substance changes from solid to liquid. In the field of organic chemistry, the determination of the melting point is the basic means to identify the nature of a substance, and also one of the important methods for the determination of purity.

Shanghai Yuke automatic melting point instrument series perfectly combine high-precision temperature control technology and high-definition video camera technology, not only to provide users with accurate, stable and reliable test results, but also to bring users efficient and convenient test experience. High-definition video can easily and clearly see the whole process of sample melting, automatic detection real-time Tupu display, convenient for users to accurately measure the sample melting point and melt distance.

#### Fields of use

1. Melting point meter plays an important role in chemical industry and medical research. It is a necessary instrument for the production of drugs, spices, dyes and other organic crystal substances. Corresponding enterprises (pharmaceutical related enterprises, chemical enterprises)
2. Universities and Research Institutes (chemical and pharmaceutical related schools and research institutes)
3. Government supervision departments (Entry-Exit Inspection and Quarantine Food and Drug Administration, Grain Administration, etc.)

#### The main features

1. HD recording function, easy to observe and look back.
2. Large temperature range from room temperature to 420°C.
3. The heating rate is adjustable from 0.1°C/Min to 20°C/Min without pole.
4. Enlarge HD color screen window.
5. Four samples can be determined simultaneously.
6. Printer can be connected to realize real-time data printing and historical data printing.
7. Comply with Pharmacopoeia test methods, including European Pharmacopoeia, United States Pharmacopoeia and Chinese Pharmacopoeia.
8. Compliance with 21Smart Part 11, audit trail, pharmacopoeia and electronic signature.

#### Technical parameters



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Model	Smart-M30	Smart-M50	Smart-M70	Smart-M80	Smart-M90	Smart-M130
Temperature range	RT -360℃	RT -420℃	RT -360℃	RT -400℃	RT -420℃	RT -420℃
Detection method	Semi-automatic	Semi-automatic	Automatic with manual	Automatic with manual	Automatic with manual	Automatic with manual
Processing capacity	4 pcs per batch					
Test mode	Melting point	Melting point	Melting point	Melting point	Melting point	Melting / boiling / cloud / slip point
Temperature resolution	0.01℃					
Heating rate	0.1℃--20℃ (200 gears, steplessly adjustable)					
Temperature control mode	PID precise temperature control, fully enclosed design of the furnace body					
Accuracy	±0.3℃ (<250℃) ±0.5℃ (>250℃)	±0.2℃ (<250℃) ±0.4℃ (>250℃)	±0.3℃ (<250℃) ±0.5℃ (>250℃)	±0.2℃ (<250℃) ±0.4℃ (>250℃)	±0.2℃ (<250℃) ±0.4℃ (>250℃)	±0.2℃ (<250℃) ±0.4℃ (>250℃)
Repeatability	Melting point repeatability was ±0.1℃ at 0.1℃/Min					
Magnification	9 times					
Display method	10.4 inch FTF color touch color screen					
Data storage	32G	64G	32G	64G	128G	128G
Graph save	200 units	400 units	200 units	400 units	600 units	600 units
Map	-	-	Any zoom	Any zoom	Any zoom	Any zoom
User management	YES / Level 4 authority					
Audit trails	YES					
21 Smart part 11	YES					
Custom method libraries	YES					
Export file verification MD5	YES					
Printing	WIFI , serial port					
Export format	PDF & EXCEL					
Data interface	USB ,RS232, SD,Wi-Fi、 RJ45、 U disk					
Small capillary size	OD: Φ1.3mm ID:Φ1.1mm					
Large capillary size	-	-	-	-	-	OD: Φ4.2mm ID:Φ3.8mm
Packing Size	430*320*370mm					
Power supply	110-230V,50/60Hz,120W					
Gross Weight	6.5kg					



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## 1.2 YK Series - Melting point Apparatus



Model	YK30	YK40	YK50	YK60	YK70	YK80	YK90
Temperature range	RT -350°C	RT -350°C	RT -400°C	RT -400°C	RT -350°C	RT -400°C	RT -420°C
Detection method	Manual	Automatic & Manual	Manual	Automatic & Manual	Automatic & Manual	Automatic & Manual	Automatic & Manual
Processing capacity	4 pcs per batch						
Test mode	Melting point						
Temperature resolution	0.1°C						
Heating rate	0.1°C--20°C , (200 gears, steplessly adjustable)						
Accuracy	±0.3°C (<250°C) ±0.5°C (>250°C)						
Repeatability	Melting point repeatability was ±0.1°C at 0.1°C/Min						
Exploration mode	NO	NO	NO	YES	NO	YES	YES
Video function	NO	NO	video, graph	NO	video, graph	video, graph	video, graph
Video playback	NO	NO	YES	NO	NO	YES	YES
Magnification	7 times						
Display method	TFT HD color screen						
Data storage	8G	-	8G	-	8G	16G	32G
Graph save	-	10 units	-	10 units	10 units	20 units	80 units
User management	NO	YES, 4units	YES, 8 units	YES, 8 units	YES, 8 units	YES, 10 units	YES, 20 units
Data saving	200 units	200 units	400 units	400 units	400 units	600 units	1000 units
Experimental scheme	-	-	-	-	-	40 units	100 units
<b>21 Smart part 11</b>	<b>NO</b>						
Data interface	USB , RS232, RJ45						
Capillary size	OD: Φ1.4mm ID: Φ1.2mm				OD: Φ1.4mm ID: Φ1.0mm		
Packing Size	430*320*370mm						
Power supply	110-230V,50/60Hz,120W						
Gross Weight	6.5 kg						

### 1.3 Smart-MY series & YKY Series - Grease/Oil melting point apparatus (for block and paste)



#### Brief Introduction

Automatic grease melting point meter can quickly and accurately determine the melting point of various block and paste samples. 3 samples can be measured simultaneously. Through the digital optical sensor, the whole experiment process is digitized and transmitted to the computer, the intelligent software can automatically judge the melting point of oil, eliminate the subjective error of judging the melting point, and reduce the labor intensity of the experimenter. The instrument has its own heating system, which can ensure a stable heating rate. The platinum temperature sensor has the advantages of fast response and high accuracy compared with the traditional method of using mercury thermometer.

#### Stander

In line with SNT0801.5-2015, GB/T24892-2010, GBT127662008 standards

#### The main features

- 1: With refrigeration system, 3 samples can be processed at a time;
- 2: One-key automatic detection function, effectively avoid human error;
- 3: PID precise temperature control;
- 4: Can record and playback the experiment process, not missing every detail;
- 5: In full compliance with the national standard and ISO oil melting point determination method

#### Technical parameters


Model	YKY30	YKY50	YKY80	YKY90
Temperature display range	0-350°C	0-100°C	0-400°C	0-100°C
Temperature control range	RT-350°C	(RT -20)-100°C	RT-400°C	(RT -20)-100°C
Temperature resolution	0.1°C			
Heating gradient	0.1°C-20°C/ minutes	0.1°C-10°C/ minutes	0.1°C-20°C/ minutes	0.1°C-10°C/ minutes
Cooling rate	Wind cooling	Semiconductor cooling	Wind cooling	Semiconductor cooling
Temperature accuracy	±0.3°C (<100°C) ±0.5°C (>100°C)	±0.3°C (<100°C)	±0.2°C (<100°C) ±0.4°C (>100°C)	±0.2°C (<100°C)

Repeatability	Melting point repeatability was $\pm 0.1^{\circ}\text{C}$ at $0.1^{\circ}\text{C}/\text{Min}$			
Detection method	Manual	Semi-automatic	Fully automatic (compatible with manual)	Fully automatic (compatible with manual)
Video function	Photo	Photo and video	Photo and video	Photo and video
Data preservation	200	400	600	1000
Storage	16G	32G	16G	32G
Display method	TFT high-definition true color screen			
Computer interface	USB, RS232, network port			
Capillary	OD:1.3mm,ID:1.1mm,Length:100mm (Single and double opening) OD:4.0mm,ID:3.8mm,Length:800mm (Large capillary)			
Processing capacity	3 pcs per batch			
Number of user management	-	8	10	200
Video playback	-	YES	YES	YES
User Management	-	YES	YES	YES
Power supply	AC 220V 50/60Hz 120W			
Packing size	430*320*370mm			
Gross weight	6.5kg			

**Mark:**

1. The Specification data are same for Smart-MY series with YKY series .
2. Smart-MY series comply with 21 Smart PART 11 but YKY series Not .
3. Smart-MY series with 10.4 inch FTF color touch color screen, YKY series use TFT HD color screen.

## 1.4 YKX Series - Micro Melting point Apparatus

Pictures	Name	Model	Temperature range	Detection method	Storage capacity (support)	Heating rate	Data interface	Fan	Can be equipped with printer
	Micro melting point instrument	JHX-4	Room temperature--350 $^{\circ}\text{C}$	Microscopic visual inspection		( 0.1-10) $^{\circ}\text{C}/\text{Min}$	RS232	NO	NO
		JHX-4Plus	Room temperature-400 $^{\circ}\text{C}$	Microscopic visual inspection				YES	YES
		JHX-5	Room temperature--350 $^{\circ}\text{C}$	Microscopic video				NO	NO
		JHX-5Plus	Room temperature--400 $^{\circ}\text{C}$	Microscopic video				YES	YES

## 2. Automatic Polarimeter

### 2.1 Smart Series - Digital Polarimeter



#### Brief Introduction

Shanghai Yuke Smart-P series polarimeter is an instrument for measuring the rotation of substances. The concentration, content and purity of the substance can be determined by spectrophotometry. Shanghai Yuke Automatic Polarimeter has built-in Peltier precise temperature control system, which can meet users' requirements for testing at constant temperature. The built-in automatic calibration program is optional, and the standard automatic calibration tool can be automatically calibrated from -45 degrees to +45 degrees, which fully meets the user's demand for controllable measurement accuracy in daily operation. The multi-level authority management of Shanghai Yuke automatic polarimeter can meet the audit tracking.

#### Fields of use

1. Automatic polarimeter is widely used in medicine, food, organic chemical industry and other fields.
2. Agriculture: analysis of ingredients such as agricultural antibiotics, agricultural hormones, microbial pesticides and starch content of agricultural products.
3. Medicine: analysis of antibiotics, vitamins, glucose and other drugs, pharmacological study of Chinese herbal medicine.
4. Food: sugar, monosodium glutamate, soy sauce and other production process control and finished product inspection, food sugar content determination.
5. Petroleum: analysis of mineral oil, monitoring of petroleum fermentation process.
6. Fragrance: analysis of essential oils.
7. Health services: analysis of clinical diabetes in hospitals

#### The main features

- 1: Built-in Peltier temperature control, improve accuracy and stability;
- 2: there are rotation/specific curl/concentration/sugar degree and custom mode;
- 3: LED cold light source instead of the traditional sodium light lamp and halogen tungsten lamp;
- 4: Compliance with 21Smart Part 11 audit trail, pharmacopoeia and electronic signature;
- 5: Support network printing, support data statistical retrieval;
- 6: Multi-level authority management, authority can be freely configured;
- 7: 10 inch touch color screen, user-friendly operation interface;
- 8: The system comes with automatic calibration system.
- 9: Comply with GLP GMP certification





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### Technical parameters

Model	Smart-P610	Smart-P630	Smart-P910	Smart-P930
Measurement mode	Rotation, specific curl, concentration, sugar content and custom formula			
light source	LED cold light source + high precision interference filter			
Working wavelength	589.3nm			
Test function	Single, multiple and continuous measurement			
Measuring range	Optical rotation $\pm 90^\circ$ Sugar $\pm 259^\circ$ for Z			
Minimum reading	0.001°	0.001° (0.0001° Optional)	0.001° (0.0001° Optional)	0.0001°
Accuracy	$\pm 0.004^\circ$	$\pm 0.002^\circ$	$\pm 0.002^\circ$	$\pm 0.002^\circ$
Repeatability	(Standard deviation s) 0.002° (Optical rotation)			(Standard deviation s) 0.001° (Optical rotation)
Peltier Temperature control range	10°C-50°C	10°C-60°C	10°C-60°C	10°C-60°C
Temperature resolution	0.1°C	0.01°C	0.01°C	0.01°C
Temperature control accuracy	$\pm 0.1^\circ\text{C}$	$\pm 0.03^\circ\text{C}$	$\pm 0.03^\circ\text{C}$	$\pm 0.03^\circ\text{C}$
Display method	8-inch TFT color touch screen		10.4-inch TFT color touch screen	
Standard test tube	200mm,100mm ordinary type,100mm temperature control type (optional Hastelloy alloy temperature control tube of various lengths)			
Transmittance	0.1%	0.01%	0.01%	0.01%
data storage	32G	64G	64G	128G
Automatic calibration	YES	YES (standard with a standard pipe)	YES (standard with 2pcs standard pipe)	YES (standard with 6pcs standard pipe)
<b>21 Smart PART 11</b>	<b>YES</b>			
Audit trail	YES			
Electronic signature	YES			
Multi-function search	YES			
Print	General-purpose printer, WiFi printing	General-purpose printer, WiFi printing (Standard with a HP printer)		
Method library	YES	YES	YES	YES
cloud service	Optional	YES	YES	YES
MD5 code verification	Optional	YES	YES	YES
Custom formula	Optional	YES	YES	YES
User Management	YES / Four-level authority management			
Export in	PDF & Excel			



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multiple file formats				
Communication Interface	USB, RS232, VGA, Ethernet			
Instrument level	0.01 level	0.01 level	0.01 level	0.01 level
Other options	Each capacity 50mm and 200mm long temperature control tube, mouse, keyboard connection, general purpose printer/wireless network printer			
Power supply	220V $\pm$ 22V, 50Hz $\pm$ 1Hz, 250W			
Weight	30kg			
Packing Size	820*475*465mm			

## 2.2 YK Series - Automatic Polarimeter



Model	YK-P200	YK-P300	YK-P400	YK-P600
Measurement mode	Optical rotation, specific rotation, concentration, sugar content			
light source	LED cold light source + high precision interference filter			
Working wavelength	589.3nm			Standard 546, 589nm, Optional: 405nm, 436nm, 546nm, 578nm, 689nm, 633nm
Measuring range	Optical rotation $\pm 89.99^\circ$ , Sugar $\pm 259^\circ$ for Z			
Minimum reading	0.001°			
Indication error	$\pm 0.01^\circ$ ( $-45^\circ \leq \text{optical rotation} \leq +45^\circ$ ) $\pm 0.02^\circ$ (optical rotation $< -45^\circ$ or optical rotation $> +45^\circ$ )			
Repeatability	(standard deviation s) 0.002° (optical rotation)			
Peltier Temperature control range	NO	15°C-35°C	15°C-45°C	15°C-45°C
Temperature control accuracy	NO	$\pm 0.2^\circ\text{C}$		
Display method	8-inch TFT color touch screen			
Standard test tube	-	200mm,100mm ordinary type,100mm temperature control type		
The minimum light transmittance of the sample	1%			
Automatic calibration	-	-	-	Yes
Instrument level	-	-	-	0.02 level
Communication Interface	USB, RS232			
<b>21 Smart PART 11</b>	<b>NO</b>			
Data saving	1000 units			
Power supply	220V $\pm 22\text{V}$ , 50Hz $\pm 1\text{Hz}$ , 250W			
Weight	30kg			
Packing Size	820*475*465mm			

### 3. Automatic Refractometer

#### 3.1 Smart Series - Digital Refractometer



##### Brief Introduction

Smart-R is equipped with a high performance linear CCD sensor. Through high-speed and high precision signal acquisition, analysis and processing technology, the Smart-R is equipped with a semiconductor Peltier super temperature control system. It can measure the refractive index (Nd) and the mass fraction of sugar solution (Brix) of transparent, translucent, dark and viscous liquid with high accuracy and efficiency.

##### Fields of use

Automatic refractometer is widely used in petroleum industry, oil industry, pharmaceutical industry, food industry, daily chemical industry, sugar industry, etc. It is also one of the commonly used equipment in schools and related scientific research units.

Food industry: quality control of raw materials, intermediates and final products; The concentration of dry matter, solids, and sugars; Purity control for products of sugar, dessert, beverage, dairy, chocolate and coffee, oil and fat industries.

Pharmaceutical industry: determination of solid content in blood and urine; Purity control.

Cosmetics industry: determination of refractive index of essential oils and spices; Determine the fatty acid content of soap and fragrance ingredients.

Chemical and petrochemical industries: determination of refractive index of raw materials and analytical reagents; Purity control; Determination of refractive index of petroleum products; Determine the concentration of the cooled lubricating oil.

##### The main features

- 1: Built-in Peltier temperature control, improve accuracy and stability;
- 2: China's first double temperature control, sapphire prism;
- 3: LED cold light source instead of the traditional sodium light lamp and halogen tungsten lamp;
- 4: Compliance with 21Smart Part 1 audit trail, pharmacopoeia and electronic signature;
- 5: Support network printing, support data statistical retrieval;
- 6: Multi-level authority management, authority can be freely configured;
- 7 "touch color screen, user-friendly operation interface;
- 8: The whole machine has passed TART and CE certification.



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### Technical parameters

Model	Smart-R200	Smart-R300	Smart-R500	Smart-R600
Range	1.30000-1.70000(nD)			
Resolution	0.0001(nD)	0.0001(nD)	0.00001(nD)	0.00001(nD)
Precision	±0.0002	±0.0002	±0.00003	±0.00002
Brix range	0-100%(Brix)			
Brix accuracy	±0.1%(Brix)	±0.1%(Brix)	±0.05%(Brix)	±0.01%(Brix)
Test mode	Refractive index / sugar content or customized	Refractive index / sugar content or customized	Refractive index / sugar content / honey moisture / salinity or customized	Refractive index / sugar content / honey moisture / salinity or customized
Temperature control method	No	Built-in Peltier	Built-in Peltier	Built-in Peltier
Temperature control range	Room temperature	5°C-65°C	5°C-65°C	5°C-90°C
Temperature control stability	Room temperature	±0.03°C	±0.02°C	±0.01°C
light source	LED			
wavelength	589nm			
Prism	sapphire			
Sample cell	stainless steel	stainless steel	Hastelloy	Hastelloy
Detection method	High-resolution linear CCD			
Display method	7 inch FTF color touch screen			
data storage	32G	32G	32G	64G
Output method	USB, RS232, RJ45, SD card, U disk			
User Management	Yes/four-level authority management			
<b>21Smart PART 11</b>	<b>YES</b>			
Audit trail	YES			
Electronic signature	YES			
Custom method library	YES			
Export file to verify high-level protection MD5	YES			
WIFI printing	YES			
Export in multiple file formats	PDF & Excel			
Packing Size	440*400*340mm			
Power supply	220V / 50Hz			
Gross Weight	7.15kg			

### 3.2 YK Series - Automatic Refractometer



YK series automatic refractometer is equipped with high-performance linear array CCD photosensitive components, through high-speed, high-precision signal acquisition and analysis and processing technology, equipped with semiconductor Peltier super temperature control system. It can efficiently and accurately measure the refractive index (nD) of transparent, translucent, dark, viscous and other liquids and the mass fraction of sugar solution (Brix).

#### Application field:

Fully automatic refractometer is widely used in petroleum industry, oil industry, pharmaceutical industry, food industry, daily chemical industry, sugar industry, etc. It is also one of the commonly used equipment in schools and related scientific research units.

Model	YK200	YK300	YK500	YK600
Range	1.30000-1.70000(nD)			
Resolution	0.0001(nD)	0.0001(nD)	0.00001(nD)	0.00001(nD)
Precision	±0.0002	±0.0002	±0.00003	±0.00002
Brix range	0-100%(Brix)			
Brix accuracy	±0.1%(Brix)			
Temperature control method	-	Built-in Peltier	Built-in Peltier	Built-in Peltier
Temperature control range	-	5°C-65°C	5°C-65°C	5°C-90°C
Temperature control stability	-	±0.03°C	±0.02°C	±0.01°C
light source	LED			
wavelength	589nm			
Prism	sapphire			
Sample cell	stainless steel			
Detection method	linear CCD		High-resolution linear CCD	
Display method	7 inch FTF color touch screen			
Output method	USB, RS232			
<b>21Smart PART 11</b>	<b>NO</b>			
Packing Size	440*400*340mm			
Power supply	220V / 50Hz			
Gross Weight	7.15kg			

## 4. Density meter



### Brief Introduction

The Smart-D50/D70 automatic densitometer is based on the principle of **U-tube oscillation method**, which perfectly combines Peltier's precise temperature control technology with high-definition video camera technology to not only provide accurate, stable and reliable test results, but also provide users with efficient and convenient test experience. High-definition video can see whether there is bubble influence in the sample, using pulse excitation, high-precision detection technology, convenient for users to accurately and quickly measure the sample density and density related parameters.

### Fields of use

1. Pharmaceutical industry: quality control of API and pharmaceutical intermediates, determine the specific gravity and density of pharmaceutical agents;
2. Flavor flavor: food flavor, daily flavor, tobacco flavor, food additive raw material verification;
3. Petrochemical industry: crude oil API index, gasoline, diesel density detection, additive mixing ratio process monitoring;
4. Beverage industry: measurement of sugar concentration, alcohol concentration, beer quality control, soft drink quality control;
5. Food industry: grape juice, tomato juice, high fructose corn syrup, vegetable oil and soft drinks processing quality control;
6. Brewing industry: liquor, yellow rice wine, red wine, beer, fruit wine, rice wine and other alcohol concentration detection;
7. Chemical industry: chemical urea, detergent, glycol, acid and alkali and ammonia concentration test;
8. Machinery manufacturing: metal processing, machine manufacturing, automotive industry, electronic and electrical cleaning agent detection;
9. Inspection institutions: standard laboratories, statutory testing institutions, third party detection of liquid density measurement.

### The main features

1. Automatic integration to realize the function of one-key measurement.
2. Built-in Peltier temperature control, improve accuracy and stability.
3. Avoid bubbles in HD video.
4. Data can be printed directly through the printer.
5. Compliance with 21Smart Part 11, audit trail, pharmacopoeia and electronic signature.



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### Technical parameters

Model	Smart -D50	Smart -D70	Smart -D90
Test mode	Density, alcohol concentration and custom formula		
Measuring range	0 g/cm <sup>3</sup> to 3 g/cm <sup>3</sup>		
Resolution	±0.0001 g/cm <sup>3</sup>	±0.00001 g/cm <sup>3</sup>	±0.00001 g/cm <sup>3</sup>
Repeatability	±0.0001 g/cm <sup>3</sup>	±0.00005 g/cm <sup>3</sup>	±0.00005 g/cm <sup>3</sup>
Accuracy	±0.0003 g/cm <sup>3</sup>	±0.00008 g/cm <sup>3</sup>	±0.00008 g/cm <sup>3</sup>
Injection method	Automatic (compatible with manual)		
With Video	YES		
Temperature control method	Peltier		
External heater	No	No	Yes
Temperature control range	5°C-45°C	5°C-65°C	5°C-85°C
Temperature control stability	±0.02°C		
Display method	10.4 inch FTF color touch screen		
data storage	32G	64G	64G
output method	USB, RS232, U disk		
User Management	Yes / four-level authority management		
<b>Standards compliant</b>	<b>ASTM D1250,D1475, D2501, D4052, D4806, D5002, D5931, D6448</b>		
<b>21 Smart PART 11</b>	<b>YES</b>		
Audit trail	YES		
Electronic signature	YES		
Custom method library	YES		
Export file to verify high-level protection MD5	YES		
WIFI printing	YES		
Export in multiple file formats	PDF & Excel		
Packin Size	425*410*250mm		
Power supply	110V -230V 50Hz / 60Hz		
Gross Weight	8.5kg		



## 5. Turbidity meter



### Brief Introduction

Turbidimeter is used to measure the scattering of light generated by insoluble particulate matter suspended in water or transparent liquid and to measure the content of these suspended particulate matter.

### Fields of use

Turbidity meter is used in water plant, food, chemical, power plant, metallurgy, environmental protection, beverage, wine, pharmaceutical industry and other departments, is a common laboratory instrument.

### The main features

- 1: One-button automatic measurement, range automatic switch;
- 2: Color touch screen, easy to operate;
- 3: support multi-point correction;
- 4: Can print data directly through the printer;
- 5: In line with GLP specification and ISO7027 industry standard.

### Technical parameters

Model	YK-Z100	YK-Z200	YK-Z500	YK-Z1000	YK-Z2000	YK-Z4000
Measuring range	0.000-100NTU	0.000-200NTU	0.000-500NTU	0.000-1000NTU	0.000-2000NTU, 0-500 EBC , 0-9999 ASBC	0.000-4000NTU 0-500 EBC , 0-9999 ASBC
Resolution	0.001					
Repeatability	≤0.3%					
Zero drift	≤±0.3%FS					
Stability	≤±0.3%FS					
Stray light	<0.02NTU					
light source	Infrared LED					
Detector	Silicon photoreceiver					
Data storage	100 set	200 set	500 set	600 set	800 set	1000 set
Display method	4.3 inch FTF color touch screen					
Communication output	RS232 printer					
Packing Size	350*245*260mm					
Gross Weight	4kg					
Power supply	100V-230V , 50Hz / 60 Hz					

## 6. Dropping point & Softening point Tester



### Brief Introduction

Automatic drop point and softening point tester perfectly combine high-precision temperature control technology and high-definition video camera technology, not only to provide users with accurate, stable and reliable test results, but also to bring users efficient and convenient test experience. High-definition video can easily and clearly see the whole process of sample state change, and automatically detect real-time graph display, which is convenient for users to accurately measure the sample drop point/softening point. The standard fat cup and measurement method can ensure the accuracy of the results.

### Fields of use

Automatic droplet point and softening point tester plays an important role in chemical industry and medical research. It is a necessary instrument for droplet point and softening point of asphalt, asphalt, polymers, resins, paste, wax and more materials.

### The main features

- 1: HD video visual sample changes;
- 2: Fully automatic one-button automatic measurement;
- 3: Test two samples at a time;
- 4: Can print data directly through the printer;
- 5: Compliance with 21Smart Part 11, audit trail, Pharmacopoeia 2020 and electronic signature;
- 6: in line with national standards and international standards.

### Technical parameters

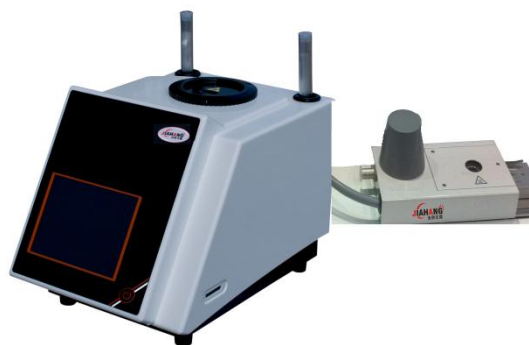
Model	YKD50	Smart - YKD50	YKD70	Smart - YKD70
Temperature range	RT to 350°C	RT to 400°C	RT to 400°C	RT to 400°C
Temperature resolution	0.1°C	0.01°C	0.1°C	0.01°C
Detection method	Manual detection	Manual detection	Automatic detection (compatible with manual detection)	Automatic detection (compatible with manual detection)
Heating rate	0.1-20 °C / Min			
Accuracy	±0.2°C (<250°C) ±0.5°C (>250°C)			
User Management	15	15	15	15
Display method	5.6 inch + 4.3 inch color display	10.4 inch color display	5.6 inch + 4.3 inch color display	10.4 inch color display



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Processing capacity	2 per batch	2 per batch	2 per batch	2 per batch
Experimental program	100 set	100 set	200 set	400 set
Data interface	USB ,RS232, network port			
Comply with GLP specification	YES			
Power supply	220 V 50Hz 120W			
Standards compliant	Meet ASTM (D3204, D3461, D3104, D3954, D6090), DIN (51801, 51920), GB / T (2294-2019, 3498/8728-1988, 8728-1988) ISO (2176-1972, 4625-2) and "Pharmacopoeia" and other standards			
Data storage	-	64G	-	64G
User Management	-	YES / 4-level authority management	-	YES / 4-level authority management
<b>21Smart Part 11, audit trail, electronic signature</b>	-	<b>YES</b>	-	<b>YES</b>
Printing method	Serial printing	WIFI Serial printing	Serial printing	WIFI Serial printing
Export in multiple file formats	PDF & Excel			
Packing Size	430*320*370mm			
Power Supply	110-230V,50/60Hz,120W			
Gross Weight	6.5kg			

## 7. Micro-heating stage



### Brief Introduction

Microscope with digital eyepiece can be used to study and determine the thermal properties of the material not only with ordinary eyepiece, but also with advanced color CCD through a television or display (provided by the customer). It can be used to measure the melting point of micro sample, slice sample and bioengineering thermodynamics.

### Fields of use

Microthermal platform is widely used in medicine, chemical industry, synthetic fiber, biology, mineralogy, criminology and other fields.

### The main features

1. Closed furnace body to ensure stable temperature;
2. Precise heating rate 0.1-20.0 poleless adjustable;
3. Adopt TFT true color touch screen;
4. Up to 20 sets of methods, each set with a maximum of 99 paragraphs.
5. Maximum temperature to 350°C.

### Technical parameters

Model	YK350	YK370
temperature range	Room temperature -350°C	Room temperature -400°C
Heating rate	(0.1-20) °C/Min 200 gear steplessly adjustable	(0.1-20) °C/Min
Temperature resolution	0.1°C	0.1°C
Temperature control accuracy	±0.3°C	±0.3°C
Display method	TFT high-definition true color screen	TFT high-definition true color screen
Data interface	USB / RS232 / SD / Ethernet port	USB / RS232 / SD / Ethernet port
Glass slide/cover glass specifications	76*19*1 / 15*15*0.5mm	76*19*1 / 15*15*0.5mm
Vision	2mm	2mm
Sample lens working distance	At least 7mm	At least 7mm
X-Y table	Move up to 13mm	Move up to 13mm
size and weight	185*85*28mm / 1kg	185*85*28mm / 1kg
User Management	NO	15
Number of method segments	1	99



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Experimental method storage	10 set	20 set
Save result	200 pcs	400 pcs
Optional accessories	Biological microscope, offset microscope (optional)	Biological microscope, offset microscope (optional)

## 8 Polarizing microscope (specially equipped with micro-hot stage)



### Brief Introduction

New ergonomic design, improved effector imaging system, reflector illuminator and lamp room, higher brightness, more vivid image effect. Follow the company's HSF environmental protection policy, innovate and practice environmental protection technology.

### Technical parameters

Optical system	Infinite chromatic aberration correction optical system
Observation tube	30° tilt, infinity hinged binocular observation tube
	30° tilt, infinite hinged three-way observation tube
	30°-60°adjustable inclination angle, infinite hinged binocular observation tube
eyepiece	High eyepoint wide field plan eyepiece PL 10X / 22mm
	High eye point wide field plan eyepiece PL 10X / 22mm, adjustable diopter, can be equipped with micrometer, can bring online version
	High eyepoint wide field plan eyepiece PL 15X / 16mm
Objective lens	Infinite long working distance stress relief plan objective lens 5X, 10X, 20X, 50X (semi-apochromatic)
	Infinity stress relief plan objective 4X, 10X, 20X, 60X
Focusing mechanism	Coaxial focusing mechanism for low hand and coarse position. The stroke (focusing range) is 28mm, the fine-tuning accuracy is 0.002mm, with an adjustment and tension device to prevent slipping and an upper limit device to prevent breaking the section
converter	Internal positioning 4-hole adjustable center converter
	Internal positioning 5-hole adjustable center converter (the middle hole is fixed)
Intermediate lens group	With push-pull type deviation detection group, can move out of the optical path; Built-in Burnett mirror, rotating disc switching mechanism (adjustable center and focal length)
Analyzer group	Analyzer group, 360° rotation, division value 2°, accuracy 6', with locking mechanism
Compensator	λ plate: Φ18mm, first-class red (optical path difference 551nm), λ/4 plate: Φ18mm (optical path difference 551nm), quartz wedge (I-IV grade)
Stage	Rotating metal working platform, surface graphite spraying, anti-corrosion and abrasion resistance: 160mm in diameter, 360°rotatable, 1° grid value, 6'precision, with locking device
Condenser	Swing-out achromatic condenser N.A 1.2
Lighting system	Upper lighting: adaptive wide voltage 100-240V, reflector lamp room 12V 50W, preset center, reflective illuminator, with field diaphragm and aperture diaphragm, including LBD



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	filter set, with plug-in polarizer set
	Down lighting: adaptive wide voltage 100-240V, transmission lamp room 12V 50W, preset center, Coral lighting, with variable field diaphragm
Photography	0.35 X / 0.5X / 0.65X / 1X camera connector, C-type interface, adjustable focus
other	Color filter set for projection, professional moving ruler, high-precision micrometer

## 9. Fully automatic potentiometric titrator



### Brief Introduction

Automatic potentiometric titration device is a high-precision electrochemical analysis instrument for volumetric analysis using potentiometric titration method. It adopts modular design and consists of volumetric titration device, control device and testing device. It can carry out acid-base titration, REDOX, precipitation and complexation titration. The instrument has the functions of constant titration, micro titration, end-point setting titration, volume setting titration and mode titration. Users can also build their own special titration methods according to their actual needs.

### Fields of use

Automatic potential titrator belongs to the laboratory general basic equipment, the use is very wide, can be used in food, drug testing, disease control, commodity inspection, water treatment, petroleum, chemical, Marine, electric power, environmental protection, new energy, teaching, scientific research and other related fields.

### The main features

1. Automatic sample injection, pipeline cleaning, automatic test;
2. 8 inch color touch screen, easy to operate and display titration curve and measurement results;
3. Support acid-base, REDOX, precipitation, complexation, non-aqueous titration and other titration methods;
4. Imported solenoid valve, PTFE corrosion-resistant burette, high-power magnetic stirring;
5. High precision closed-loop control to ensure accurate titration;
6. High precision burette accurate to 0.003mm;
7. Comply with GLP GMP certification; Support direct data printing

### Technical parameters

		Model	YK-T4	YK-T5
Titration device	Volumetric titration unit	Titration analysis repeatability	0.2%	0.2%
		Allowable error of titration capacity	15ml burette: $\pm 0.025\text{ml}$ ; 25ml burette: $\pm 0.035\text{ml}$	15ml burette: $\pm 0.025\text{ml}$ ; 25ml burette: $\pm 0.035\text{ml}$
		Burette resolution	15ml burette: 1/20000; 25ml burette: 1/10000	15ml burette: 1/20000; 25ml burette: 1/10000
		Titration volume	0.0001ml	0.0001ml





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		accuracy		
		Drive resolution	1/30000	1/30000
		Electronic unit repeatability error	≤0.2mV	≤0.2mV
Measuring device	Potentiometric Titration Module	Measuring range	(-1999.99-1999.99)mV, (0.000-14.000) pH	(-1999.99-1999.99)mV, (0.000-14.000) pH
		Resolution	0.01mV , 0.001pH	0.01mV , 0.001pH
		Maximum possible error	0.2 mV 0.02pH	0.2 mV 0.02pH
	Temperature compensation	Measuring range	(0-100.0)°C	(-10.0-100.0)°C
		Resolution	0.1°C	0.1°C
		Basic error	±0.2°C	±0.2°C
Number used for titration			2 pcs (15mL / 25mL )	2 pcs (15mL / 25mL )
Titration cup capacity			100mL	100mL
Isometric titration			YES	YES
Integrated burette			YES	YES
Used to stir samples			NO	YES
pH correction			YES	YES
Set end mode			YES	YES
mv / pH measuring electrode interface			YES	YES
Reference electrode interface			YES	YES
PT1000 temperature electrode interface			YES	YES
Host USB interface			YES	YES
Stirrer interface			YES	YES
Output Interface			Printer	Printer
Screen display			8 inch TFT touch color screen	8 inch TFT touch color screen
Power supply			110-240V, 50/60 Hz	110-240V, 50/60 Hz
Weight			7.6kg	7.6kg

## 10. Multi-channel automatic potentiometric titrator



### Brief Introduction

Automatic potentiometric titration device is a high-precision electrochemical analysis instrument for volumetric analysis using potentiometric titration method. It adopts modular design and consists of volumetric titration device, control device and testing device. It can carry out acid-base titration, REDOX, precipitation and complexation titration. The instrument has the functions of constant titration, micro titration, end-point setting titration, volume setting titration and mode titration. Users can also build their own special titration methods according to their actual needs.

### Fields of use

Automatic potential titrator belongs to the laboratory general basic equipment, the use is very wide, can be used in food, drug testing, disease control, commodity inspection, water treatment, petroleum, chemical, Marine, electric power, environmental protection, new energy, teaching, scientific research and other related fields.

### Application field

1. Acid-base titration, e.g., oxalic acid (aqueous/non-aqueous) content
2. Redox titration, e.g., iodine value, iron (II) content
3. Precipitation titration, e.g., chloride content
4. Complexometric titration, such as calcium content,
5. The titration was performed with a polarized electrode (Ipol, Upol)

### The main features

1. Channel liquid feeding module, can be equipped with 16/18/20 station rotary disc type automatic sampler
2. Can drive multiple feeding module units, burette and pipeline should be acid, alkali and corrosion resistant.
3. Imports corrosion resistant PTFE rotary valve, PTFE corrosion resistant burette, high power mixing platform, the use of magnetic stirring coil
4. High precision closed loop control to ensure accurate titration
5. Burette filling resolution 1 $\mu$ L
6. High precision burette accuracy up to 0.003mm
7. Automatically check the state of the instrument after starting the machine
8. The whole pipeline is fully sealed design, quick and convenient to replace
9. Real-time display of titration curve and measurement results, convenient operation
10. Support acid-base titration, REDOX titration, precipitation titration, complex titration, non-aqueous titration and other titration methods
11. Comply with GMP standard, and the titration results meet GLP requirements
12. Automatic sample loading, automatic pipeline cleaning, automatic measurement of experimental results, automatic recording and drawing of titration pH- titration volume real-time change curve.

13. In line with the 2020 edition of the Pharmacopoeia

14. With multi-level user rights management function, to achieve audit tracking and rights management functions

#### Technical parameters

Model	YK-T6	YK-T7	YK-T8	YK-T9
Measuring range	- 2000.0MV~+2000.0 MV - 20.000PH~+20.000P H	- 2000.0MV~+2000.0 MV - 20.000PH~+20.000P H	- 2000.0MV~+2000.0 MV - 20.000PH~+20.000P H	- 2000.0MV~+2000.0 MV - 20.000PH~+20.000P H
Resolution	0.1MV 0.001PH	0.1MV 0.001PH	0.1MV 0.001PH	0.1MV 0.001PH
Precision	0.1MV 0.005PH	0.1MV 0.003PH	0.1MV 0.002PH	0.1MV 0.002PH
Measurement mode	MEAS: measure pH /mV/ T CAL: pH calibration (multi-point) SET: Set the end point mode MET: equivalent titration DET: Dynamic Titration			
Titration mode	Acid-base titration/ Redox titration/ Precipitation titration/ Complexometric titration/ Non-aqueous	Acid-base titration/ Redox titration/ Precipitation titration/ Complexometric titration/ Non-aqueous	Acid-base titration/ Redox titration/ Precipitation titration/ Complexometric titration/ Non-aqueous	Acid-base titration/ Redox titration/ Precipitation titration/ Complexometric titration/ Non-aqueous
Titration cup capacity	250ml	250ml	250ml	250ml
Temperature measurement range	0-100℃	-5-120℃	-5-120℃	-5-120℃
Temperature measurement accuracy	±0.1℃	±0.1℃	±0.1℃	±0.1℃
communication method	1*USB, 232 serial port, Ethernet	2*USB, 232 serial port, Ethernet	2*USB, 232 serial port, Ethernet	2*USB, 232 serial port, Ethernet
Dosing unit	Built-in dosing unit	Built-in dosing unit	Built-in dosing unit	Built-in dosing unit
Dosing module unit	1 set of built-in titration dosing channel	2 set of built-in titration dosing channel	2 set of built-in titration dosing channel	4 set of built-in titration dosing channel
Expandable number of dosing channels	8	8	8	8
Burette specifications	1ml 5ml 10ml 25ml 50ml (10ml Standard )	1ml 5ml 10ml 25ml 50ml (10ml Standard )	1ml 5ml 10ml 25ml 50ml (10ml Standard )	1ml 5ml 10ml 25ml 50ml (10ml Standard )
Burette resolution	1/48,000	1/48,000	1/48,000	1/48,000
Burette refill	10 seconds (100%	10 seconds (100%	10 seconds (100%	10 seconds (100%



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time	filling speed)	filling speed)	filling speed)	filling speed)
control unit	PC with software (additional to the computer)	PC with software (additional to the computer)	PC with software (optional computer)	PC with software (optional computer)
Autosampler	Can be used in conjunction with the GT robot sampling system for the analysis of large quantities of samples	Can be used in conjunction with the GT robot sampling system for the analysis of large quantities of samples	Can be used in conjunction with the GT robot sampling system for the analysis of large quantities of samples	Can be used in conjunction with the GT robot sampling system for the analysis of large quantities of samples
Self-check function	Automatically check the status of the instrument after starting	Automatically check the status of the instrument after starting	Automatically check the status of the instrument after starting	Automatically check the status of the instrument after starting
Calibration function	YES	YES	YES	YES
Application editing function	YES	YES	YES	YES
storage	More than 300G	More than 300G	More than 300G	More than 300G
Default method	More than 300G	More than 300G	More than 300G	More than 300G
Comply with FDA, GMP, GLP	Audit trail, hierarchical management, electronic signature	Audit trail, hierarchical management, electronic signature	Audit trail, hierarchical management, electronic signature	Audit trail, hierarchical management, electronic signature
Pipeline	PTFE titration line (corrosion resistant)	PTFE titration line (corrosion resistant)	PTFE titration line (corrosion resistant)	PTFE titration line (corrosion resistant)
Stirring method	Overhead spiral stirrer or magnetic stirring	Overhead spiral stirrer or magnetic stirring	Overhead spiral stirrer or magnetic stirring	Overhead spiral stirrer or magnetic stirring
PTFE valve	Imported anti-corrosion rotary valve	Imported anti-corrosion rotary valve	Imported anti-corrosion rotary valve	Imported anti-corrosion rotary valve
Micro detection electrode	Imported	Imported	Imported	Imported
Micro syringe pump	Imported	Imported	Imported	Imported

## 11. Moisture Analyzer



### Brief Introduction

Karl Fischer moisture titrator is designed and developed by the company with independent intellectual property rights of automatic capacity method Karl Fischer moisture meter. Instrument using Karl Fischer reagent as a standard liquid capacity titration method for the analysis of theory, combined with the latest machinery and electronics design technology and the interface design of human nature, good sealing, drift value and low detection limit, wide measuring range, high degree of automation, high precision and can be used for accurate analysis of solid, liquid, gas, water of crystallization, the adsorption of water, free water in the samples.

### Fields of use

It can be widely used in petroleum, chemical industry, pharmaceutical industry, daily chemical industry, food, agriculture, laboratory and many other industries.

### The main features

- 1.Touch-type operation, graphical interface, LED full-color LCD screen, real-time display of titration curve, metering pump sample volume, detection time, consumption of test dose, current water volume, drift and other detection parameters;
- 2.The use of fully closed titration tank, system drift is very low, automatic replacement of solvents and discharge of waste liquid, to avoid toxic reagent escape, to avoid the infiltration of environmental water;
- 3.has a patent high precision piston and titration control technology, to ensure the accuracy of the system measurement results;
- 4.pipe joints with special nuts and seals, design a variety of bottle caps to adapt to a variety of reagent bottles, available a variety of Karl Fischer reagent, different Karl Fischer reagent test results are not distinguished;
- 5.Automatic determination, simple, rapid, accurate, can realize automatic suction, drainage, automatic determination of drift, automatic deduction of drift, automatic tracking environment drift, automatic calculation results (expressed in relative standard deviation);
- 6.PID automatic control titration speed, the average sample test time is less than 2 minutes;
- 7.Support authority management, audit trail, comply with GLP/GMP specification;
- 8.Multiple data interfaces (RS-232C, USB, Web interface);
- 9.Auxiliary functions: titration delay function, automatic terminal delay function, intelligent fault determination function, waste liquid bottle overflow warning function;
- 10.A variety of measurement results unit selection (PPM, %, ml, mGH<sub>2</sub>O), can be equipped with special micro data printer, heating mixer, card heating furnace, card type headspace sampler, semiconductor refrigeration device, micro titration pool.



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## Technical parameters

### Karl Fischer moisture titrator (volume method)


Model	YK-V3	YK-V5
Measuring range of moisture content	0.001~100%	0.001%-100 (10ppm-100%)
Titration control accuracy	1 uL	0.2uL
Titration function	PID automatic control titration speed, drift automatic update automatic deduction; Automatic hold end	PID automatic control titration speed, drift automatic update automatic deduction; Automatic hold end
Accessibility	Automatic cleaning function, equipment verification function, waste liquid bottle full warning function, automatic data calculation, result statistics function	Automatic cleaning function, equipment verification function, waste liquid bottle full warning function, automatic data calculation, result statistics function
Delay setting	Delay titration and terminal delay can be set according to the need to deal with insoluble samples	Delay titration and terminal delay can be set according to the need to deal with insoluble samples
Titration repeatability (RSD)	$RSD \leq 0.5\%$ ; (2ml reagent)	$RSD \geq 99.7\%$ ; (2ml reagent)
measure time	3 minutes on average	3 minutes on average
data processing	Automatic calculation analysis results, showing consumption test dose, water quality, percentage content, PPM, etc	Automatic calculation analysis results, showing consumption test dose, water quality, percentage content, PPM, etc
data storage	There are 5 method files	12 groups
The measurement results	20 groups	20 groups
Built-in printer	YES	YES
Valve and pipe material	Three - way two - way solenoid drive control valve, anti-corrosion material pipeline and sealing joint	Three - way two - way solenoid drive control valve, anti-corrosion material pipeline and sealing joint
External electrode	Double platinum electrode	Double platinum electrode
Operation interface	LCD screen display, navigation operation menu	LCD screen display, navigation operation menu
Use environment humidity	$\leq 80\%$	$\leq 80\%$
power supply	95~260V / 50Hz	110~220V (AC) / 50-60Hz
Size	580*460*360mm	580*460*360mm
Weight	9.6kg	9.6kg

### Karl Fischer Moisture Titrator (coulometric method)

Model	YK-C3	YK-C5
Measuring range	3ug~1000mg (H2O)	3ug~199mg (H2O),1ppm~100%
Reading unit	ug water	ug water
Detection accuracy	0.1 ug (H2O)	0.1 ug (H2O)
Accuracy	$> 99.7\%$ (1000 ug Pure water )	$> 99.7\%$ (1000 ug Pure water )
Electrolysis current range	0-400mA	0-400mA
temperature range	-	0-299°C
End delay	Customizable	Customizable

Electrolysis speed	According to the electrolysis capacity of the reagent, select 6 gears, automatic control	According to the electrolysis capacity of the reagent, select 6 gears, automatic control
Drift handling	Intelligent tracking, automatic processing	Intelligent tracking, automatic processing
Calculation formula	6 formulas to adapt to different calculation needs	6 formulas to adapt to different calculation needs
Operation interface	Touch color screen	Touch color screen
Data storage	100 group	200 group
Calibration function	YES	YES
Printer	Pr-1 dedicated data printer	Pr-1 dedicated data printer
Power supply	220V / 50Hz	220V / 50Hz
Power	35W	35W
Ambient temperature	5-40°C	5-40°C
Environment humidity	20~80%	20~80%
Dimensions	320*280*160mm	320*280*160mm
Net weight	5.0kg	5.0kg

### Quick moisture determination series

Picture	Name	Model	Testing method	Maximum weighing	Temperature adjustment range	Readability	Ambient temperature	Weighing pan size
	Quick Moisture Analyzer	JHS-50-10	Halogen method	50g	50-160°C	0.01g	10-300°C	Φ90mm
	Quick Moisture Analyzer	JHS-50-5	Halogen method	50g	50-160°C	0.005g	10-300°C	Φ90mm
	Quick Moisture Analyzer	JHS-50-1	Halogen method	50g	50-160°C	0.001g	10-300°C	Φ90mm

## 12. Differential scanning calorimeter



### Brief Introduction

DSC measures the relationship between temperature and heat flow related to the internal heat transition of materials. It has a wide range of applications, especially in the research and development, performance testing and quality control of materials. Such as material melting, glass transition temperature, crystallization and cold crystallization, phase transition, thermal stability, curing/crosslinking, oxidation rust lead period and so on. Yuke DSC in line with the national standard GB/T15065-2009, GB/T2951.42-2008, GB/T17391-1998, GB/T19466.6-2009 standard.

### Fields of use

It has a wide range of applications, especially in the research and development, performance testing and quality control of materials.

### The main features

- 1: Closed furnace structure, to ensure heating stability;
- 2:100 for thermocouple, greatly improve temperature sensitivity and resolution;
- 3: New furnace structure, better resolution and resolution and better baseline stability;
- 4: Dual temperature probe to ensure high repeatability of sample temperature measurement;
- 5: The software ADAPTS to all brands of computers, supporting WinXP, Win7, Win8, Win10 and other operating systems;
- 6: Humanized operation interface, 8 inch LCD touch screen display, friendly interface, easy to operate.




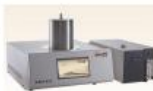

### Technical parameters

Model	YK-DSC6	YK-DSC8
temperature range	Room temperature -600℃	Room temperature -800℃
Temperature resolution	0.01℃	0.01℃
Temperature accuracy	0.1℃	0.1℃
Temperature accuracy	±0.03℃	±0.03℃
DSC range	±500mW	±500mW
DSC resolution	0.001mW	0.001mW
Calorimetry accuracy	0.1%	0.1%
Heating rate	0.1~100℃ / min	0.1~100℃ / min
Cooling rate	0.1~50℃ / min	0.1~50℃ / min
Maximum data collection rate	50 pcs/ s	50 pcs/ s
Temperature control method	Heating, constant temperature, cooling, cycle temperature control	Heating, constant temperature, cooling, cycle temperature control



	(full program automatic control)	(full program automatic control)
Atmosphere control	Gas mass flow meter automatically switches between two gases	Gas mass flow meter automatically switches between two gases
Display method	8-inch color touch screen	8-inch color touch screen
Parameter standard	Equipped with standard samples, one-key automatic calibration, users can calibrate the temperature by themselves	Equipped with standard samples, one-key automatic calibration, users can calibrate the temperature by themselves
Data interface	USD2.0 interface, dedicated operating software	USD2.0 interface, dedicated operating software
Power supply	50Hz / 60 Hz AC220V	50Hz / 60 Hz AC220V

### DSC / DTA / TGA / STA Specification Compared as follows,

Picture	Name	Model	temperature range	Temperature control method	Application field	Data interface	Heating rate	
	Melting point analyzer	JH-500A	RT~500°C	Program temperature control	Block samples such as plastics	USB	1~80°C/min	
	Differential Scanning Calorimeter	JH-DSC-6	RT~600°C				1~80°C/min	
		JH-DSC-6L	-100°C~600°C	1~80°C/min				
		JH-DSC-8	RT~800°C	Temperature and cooling scan, can be segmented heating, cooling scan	1~80°C/min			
		JH-DSC-8L	-100°C~800°C		1~80°C/min			
	Differential Thermal Analyzer	JH-DTA3320	RT~1150°C	Program temperature control	Rubber, plastic, (wire and cable, gas and water pipeline) medicine, metallurgy, polymer, new energy, etc.	USB two-way communication computer control	1~80°C/min	
		JH-DTA3332	RT~1450°C				1~80°C/min	
	Thermogravimetric Analyzer	JH-TGA-350	RT~1100°C			Program temperature control	USB two-way communication computer control	1~80°C/min
		JH-TGA-550	RT~1400°C					1~80°C/min
	Synchronous Thermal Analyzer	JH-STA-150	RT~1100°C			Program temperature control	USB two-way communication computer control	1~80°C/min
		JH-STA-350	RT~1400°C					1~80°C/min

### 13. Spectrophotometer



#### Brief Introduction

YK-UV series UV-visible light spectrophotometer with quantitative measurement, wavelength scanning, time scanning, multi-wavelength test, DNA protein test and other high-order functions, with high precision, high resolution, low noise, low stray light characteristics.

#### Fields of use

Photometer is one of the analytical instruments with the longest history, the most widely used and the widest coverage in the world. It is widely used in life science, medical science, environmental science, agricultural science, metrology science, food science, geological science, petroleum science, medical and health care, iron and steel metallurgy, chemistry and chemical industry and other fields.

#### The main features

1. Independent double optical path and double beam optical system;
2. Can independently complete photometric measurement, quantitative measurement, spectral scanning, kinetics, DNA/ protein testing functions;
3. Suspension type optical system design, strengthen the design of thickened bottom plate, eliminate the impact of vibration or deformation on the optical system;
4. The software is fully compliant with 21Smart Part 11, audit trail, pharmacopoeia and electronic signature;
5. Large screen dot matrix liquid crystal, clear map data display, friendly interface, easy to operate;
6. Smaller spectral bandwidth, higher resolution, fully meet the requirements of the pharmacopoeia, wider application range;
7. Long life environment-friendly deuterium lamp with flange seat, light replacement is free of optical debugging;
8. The graph and data can be saved in real time, and can be maintained when power is off. It can be printed and exported to PC.




#### Technical parameters

Model	YK-UV6	YK-UV7	YK-UV8	YK-UV9
Wavelength range	190-1100nm	190-1100nm	190-1100nm	190-1100nm
The spectral bandwidth	2nm	0.5/1/1.5/2/4/5.0nm	1.8nm	0.5/1/1.5/2/4/5.0nm
Wavelength accuracy	±0.5nm	±0.1nm(656.1nm) ±0.3nm All Region	±0.1nm (D2 656.1nm) ±0.3nm All Region	±0.1nm(656.1nm) ±0.3nm All Region
Wavelength	≤0.2nm	≤0.1nm	≤0.1nm	≤0.1nm



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repeatability				
Photometric accuracy	±0.002A (0-0.5A) ±0.004A (0.5-1A) ±0.3%T (0-100%T)	±0.002A (0-0.5A) ±0.004A (0.5-1A) ±0.2%T (0-100%T)	±0.002A (0-0.5A) ±0.004A (0.5-1A) ±0.2%T (0-100%T)	±0.002A (0-0.5A) ±0.004A (0.5-1A) ±0.2%T (0-100%T)
Photometric repeatability	±0.002A (0-0.5A) ±0.004A (0.5-1A) ±0.3%T (0-100%T)	≤0.001A (0-0.5A) ≤0.002A (0.5-1A) ≤0.1%T (0-100%T)	≤0.001A (0-0.5A) ≤0.002A (0.5-1A) ≤0.1%T (0-100%T)	≤0.001A (0-0.5A) ≤0.002A (0.5-1A) ≤0.1%T (0-100%T)
Stray light	≤0.05%T (220/360nm)	≤0.03%T (220/360nm)	≤0.03%T (220/360nm)	≤0.03%T (220/360nm)
Baseline drift (stability)	≤0.001A/h (500nm, 0A)	≤0.0004A/h (500nm, 0A)	≤0.0004A/h (500nm, 0A)	≤0.0004A/h (500nm, 0A)
Baseline flatness	±0.0015A	±0.0015A	±0.001A	±0.0015A
Noise level	±0.1%T(0%T 线) ±0.3%T(100%T 线) ±0.0005A (500nm 处)	±0.1%T(0%T 线) ±0.3%T(100%T 线) ±0.0005A (500nm 处)	±0.1%T(0%T 线) ±0.3%T(100%T 线) ±0.0004A (500nm 处)	±0.1%T (0%T 线)
Luminosity range	0-200%T、-0.3-3A 0-9999C、0-9999F	0-200%T、-44A 0-9999C、0-9999F	0-200%T、-0.3-3A 0-9999C、0-9999F	0-200%T、-44A 0-9999C、0-9999F
Wavelength setting mode	Automatic, wavelength resolution 0.1nm	Automatic, wavelength resolution 0.1nm	Automatic, wavelength resolution 0.1nm	Automatic, wavelength resolution 0.1nm
Scanning speed	High, medium and low are available	High, medium and low are available	High, medium and low are available	High, medium and low are available
PC software	PC scan analysis software (standard)	PC scan analysis software (standard)	PC scan analysis software (standard)	PC scan analysis software (standard)
Data output	USB	USB	USB	USB
Printout	Parallel port	The microprinter is connected to a computer for printing	Parallel port	The microprinter is connected to a computer for printing
Display system	7 inch 320*240 large screen LCD	7 inch 320*240 large screen LCD	7 inch 320*240 large screen LCD	7 inch 320*240 large screen LCD
The light source	Original imported tungsten lamp, xenon lamp	Original imported tungsten lamp, xenon lamp	Original imported tungsten lamp, xenon lamp	Original imported tungsten lamp, xenon lamp
The detector	Imported silicon photodiode	Imported silicon photodiode	Imported silicon photodiode	Imported silicon photodiode
The power supply	AC 220V/50Hz or 110V/60Hz	AC 220V/50Hz or 110V/60Hz	AC 220V/50Hz or 110V/60Hz	AC 220V/50Hz or 110V/60Hz
Overall dimensions	625*430*210mm	645*515*255mm	625*430*210mm	645*515*255mm
Weight	28kg	28kg	28kg	28kg

Picture	Model	Spectral bandwidth	Wavelength range	Wavelength accuracy	Luminosity range	Luminosity accuracy	Stray light	stability	Baseline flatness	Functions and features
<b>Visible spectrophotometer</b>										
	JH-EV2	4nm	325-1020nm	±2.0nm	-0.3~3A	±0.5%T	0.2%T	0.004A/h	/	LCD digital display, touch the button, direct reading of concentration test data. Economical type, set the wavelength manually.
<b>UV-visible spectrophotometer</b>										
	JH-UV3	4nm	190-1020nm	±2.0nm	-0.3~3A	±0.3%T	0.1%T	0.002A/h	/	LCD digital display, light touch button, direct reading of concentration test data, standard curve can be made. Automatically set the wavelength and automatically correct the blank.
	JH-UV5	2nm	190-1100nm	±0.5nm	-0.3~3A	±0.3%T	0.05%T	0.001A/h	±0.002A	Numeric keyboard makes the operation more convenient. Data and curve are kept when power is off. Optional PC scanning software to realize wavelength scanning, etc.

## 14. Fully automatic intelligent microwave digestion instrument



### Brief Introduction

Microwave digestion apparatus is a practical microwave chemical reaction equipment, Microwave digestion technology uses the penetration and activation capacity of microwave to heat the reagents and samples in the closed container, which can increase the pressure in the sample preparation container and the reaction temperature, thus greatly improving the reaction rate and shortening the time of sample preparation.

### Fields of use

Microwave digestion widely used in heavy metal detection, organic pollutants extraction, material synthesis and other fields.

### The main features

1. Smart-MWD60 intelligent microwave digestion instrument adopts the safe and sealed patent design to eliminate the element loss and leakage caused by exhaust, and ensure the accuracy and reliability of the analysis results of AA, ICP, ICP-MS and other elements;
2. Professional electromagnetic protection design, the only high-end microwave leakage protection standards;
3. Using ergonomic appearance design, with large color touch screen, free touch color graphical interface, high-end experience of real-time imaging technology, fully reflects the convenience and comfort of modern laboratory; Beyond intelligent microwave digestion instrument using the world's first technology, improve the microwave digestion instrument reaction parallelism;
4. The design standard of industrial microwave oven cavity is adopted, and the inner cavity is sprayed with multi-layer PFA(modified polytetrafluoroethylene) to prevent the long-term corrosion of strong acid.

### Technical parameters

Model	Smart- MWD 50	Smart- MWD 60
Power supply	220-240 VAC 50/60Hz 15A	220-240 VAC 50/60Hz 15A
Microwave source	2450MHz, Dual magnetron high-energy microwave field emission	2450MHz, Dual magnetron high-energy microwave field emission
Whole machine installation power	3200W	3200W
Maximum microwave output power	2200W, Microwave non-pulse continuous automatic frequency conversion control	2200W, Microwave non-pulse continuous automatic frequency conversion control
Display screen	Large 7-inch touch LCD display	Large 7-inch touch LCD display
Software system	ARM chip equipped with ZGI operating system	ARM chip is equipped with ZGI operating system, three-level user authority management, audit trail function, mouse can be connected
Microwave cavity	65L large volume 316L stainless steel cavity, internal and external	65L large volume 316L stainless steel cavity, internal and external



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	multi-layer corrosion-resistant PFA Teflon coating	multi-layer corrosion-resistant PFA Teflon coating
Temperature control system	Real-time detection, control and display of temperatures and curves in all reaction tanks	Dual-beam and multi-target temperature control system DualZG, real-time detection, control and display of temperatures and curves in all reaction tanks
Safety explosion-proof door design	Eight-layer steel structure self-ejection explosion-proof buffer design (AUT-relief structure), electronic and mechanical double safety protection	Eight-layer steel structure self-ejection explosion-proof buffer design (AUT-relief structure), electronic and mechanical double safety protection
Pressure control system	The pressure control system G-pressure monitors the pressure of all reaction tanks in real time, automatically adjusts overpressure/stops microwave emission and automatically alarms, range: 0-2000psig	The pressure control system G-pressure monitors the pressure of all reaction tanks in real time, automatically adjusts overpressure/stops microwave emission and automatically alarms, range: 0-2000psig
Pressure measurement system	Piezoelectric pressure sensor, control pressure range: 0-20M Pa (2500 psi), display accuracy $\pm 0.1$ M Pa	Piezoelectric pressure sensor, control pressure range: 0-20M Pa (2500 psi), display accuracy $\pm 0.1$ M Pa
Temperature measurement system	High-precision optical fiber temperature sensor, temperature measurement range: -50-320°C, control accuracy $\pm 0.1$ °C, display accuracy $\pm 1$ °C	High-precision optical fiber temperature sensor, temperature measurement range: -50-320°C, control accuracy $\pm 0.1$ °C, display accuracy $\pm 1$ °C
Video surveillance system	The internal camera can monitor the operation of the digestion tank in the furnace cavity in real time	The internal camera can monitor the operation of the digestion tank in the furnace cavity in real time
Full tank temperature monitoring system	ZG infrared temperature full tank detection, temperature measurement range: 0-320°C, control accuracy $\pm 0.1$ °C	ZG infrared temperature full tank detection, temperature measurement range: 0-320°C, control accuracy $\pm 0.1$ °C
Full tank pressure passive protection system	Adopt top safety relief device (security) design, overpressure quantitative and directional automatic pressure relief	Adopt top safety relief device (security) design, overpressure quantitative and directional automatic pressure relief
External network interface (optional)	USB , RS-232	USB , RS-232
Sample reaction tank outer tank	Aerospace composite fiber material explosion-proof outer tank	Aerospace composite fiber material explosion-proof outer tank
Furnace exhaust system	High-power corrosion-resistant axial flow fan, turbulent high-efficiency air cooling, only 15 minutes from 200°C to 60°C	High-power corrosion-resistant axial flow fan, turbulent high-efficiency air cooling, only 15 minutes from 200°C to 60°C
Working environment	0-40 °C / 15-80% RH	0-40 °C / 15-80% RH



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temperature/humidity		
The physical size of the whole machine	580*680*720mm , 65kg	580*680*720mm , 65kg
Reaction tank name	14tank , high pressure tank	40 tank ,high pressure tank
Reaction tank model	ZG14	ZG40
Batch volume	14	40
Magnetic stirring	YES	YES
Inner tank material	TFM	TFM
Explosion-proof outer tank material	G-Fiber	G-Fiber
Dissolve the rotor frame structure	High-strength alloy turntable integrated frame	High-strength alloy turntable integrated frame
Reaction tank volume	100ml	10ml / 30ml / 55ml / 100ml
Maximum design pressure	20M Pa	16M Pa
Maximum design temperature	310℃	310℃

## 15. Dissolution Tester



### Brief introduction

YK-RC606 dissolution test apparatus is a high-performance 6-cup 6-bar dissolution tester designed and manufactured in strict accordance with the provisions of the Chinese Pharmacopoeia and the United States Pharmacopoeia. It has high intelligence, advanced structure, accurate control and good reliability.

YK-RC808 dissolution tester equipment is a high-performance 8-cup 8-bar dissolution test device designed and manufactured in strict accordance with the regulations of "Chinese Pharmacopoeia" and "USP", with high intelligence, advanced structure, accurate control and good reliability.

YK-RC1612 dissolution tester device is a high-performance 16-cup 12-bar dissolution tester designed and manufactured in strict accordance with the provisions of "Chinese Pharmacopoeia" and "United States Pharmacopoeia". It has high intelligence, advanced structure, accurate control and good reliability.

### The main features

1. Automatic height-setting clutch (various methods interchangeable).
2. Adjust the cup holder.
3. Adjust shafting.
4. Electric lifting of machine head.
5. DC brushless water pump, low noise and long life.
6. PTC heater, temperature switch multiple protection.
7. 1/3B high-precision Pt1000 temperature sensor imported from Germany, with fast response and high precision.
8. It supports sequential dosing and synchronous dosing, and you can choose whether to suspend stirring when dosing.
9. Redundant wiring design ensures that the connectors are firm and reliable.
10. Rights management system.
11. Audit trail functionality.
12. 7-inch high-definition touch screen.
13. Optional online printing, fingerprint identification, LAN, WiFi, Bluetooth, RS232 and RS485, etc.

### Technical parameters

Model	YK-RC606	YK-RC808	YK-RC1612
Number of devices	6 cups	8 cups and 8 rods.	12 cups and 12 rods
Applicable methods	basket method, paddle method, small cup method, dish method (large and small dish), drum method (long and	"Chinese Pharmacopoeia" first method (basket method), second method (paddle method), third	"Chinese Pharmacopoeia" first method (basket method), second method (paddle method), third





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	short drum)	method (small cup method), fourth method (paddle and disc method), fifth method (drum method)	method (small cup method), fourth method (paddle and disc method), fifth method (drum method)
Stirring speed	25RPM-250RPM		
Stirring direction	clockwise, counterclockwise	clockwise, counterclockwise	clockwise, counterclockwise
Stirring speed resolution	0.01RPM		
Water bath temperature	room temperature - 45.00°C	room temperature - 45.00°C. (The heating temperature can be selected up to 55°C)	room temperature - 45.00°C. (The heating temperature can be selected up to 55°C)
Temperature resolution	0.01°C		
Dosing mode	synchronous dosing,	synchronous dosing	synchronous administration
Rights management	four levels, seven users	four levels, seven users	three levels, seven users
Audit trail	128 entries × 365 days		
Power supply	220V, 50Hz		

## 16 Dissolution Sampling System

### 16.1 Dissolution Sampling System = YK-RCQY8



#### Brief introduction

The YK-RCQY8 Dissolution Sampling is a new type of sampler independently developed by Tianfa Analytic. It can be adapted to a dissolution apparatus with a sampling system and can be connected to form a dissolution sampling system. The YK-RCQY8 Dissolution Sampling Can upgrade WiFi, RS232, RS485, LAN, Bluetooth data interface.

The whole system adopts 26ml high-precision syringe as the sampling power. Fast sampling speed and high precision. The whole system has the functions of primary filtrate and distribution, which can realize the discarding of primary filtrate and the distribution of secondary filtrate to retain samples. And The YK-RCQY8 Dissolution Sampling can be collected directly into ampoules. 8-way precision syringe pump is used to realize high-precision automatic filtration, sampling and rehydration. It has a number of patented technologies, advanced structure, accurate control and high degree of intelligence.

#### The main features

- Compatible with dissolution apparatuses of most manufacturers.
- All corrosion-resistant and high-pressure pipelines.
- Equipped with pre-filter and terminal filter, the filter can be fully circulated and rinsed, and it is easy to replace.
- Equipped with 10ML sampling test tube (with sealing cap), optional sampling bottle with new sealing cap (2mL, 10mL)
- Proofing needle with acupuncture and bottle return mechanism, built-in PTFE pipe
- High precision (repeatability RSD<0.5%)
- Fast speed (pump speed <25mL/min, complete the sampling and filtration process within 30s in most cases)
- Rights management, support 3 levels 7 users.
- Audit trail functionality.
- Support fingerprint login.
- Support online printing.
- 3Q verification can be provided

#### Technical parameters

Model	YK-RCQY8
Sampling channels	8



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Sampling times	16 times
Sampling modes	accuracy, speed
Sampling accuracy	RSD<0.5%
Sampling Interval	1 minute to 999 hours 59 minutes
Single sampling volume	1ml~15ml(can be extended to30ml)
Sampling consistency	RSD≤1% between channels
Sampling repeatability	RSD≤0.5%
Syringe specifications	26ml, 0.5% accuracy
Test tube collection volume	15ml
Distribution function	Yes
Rehydration function	Equal volume rehydration
Preliminary filtration volume	0ml~10ml
Primary filter	10μm columnar filter head
On-line filter	φ25mm, filter membrane pore size 0.45μm, 0.8μm Luer connector filter, made of cellulose
Communication interface	RS232, RS485, network
Rights management	three levels, seven users
Audit trail	128 entries × 366 days
Login method	user name + password, fingerprint
Online printing	support

## 16.2 Dissolution Sampling System = YK-RCQY12



### Brief introduction

The YK-RCQY12 dissolution sampler is a new type of sampler independently developed by Tianfa Analytic. It can be adapted to a dissolution apparatus with a sampling system and can be connected to form a dissolution sampling system. YK-RCQY12 dissolution sampler Can upgrade WiFi, RS232, RS485, LAN, Bluetooth data interface.

The whole system adopts 26ml high-precision syringe as the sampling power. Fast sampling speed and high precision. The whole system has the functions of primary filtrate and distribution, which can realize the discarding of primary filtrate and the distribution of secondary filtrate to retain samples. And YK-RCQY12 dissolution sampler can be collected directly into ampoules. 12-way precision syringe pump is used to realize high-precision automatic filtration, sampling and rehydration. YK-RCQY12 dissolution sampler has a number of patented technologies, advanced structure, accurate control and high degree of intelligence.

### The main features

- Compatible with dissolution apparatuses of most manufacturers.
- All corrosion-resistant and high-pressure pipelines.
- Equipped with pre-filter and terminal filter, the filter can be fully circulated and rinsed, and it is easy to replace.
- Equipped with 10ML sampling test tube (with sealing cap), optional sample bottle with new sealing cap (2mL, 10mL)
- Proofing needle with needle punching and bottle return mechanism, built-in PTFE tube
- High precision (repeatability RSD<0.5%)
- Fast speed (pump speed <25mL/min, complete the sampling and filtration process within 30s in most cases)
- Rights management, support 3 levels 7 users.
- Audit trail functionality.
- Support fingerprint login.
- Support online printing.
- Can provide 3Q verification.

### Technical parameters

Model	YK-RCQY12
Sampling channels	12
Sampling times	16 times
Sampling modes	accuracy, speed
Sampling accuracy	RSD<0.5%
Sampling Interval	1 minute to 999 hours 59 minutes
Single sampling volume	1ml~15ml (expandable to 30ml)



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Sampling consistency	RSD≤1% between channels
Sampling repeatability	RSD≤0.5%
Syringe specification	26ml, 0.5% accuracy
Test tube collection volume	15ml
Distribution function	Yes
Rehydration function	equal volume rehydration
Primary filtration volume	0ml~10ml
Primary filter	10μm columnar filter head
In-line filter	φ25mm, filter membrane pore size 0.45μm, 0.8μm Luer connector filter, made of cellulose
Communication interface	RS232, RS485, network
Rights management	three levels, seven users
Audit trail	128 entries×366 days
Login method	username + password, fingerprint
Online printing	support

## 17. Freezing Point Osmometer



### Brief Introduction

YK-ST3000 Osmometer is an osmotic pressure molar concentration tester designed on the principle of freezing point depression. It consists of a refrigeration system, a thermal probe and an oscillator (or metal probe) for measuring current or potential difference. When measuring, dip the measuring probe into the center of the test solution and drop it into the cooling tank of the instrument. Start the refrigeration system. When the temperature of the test solution drops below the freezing point, the instrument uses an oscillator (or metal probe) to induce the solution to freeze, and automatically records the temperature of the freezing point drop.

### Fields of use

Clinical laboratories, general medicine, urology, nephrology, pediatrics, gynecology, hemofiltration, hemodialysis, pharmacy, intensive care unit (ICU), IVF, veterinary medicine, forensic science, botany, physiology, scientific research and industrial fields, biotechnology, electron microscopy applications, pharmaceutical industry, etc.

### The main features

1. Using high-precision sensors to ensure test accuracy;
2. Double refrigeration system to ensure efficient and fast testing;
3. Two-point and multi-point linear calibration can be performed to ensure the linearity of the instrument;
4. Simultaneously measure osmotic pressure molar concentration, freezing point and molar concentration ratio;
5. Multi-level authority management, authority can be freely configured;
6. Comply with 21Smart Part11 audit trail, 2020 version, "United States Pharmacopoeia" and other standards;
7. Comply with GMP, cFDA certification.



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### Technical parameters

Model	YK-ST3000
Measuring range	0-3000mosmol/kg
Sample volume	50 $\mu$ l (50 $\mu$ l-100 $\mu$ l)
Test time	<100S
Pre-cooling time	$\leq$ 3 minutes
Accuracy	$\pm$ 2mmol/kg ( $\leq$ 200mosmol/kg) $\pm$ 1%(>200mosmol/kg)
Relative standard deviation (RSD)	$\leq$ $\pm$ 1% (300 mosmol/kg)
Resolution	1mosmol/kg
Ambient temperature	10-30 $^{\circ}$ C
Power supply	AC 220V 50HZ 150W
Dimensions	220mm*270mm*340mm
Weight	15KG

## 18. Viscosity Meter

### 18.1 Ubbelohde Viscometer



#### The main features

1. Measurement environment: The constant temperature tank adopts the design principle of stainless steel double chambers and a unique circulation method, and cooperates with the circulation of refrigeration through the refrigerator to ensure that the temperature of the entire measurement tank is uniform and the temperature stability of the fluctuation reaches  $\pm 0.01^{\circ}\text{C}$ . The drainage structure (water valve) is designed to facilitate cleaning and drainage.
2. Measurement module: Each measurement unit operates independently without interfering with each other, and the measurement unit can be operated at will, and the key parts are protected by corrosion-resistant materials. (Stand difference of each measuring unit: within 0.1s, keep the online cleaning module interface)
3. Measurement method: The measurement unit adopts two pairs of imported stainless steel optical fiber sensing devices, which ensure accurate detection. The sensing device can be automatically adjusted according to the color depth of the measured sample to meet the samples of different color depths, and has the characteristics of corrosion resistance, temperature resistance and long life.
4. Viscosity tube connection method: The cover method is adopted, which is easy to connect and operate, reduces the loss of the viscosity tube, and replaces the traditional (rubber cap and briquetting) viscosity tube connection method.
5. Viscosity measurement software: The software is compiled according to the industry, national and international standard methods, the user only needs to select the standard method to run, and the result will be calculated automatically. The software supports Win7 and above systems. Software optimization and upgrade, measurement repeatability error control within ( $\pm 0.05\text{s}$ )





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6. Safety: It has over-temperature protection function and low water level alarm function, and the whole machine has leakage protection function.

#### Technical parameters

型号	YKSY800-6	YKSY800-4	YKSY800-2
Working temperature range	(RM ~ 100)°C	(RM ~ 100)°C	(RM ~ 100)°C
Temperature control accuracy	±0.01°C	±0.01°C	±0.01°C
Water temperature uniformity	±0.01°C	±0.01°C	±0.01°C
Repeatability error	±0.05s (Note: international, national standard±0.2s)	±0.05s (Note: international, national standard±0.2s)	±0.05s (Note: international, national standard±0.1s)
Measuring unit stage difference	<0.1s	<0.1s	<0.1s
Measurement time range	(0.001~999.999)s	(0.001~999.999)s	(0.001~999.999)s
Timing accuracy	0.001s or 0.1% of the measurement reading	0.001s or 0.1% of the measurement reading	0.001s or 0.1% of the measurement reading
Viscosity range	0.3-50000(mm <sup>2</sup> /s)	0.3-50000(mm <sup>2</sup> /s)	0.3-50000(mm <sup>2</sup> /s)
Number of constant temperature tanks	6	4	2
Flow through recirculating refrigerator	400W	400W	400W
Bit power	1200W	1200W	1200W
Power supply	220V±5% 50HZ	220V±5% 50HZ	220V±5% 50HZ

## 18.2 Ulrich Motion Tester——YK-SBQ81834



### Brief Introduction

TheYuke® YK-SBQ81834Ulrich Motion Tester can also be used as a high-precision cold bath for other experiments. The instrument adopts an intelligent measurement and control system, can be set with a touch of a button, and can precisely and automatically control the temperature of the test bath, which is especially suitable for the test of dilute solutions in the pharmaceutical industry.

### The main features

1. The instrument is novel in design and easy to use.
2. Intelligent measurement and control system: high-precision A/D system, Chinese display.
3. Humanized setting, man-machine dialogue.
4. The instrument control bath is bright and clear.
5. The instrument is easy to set up and easy to operate.
6. A real high-precision digital temperature control system or kinematic viscosity testing system.

### Technical parameters

Model	YK-SBQ81834
Working power supply	AC 220V±10%, 50Hz±5%
Heating power	two gears, 1000W+650W
Stirring motor	power 6W; speed 1200r/min
Temperature measurement range	15~100℃
Temperature control accuracy	±0.1℃
Constant temperature bath	capacity, 27L; inner cylinder size 300*400 Form, inner and outer two-layer cylinder (double cylinder) four holes

Operating environment	ambient temperature $-10^{\circ}\text{C} \sim +35^{\circ}\text{C}$ , Relative humidity <85%
Temperature sensor	industrial platinum resistance, the graduation number is Pt100
Power consumption of the whole machine	not more than 1800W
Dimensions	length, width and height 600*650*500mm
Weight	40KG

### 18.3 Ulrich Motion Viscosity Tester——YK-FKV1000



#### Brief Introduction

This Yuke® YK-FKV1000 Ulrich Motion Viscosity Tester is suitable for measuring the kinematic viscosity of liquid petroleum products (Newtonian liquid) at a certain constant temperature according to the provisions of the People's Republic of China Standard GB/T 265 "Petroleum Products Kinematic Viscosity Measurement Method and Dynamic Viscosity Calculation Method". Viscosity testing requirements.

#### The main features

1. The Yuke® YK-FKV1000 Ulrich Motion Viscosity adopts the form of an all-in-one machine, and the control switch adopts the form of a light touch key, which is novel in design, compact in structure, and elegant in appearance.
2. Yuke® YK-FKV1000 Ulrich Motion Viscosity adopts intelligent liquid crystal display temperature controller, which can control temperature quickly, respond quickly, overshoot is small, and the temperature control accuracy can reach  $\pm 0.1^{\circ}\text{C}$ .
3. With a wire-controlled timing button, it is used for timing display and control during experiments.
4. Using a hard glass cylinder and an electric stirring device, the sample can be observed clearly and the temperature in the bathtub is uniform.

The biggest features of this instrument are: full plastic spraying treatment, durable; ultra-thin LCD temperature controller, novel and advanced; small desktop structure, beautiful and generous; special capillary viscometer.

### Technical parameters

Model	YK-FKV1000
Working power supply	AC(220±10%)V, 50Hz
Heating device	electric heating, power 600W
Stirring motor	power 6W, speed 1200r/min
Temperature control range	room temperature to 100°C
Temperature control accuracy	±0.1°C
Temperature sensor	Industrial platinum resistance, the graduation number is Pt100
Constant temperature bath	single cylinder with 2 holes, cylinder height 240*300
Ambient temperature	room temperature to 35°C
Relative humidity	≤85%
Capillary viscometer	2 Ubbelohde capillaries in total, the inner diameter can be specified by the user or standard by our company
Dimensions	500 mm×310 mm×500 mm(length×width×height)

## 18.4 Automatic Kinematic Viscometer——YK-265A



### Brief Introduction

Good and reliable communication forms a unified and reliable measurement and control platform for each module. The Yuke® YK-265A Automatic Kinematic Viscometer adopts the high-quality, most simple modular program design, and is organically combined with the hardware, so that the heating and constant temperature, liquid level detection, timing, cleaning of the viscosity tube, printing, etc. of the kinematic viscosity measurement process can be done in a complete manner. Auto-completion, reaching the operation mode of one-click to get the result.

### The main features



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1. The optical fiber conduction detection method used by this Yuke® YK-265A Automatic Kinematic Viscometer is absolutely different from the ordinary light spot tube detection method of other manufacturers.
2. Good man-machine interface, easy to operate.
3. One-click to complete the determination of Pinnacle kinematic viscosity, simplifying the operation.
4. Four sets of preset parameters for selection.
5. The preset parameters can be modified to meet special requirements.
6. Infrared liquid level detection is not interfered by indoor light and light.
7. The liquid level detection position is adjustable and flexible.
8. All modular designs are stable and reliable.
9. Automatically store 100 test results, and view or print them at any time.
10. The testing process complies with the standard and the data is reliable.
11. The detection method is reliable and repeatable.
12. It can work continuously for a long time, and the failure rate is extremely low.

#### Technical parameters

Model	YK-265A
Temperature range	room temperature~+100°C, accuracy±0.01°C
Temperature sensor	Pt 100 stainless steel probe imported from Germany, built-in temperature correction, reliable detection results
Heating method	electric heating unit, the maximum heating power is 1500 W, and the heating rate can be programmed and controlled
Liquid level detection	infrared photoelectric detection
Display	10-inch color touch screen
Temperature correction	automatic correction, programmable correction
Data storage	100 sets of test results
Power supply	AC220V 50Hz. Maximum power 1500W
operating ambient temperature	10-40°C
Storage environment temperature	0~50°C

## 19. Rotational Viscometer

### 19.1 Brookfield Rotational Viscometer



#### Brief introduction

Widely used in the determination of the viscosity of various liquids such as oil, paint, food, paint, paper, cosmetics, chemicals, capsule adhesives and medicines.

#### The main features

1. Hot-melt adhesive, asphalt, paraffin and other molten materials testing equipment, this set of equipment has been included in the compilation of industrial standards for adhesives. the
2. It can be used as a stand-alone machine, or it can be connected to a micro-printer and a computer to realize data collection. the
3. It overcomes the disadvantage that domestic instruments can only sample once in one revolution, and realizes the technology of multiple sampling in one revolution. the
4. High subdivision drives the stepper motor to rotate, the speed is accurate and stable, and the change of AC voltage frequency does not affect the accuracy of viscosity measurement. the
5. For thixotropic non-Newtonian liquids, the timing function of the instrument can ensure good consistency data. the
6. Intelligent measurement. Automatically adjust the speed to reduce the difficulty of use for beginners. the
7. Humanized, personalized design, 0.1-200.0RPM speed stepless setting. LCD liquid crystal with blue backlight function, directly display viscosity, speed, percent torque, maximum viscosity value and temperature value of the rotor at the current speed. Viscosity values show a continuous change. There is an alarm sound prompt when the measurement range is exceeded. the
8. Data collection and drawing software can be purchased to realize data collection and data analysis, and the viscosity-temperature curve can be monitored in the whole process. A miniature monochrome printer can also be purchased to realize regular printing of measurement results. the



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9. The instrument's full scale and linearity of each gear are all measured and corrected through the computer interface, and its measurement performance and functions have reached the advanced level of the same type abroad. the
10. Using 16-bit microcomputer processor as the core, high subdivision drive stepper motor, digital LCD with blue backlight function. the
11. Different standard rotors can be selected as required. the
12. According to the need, you can choose the standard material of the Metrology Bureau to calibrate the viscometer, so that the inspection level can be in line with the international standard.

#### Technical parameters

Model	YK-NDJ-1F
Measuring range of medium viscosity	50-10 million (mPa•s/cP), number of standard rotors: 4 (21#, 27#, 28#, 29#). Optional No. 0 rotor, the measurement lower limit can reach 5mPa.s/cP
Low viscosity measurement range	5-1 million (mPa•s/cP), standard rotor number: 4 (21#, 27#, 28#, 29#). Optional No. 0 rotor, the measurement lower limit can reach 1mPa.s/cP
The temperature control range of the heating furnace	room temperature +10°C-250°C (if you need a higher temperature, please specify)
Temperature control accuracy of heating furnace	±0.1 °C
Speed	0.1 rev/min-200.0 rev/min stepless speed change (no gear drive)
Measurement accuracy	±1.0% (full scale)
Reproducibility	0.5% (full scale)
Input voltage	110V/220V
Input frequency	50Hz/60Hz
Optional accessories	Ultra-low viscosity adapter (rotor 0), micro-printer, SNB data acquisition and plotting software, standard oil

## 19.2 Brookfield Heating Viscometer



NDJ-1C

### Brief introduction

The newly designed NDJ-1C high-temperature Brookfield rotational viscometer not only has more modern aesthetic elements in appearance, but also has more convenient operation, more accurate measurement and more complete functions. Brookfield rotational viscometer (NDJ-1C) can measure the dynamic viscosity of hot melt adhesive, asphalt, paraffin and other high temperature melting materials. This machine adopts the latest international microcomputer drive technology, imported stepping motor, and LCD backlight display. It has functions such as timing measurement, level bubble front, stable speed, good accuracy, programmed design, easy operation, and error alarm. The screen directly displays Viscosity, speed, percent torque, rotor number, temperature of the liquid to be measured, etc. The instrument's full scale and linearity of each gear are all measured and calibrated through the PC interface, using standard samples of different viscosities to ensure that the instrument has good accuracy and repeatability.

### The main features

1. The measurement data is directly displayed on the LCD screen without secondary calculation.
3. Using switching power supply technology, the voltage and frequency range is wide, and the fluctuation of the power supply will not affect the measurement accuracy.
4. The level display device is on the front of the viscometer, which is very convenient to adjust (new function).
5. The accuracy of the displayed value of the viscosity is accurate to two decimal places, that is, 0.01mPa.S (new function).
6. It has the function of timing measurement, which is very practical for detecting non-Newtonian liquids (new function). the
7. Some wax-like samples have very low viscosity and can be measured with 0# rotor (new function).
8. The high-temperature furnace adopts built-in overall heating, which is evenly heated and has small thermal inertia.
9. The temperature controller adopts the latest algorithm self-tuning PID adjustment technology, and the temperature control is accurate. The large-screen backlit LCD screen directly displays information such as set temperature, actual temperature, working status, heating power, etc., and is easy to operate.
10. It can automatically display the viscosity range that can be measured by the selected combination.
11. With a printing interface, it can be directly connected to a micro-printer to print various data (new function).





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#### Technical parameters

Model	NDJ-1C
Display mode	backlit LCD, digital display
Speed(r/min)	0.5 / 1 / 2 / 5 / 10 / 20 / 50
Rotor	21#, 27#, 28#, 29#
Measuring range (mPa.s)	10~200,000 (200,000) (standard configuration, using 21, 27, 28, 29# rotors) 1-100 (use 0# rotor) (optional, please specify when ordering)
Measurement error(Newtonian liquid)	±3%
Repeat error(Newtonian liquid)	±0.5%
Heating method	electric heating
Temperature control range	room temperature +10°C ~ 250°C
Temperature control accuracy	0.1°C
Temperature measurement interface	YES
Data output interface	YES
Data processing software	optional
Dimensions (mm)	300 × 300 × 450

### 19.3 High Range Digital Rotational Viscometer



#### Brief introduction

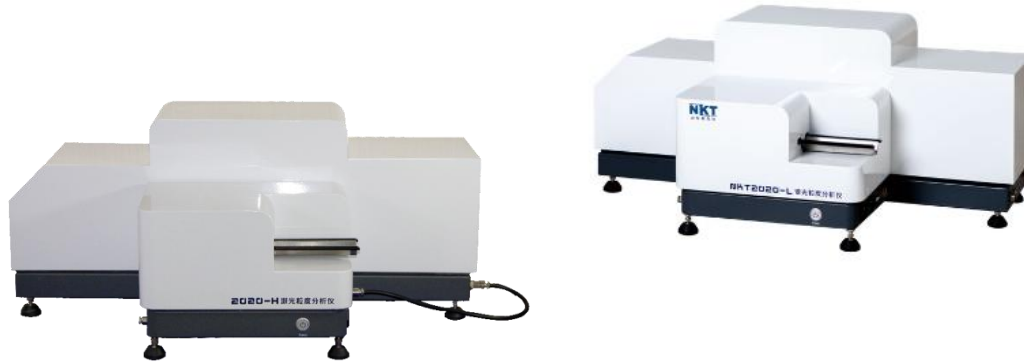
The high range digital rotational viscometer is used to measure the viscous resistance of liquid and the dynamic viscosity of liquid. The high range digital rotational viscometer is used to measure the viscous resistance of liquid and the dynamic viscosity of liquid.

It range digital rotational viscometer is widely used in the determination of the viscosity of various liquids such as oil, paint, food, paint, paper, cosmetics, chemicals, capsule adhesives and medicines.

#### Technical parameters

Model	NDJ-8S	NDJ-5S
Measuring rotor	#1. #2. #3. #4 four rotors	#1. #2. #3. #4
Measuring speed	0.3, 0.6, 1.5, 3, 6, 12, 30, 60RPM/min	6r/min. 12r/min. 30r/min. 60r/min
Measuring range	10mPa.s-2000000mPa.s(1mPa.S=1cp)	10mPa.s-100000mPa.s(1mPa.S=1cp)
Measurement error	±3%	
Dimensions	95*130*155 (excluding the base)	
Net weight	2kg (excluding the base)	

## 20. Fully Automatic Dry Laser Particle Size analyzer



JH2020-L

### Brief introduction

Our company regards "creating the most stable domestic laser particle size instrument" as its own responsibility, and takes science and technology to create a brand, quality to enter the market, and reputation to win the world as its policy, and strives to create an ultra-stable and cost-effective domestic laser particle size instrument. YK2020-L Dry Intelligent Automatic Laser Granulometer has won unanimous praise from customers since its launch.

YK2020-L Dry Intelligent Automatic Laser Granulometer is a dry automatic laser particle size analyzer, which is widely used in the powder industry. Our company has designed different templates for different industries. Customers can choose cement templates, abrasive templates, etc. according to their needs.

### The main features

The optical path is upgraded to a double-lens design: strictly refer to international standards, effectively improve the effective optical path of sample dispersion, avoid errors caused by calculation, and make the measurement results more accurate. The converging light Fourier transform test technology is used to ensure the maximum range at the shortest focal length, effectively improve the resolving power of the instrument; the unique arrangement of small probes enables the 2010 to have super small particle testing capabilities. The superior automatic centering system and computer operating system highlight the humanized design of YK2020-L.

Highly stable optical path optimization: The ingenious design allows YK2020-L Dry Intelligent Automatic Laser Granulometer to have the most advanced high-stable optical path. It uses high-stability, high-power fiber output lasers. The excellent configuration makes YK2020-L have super stability; the main optical path A fully enclosed design is adopted to ensure that the instrument can be tested in a complex environment for a long time.

★Fully sealed fiber semiconductor laser: It adopts a highly stable and long-life fully sealed imported fiber semiconductor laser. The excellent stability makes YK5200-H have super test repeatability, and its life is more than 30,000 hours.

★Laser power monitoring and automatic adjustment: exclusive use of constant power laser, real-time detection of laser power and automatic adjustment function, effectively avoiding the problem of laser power attenuation caused by long-term use. At the same time, a constant current, constant voltage and high filter laser power supply is used to effectively prolong the life of the laser, and the normal use can reach more than 30,000 hours.

★Laser intelligent management system: YK2020-L Dry Intelligent Automatic Laser Granulometer is the first to add a laser intelligent management system. The intelligent management system monitors the working status of the instrument in real time. Once it receives a work order, the intelligent management system will



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instantly light up the laser, and the high-performance laser will be activated within 3 seconds. to achieve a stable working state. After the sample test is completed, the intelligent management system will automatically turn off the laser, and the laser will basically not attenuate. In theory, there is no need to replace the laser for life.

Unique dry dispersing system: YK2020-L dispersing system is optimized on the basis of French theoretical data, which makes YK2020-L disperse dry powder more evenly, and the super negative pressure ensures the continuity and uniformity of feeding , effectively avoid the mutual adhesion of dry powder during the test. The feeding method is newly upgraded: the upgraded dispersed samples directly enter the measurement area, which can effectively solve the problem of inaccurate test results caused by the secondary agglomeration of samples; at present, only our family adopts this method in China, and imported instruments are also In this way, other manufacturers have to pass through a hose after dispersing, which will cause the samples to reunite.

Detector: The YK2020-LDry Intelligent Automatic Laser Granulometer detector adopts a new design combining the main detector and the auxiliary detector, which ensures seamless detection in the full range of the instrument and makes the test more accurate. The main detector is designed with an automatic centering system, which can realize one-key automatic centering of the instrument, highlighting the humanized design. At the same time, it effectively avoids damage to the detector by manual centering, effectively prolonging the service life of the instrument.

Dust-proof and shock-proof design: The instrument is sealed as a whole, which greatly improves the service life of internal components. The unique suspension structure can effectively avoid the interference of external vibration to the instrument, making the test results more stable and reliable.

Automatic calibration of the optical path: the optical path changes slightly, and the instrument can adjust the optical path by itself to avoid damage to the detector during manual adjustment.

No residue in the pipeline: After the test is completed, there is no residual sample in the pipeline, which will not interfere with the next test.

Computer-controlled feeding: The tester can accurately control the feeding amount of the instrument with the help of a computer.

Software: Complies with the GMP regulations of the Pharmacopoeia, and has functions such as electronic signature, authority setting, data tracking, and data cannot be changed.

#### Technical parameters

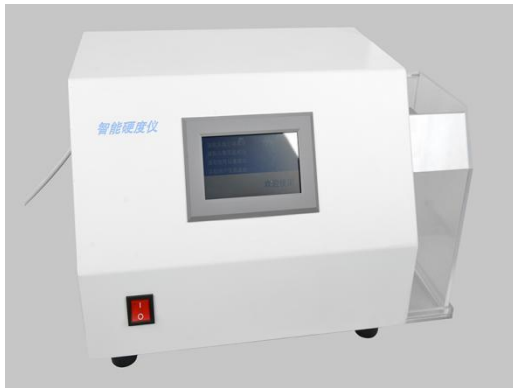
Model	YK2020-L	YK2020-H
Executive standard	ISO 13320-1:1999; GB/T19077.1-2008	ISO 13320-1:1999; GB/T19077.1-2008
Test range	0.1μm -1250μm	0.1μm -2000μm
Number of detector channels	101	109
Accuracy error	<1% (D50 value of national standard sample)	
Repeatability error	<1% (D50 value of national standard sample)	
Feeding method	Mechanical stepless speed regulation vibration feeding, software control	
Oil-free silent air compressor	with dust filtering function to ensure test accuracy	
Freeze Dryer	he freeze dryer can filter the moisture in the air to ensure the dispersion effect	
Misoperation protection	The instrument has the self-protection function of misoperation, and the instrument does not respond to misoperation	
Laser parameter	Imported fiber output high power laser λ= 650nm, p>10mW	
The laser intelligent	management system monitors the working status of the instrument in real time. Once the intelligent management system receives the work order, the laser will be turned on instantly, and the high-performance laser will reach a stable working state within 3 seconds.	



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Lens	Imported Canon lens
Dispersion method	High pressure air dispersion
Intelligent operation mode	Software intelligent automatic control operation
Optical path alignment	Optical path automatic calibration
Test speed	<1min/time (excluding sample dispersion time)
Volume	980mm*410mm*450mm
Weight	35KG
software function	
Test report	The test report can be exported to Word, Excel, picture (Bmp) and text (Text) documents in various forms, satisfying the need to view test reports on any occasion and quote test results in scientific research articles
Self-DIY	user-defined data to be displayed, find the percentage according to the particle size, find the particle size according to the percentage
Statistical method	Volume distribution and quantity distribution to meet different statistical methods for particle size distribution in different industries
Statistical comparison	Statistical comparative analysis can be carried out for multiple test results, and the difference between different batches of samples, samples before and after processing, and test results at different times can be clearly compared, which has strong practical significance for the quality control of industrial raw materials
Analysis modes	Include free distribution, R-R distribution and logarithmic normal distribution, statistical mode according to object classification, etc., to meet the different requirements of different industries for the particle size statistics of the tested samples
Display template	Calculate the percentage of the particle size interval to meet the characterization methods of particle size testing in different industries. Radius distance, consistency, interval accumulation, etc.
Intelligent operation mode	The truly automatic unattended operation, without interference from human factors, you only need to add the sample to be tested according to the prompts, and the repeatability of the test results is better.
Multi-language support	Chinese and English language interface support, and other language interfaces can also be embedded according to user requirements.

## 21. Intelligent Hardness Tester



### Brief introduction

YK-YD01 Intelligent Hardness Tester uses a single-chip microprocessor to control the operation interface. It uses a high-precision ball screw and a high-resolution DSP driver inside. The distance control is accurate, the degree of intelligence is high, the function is diverse, and it is easy to use.

The transmission adopts a redundant line design scheme and is equipped with a high-precision pressure sensor to ensure accurate and stable data. It can realize manual dispensing and automatic measurement. And store the measurement data. Meet the needs of major pharmaceutical companies, drug control institutes and drug research units.

### The main features

- Manual setting out to measure diameter and hardness.
- High-precision ball screw detection system.
- High resolution DSP driver.
- Redundant wiring design ensures stable and reliable connection.
- Storage quantity: 40 samples X 60 times (single account).
- Authority management: four levels of authority.
- Number of accounts: 8.
- Audit trail: 8000 entries.
- Color touch screen.
- Detection protection.

### Technical parameters

Model	YK-YD01
Hardness measuring range	10N-500N
Hardness resolution	0.01N
Hardness accuracy	±1.0%±0.1digit
Hardness measurement unit	N or KGF
Diameter measurement range	1mm-28mm
Diameter resolution	0.01mm
Diameter accuracy	±0.05mm

## 22. Open flash point tester

### 22.1 Open flash point tester = YK-267



#### Brief introduction

The manufacture of this YK-267 Open Flash Point Test Device conforms to the requirements stipulated in the industry standard SH/T 0318 of the People's Republic of China "Technical Conditions for Open Flash Point Tester" and Shanghai Enterprise Standard Q/YXYY 23 "SYD-267 Open Flash Point Tester for Petroleum Products".

YK-267 Open Flash Point Test Device is suitable for determining the flash point and ignition point of lubricating oil and dark petroleum products according to the method stipulated in the People's Republic of China Standard GB/T 267 "Determination of Flash Point and Fire Point of Petroleum Products (Open Cup Method)".

#### The main features

1. The design of this YK-267 Open Flash Point Test Device fully complies with the requirements of SH/T 0318 and GB/T 267 standards.
  2. The heating power is continuous and stepless adjustable, the power level is directly displayed by the ammeter, and the temperature control method is advanced and reasonable.
  3. It adopts desktop and compact structure design, which is easy to operate and use.
- The biggest feature of this instrument is: simple structure, continuous and stepless adjustable heating power.

#### Technical parameters

Model	YK-267
Working power supply	AC(220±10%)V, 50Hz
Outer crucible Material	(1)high-quality carbon structural steel with black plating on the surface;(2) Inner diameter of upper opening: Φ100 mm±5 mm; (3) Height: 50 mm±5 mm; (4) Bottom inner diameter: Φ56 mm±2 mm.
Inner crucible Material	(1) high-quality carbon structural steel with black plating on the surface;

	(2) Inner diameter of upper opening: $\Phi 64 \text{ mm} \pm 1 \text{ mm}$ ; (3) Height: $47 \text{ mm} \pm 1 \text{ mm}$ ; (4) Bottom inner diameter: $38 \text{ mm} \pm 1 \text{ mm}$ ; (5) Scale line: There is a scale line at 12mm and 18mm from the edge of the upper mouth
Gas conduit	The diameter of the nozzle is $\Phi 0.8 \text{ mm} \sim \Phi 1 \text{ mm}$ , and the surface of the inner hole is smooth so that the flame can be adjusted by $3 \text{ mm} \sim 4 \text{ mm}$
Heater	electric furnace heating, heating power 1000W adjustable
Thermometer	$(0 \sim 360) \text{ } ^\circ\text{C}$ , graduation $1 \text{ } ^\circ\text{C}$ , the technical conditions comply with the provisions of GB/T 514
Power consumption of the whole machine	not more than 1100W
Dimensions	$310 \text{ mm} \times 230 \text{ mm} \times 400 \text{ mm}$ (length $\times$ width $\times$ height, excluding thermometer)

## 22.2 Cleveland Open Flash Point Tester



JH-3536-1

### Brief introduction

This YK-3536-1 Cleveland Open Flash Point Tester is designed and manufactured in accordance with the requirements of the People's Republic of China Standard GB/T 3536-2008 "Determination of Flash Point and Ignition Point of Petroleum Products Cleveland Open Cup Method". Flash point and fire point of petroleum products and asphalt outside  $^\circ\text{C}$ .

### The main features

1. YK-3536-1 Cleveland Open Flash Point Tester adopts single-chip microcomputer control technology and LCD screen display, Chinese man-machine dialogue interface, continuous stepless adjustable heating power, and convenient parameter setting.
2. The liquid crystal display has a prompt menu and a prompt input operation interface, which can display the setting parameters and real-time display of the sample temperature and various test parameters. When the flash point appears, press the record key lightly, and the display will display and retain the flash point value.
3. The design is novel, the structure is compact, and the stainless steel table is beautiful. The user only needs



to add gas or other civil combustible gas to carry out the test. It is easy to use and the test result is accurate. 4. YK-3536-1 Cleveland Open Flash Point Tester is equipped with a windshield and a flame extinguishing cover, which meets the requirements of the ignition test.

The biggest feature of this instrument is: the heating rate is accurate, only need to manually observe whether the flash point appears, the rest is done automatically by the instrument, the instrument is cost-effective.

#### Technical parameters

Model	YK-3536-1
Working power supply	AC (220±10%) V, 50Hz
Heating device	Electric furnace heating, no open flame, explosion-proof, power (0~ 600) W continuously adjustable, maximum heating temperature 400°C
Temperature control	Single-chip microcomputer temperature control, the heating rate meets the requirements of GB/T 3536-2008 standard
Temperature display	The LCD screen displays various temperature parameters, the display value is (0-400) °C, and the accuracy is 0.1 °C
Sweeping device	automatic sweeping
Temperature sensor	PT100 platinum resistance temperature sensor
Ignition device	(1) Ignition source: coal gas (or other civil combustible gas); (2) Nozzle aperture: about 0.8 mm
Relative humidity	≤85%
Power consumption of the whole machine	not more than 650W
Dimensions	340 mm×320 mm×450 mm (length×width×height, including sensors)
Ambient temperature	(-10~ 50)°C

### 22.3 Automatic Open Flash Tester



#### Brief introduction



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YK-3536A Automatic Open Flash Tester is designed and manufactured according to the requirements of the People's Republic of China Standard GB/T 3536-2008 "Determination of Flash Point and Ignition Point of Petroleum Products Cleveland Open Cup Method". The flash point of petroleum products with an open cup flash point higher than 79°C.

YK-3536A Automatic Open Flash Tester is an automatic open flash point tester, which is an ideal substitute for similar imported instruments, and can be widely used in railway, aviation, electric power, petroleum industries and scientific research departments.

YK-3536D Fully Automatic Open Flash Point Tester is designed and manufactured in accordance with the requirements stipulated in the standard of the People's Republic of China GB/T 3536-2008 "Determination of Flash Point and Fire Point of Petroleum Products (Cleveland Open Cup Method)". And the open cup method flash point of petroleum products with an open flash point lower than 79°C.

YK-3536D Fully Automatic Open Flash Point Tester can be widely used in the railway, aviation, electric power, petroleum industry, colleges, scientific research institutes, metrology and testing departments and other units to detect and test the flash point and ignition point of petroleum products.

#### The main features

##### YK-3536A Automatic Open Flash Tester Main technical features

1. The YK-3536A Automatic Open Flash Tester adopts a large color LCD display, a touch-screen keyboard, and a full-Chinese man-machine dialogue interface. For parameters such as predictable flash point, sample label, atmospheric pressure, and test date, it has prompt menus and guided input functions. There are operating knowledge prompts on the screen.
2. Simulation tracking shows the function curve of temperature rise and test time. It has a small operation knowledge interface, Chinese misuse software prompt function, and can modify test date, test time and other parameters.
3. YK-3536A Automatic Open Flash Tester can store 10 screens and 120 sets of historical data.
4. No gas source is needed, and electronic ignition is adopted, which is safe to use and easy to operate.
5. Automatically correct the influence of atmospheric pressure on the test and calculate the correction value.
6. Differential detection, automatic correction of system deviation.
7. Swiping, testing, and printing data are automatically completed, and the test arm automatically rises and falls.

##### YK-3536D Fully Automatic Open Flash Point Tester Main features

1. Fully automatic open flash point tester, used to determine the open flash point value of petroleum products.
2. Adopt 8-inch pure industrial true-color touch screen, switch between Chinese and English interfaces at will, and WindowsCE embedded operating system.
3. YK-3536D Fully Automatic Open Flash Point Tester has the self-diagnosis function of the instrument to check whether there is any fault and display its status.
4. Input the atmospheric pressure value to automatically correct the influence of atmospheric pressure on the test and calculate the correction value.
5. The lower computer stores 120 sets of historical data.
6. The ignition mode can be selected manually or automatically. (This machine is electric ignition)
7. Detection, scanning, ignition and printing are all fully automatic.
8. Adopt imported Renesas single-chip microcomputer and PT1000 high-precision temperature sensor imported from Germany.
9. It has the function of preventing fire from overheating and automatically stopping work.
10. The instrument is equipped with a ignited fire extinguishing cover that automatically extinguishes the ignited flame.



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- 11. Built-in high-precision flash point detection sensor, the detection time can reach millisecond level.
- 12. Simulation tracking shows the function curve of temperature rise and test time.

### Technical parameters

Model	YK-3536A	YK-3536D
Working power supply	AC220(-10%~+5%)V, 50Hz	AC (220±10%) V, 50Hz
Temperature measurement	Range: room temperature to 400°C;Temperature display unit: 0.1°C	
Repeatability	≤8°C (flash point and fire point)	
Reproducibility	≤17°C (flash point), ≤14°C (ignition point)	
Heating speed	in line with GB/T3536 standard	
Ignition method	electronic ignition	ignite with electronic ignition
Ambient temperature	(10~40)°C	
Relative humidity	≤80%	
Power consumption of the whole machine	not more than 400W	not more than 500W
Dimensions	(when the lifting arm is not lifted) 410 mm×360 mm×310 mm (length×width×height); (When the lifting arm is raised) 410 mm×360 mm×420 mm (length×width×height)	(when the lifting arm is not lifted) 520 mm×360 mm×310 mm (length×width×height); (When the lifting arm is raised) 520 mm×360 mm×420 mm (length×width×height).

Note: This instrument requires special order.

## 23. Closed Flash Point Test Device

### 23.1 Closed Flash Point Test Device = YK-261-1



#### Brief introduction

YK-261-1 Closed Flash Point Test Device is designed and manufactured in accordance with the requirements stipulated in the national standard GB/T 261-2008 of the People's Republic of China "Pinsky-Martin Closed Cup Method for the Determination of Flash Point", and is suitable for the The method is to determine the flash point of petroleum products with a flash point higher than 40°C by the closed cup method.

YK-261A Automatic Closed Mouth Flash Dot Testor is designed and manufactured in accordance with the requirements stipulated in the industry standard SH/T 0315 "Technical Conditions for Closed Flash Point Meter" of the People's Republic of China.

YK-261A Automatic Closed Mouth Flash Dot Testor is suitable for determining the closed cup flash point of petroleum products according to the method stipulated in the standard GB/T 261-2008 of the People's Republic of China "Determination of Flash Point - Pinsky-Martin Closed Cup Method".

#### The main features

##### YK-261-1 Closed Flash Point Test Device Main technical features

1. The biggest feature of this YK-261-1 Closed Flash Point Test Device is: accurate heating rate, in line with GB/T 261-2008 standard requirements
2. Using single-chip microcomputer control technology and LCD screen display, Chinese man-machine dialogue interface, continuous stepless adjustable heating power, convenient parameter setting.
3. The liquid crystal display has a prompt menu and a prompt input operation interface to display the setting parameters and real-time display of the sample temperature and various test parameters. When the flash point appears, press the record key lightly, and the display will display and retain the flash point value.
4. The design is novel, the structure is compact, and the stainless steel table is beautiful. The user only needs to add gas or other civil combustible gas to carry out the test. It is easy to use and the test result is accurate. The biggest feature of this instrument is: the heating rate is accurate, only need to manually observe whether the flash point appears, the rest is done automatically by the instrument, the instrument is cost-effective.

##### YK-261A Automatic Closed Mouth Flash Dot Testor Main technical features



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1. YK-261A Automatic Closed Mouth Flash Dot Testor adopts large color LCD display, full Chinese man-machine dialogue interface, no logo keyboard, and has prompt menu-guided input for parameters such as predictable temperature, sample label, atmospheric pressure, and test date.
  2. The simulation track shows the function curve of temperature rise and test time. It has the function of Chinese misuse software prompting and modifying, and the function of prompting parameters such as test date and test time.
  3. Can store 100 sets of historical data.
  4. Automatically correct the influence of atmospheric pressure on the test and calculate the correction value.
  5. Differential detection, automatic correction of system deviation.
  6. Open the cover, ignite, detect, and print data automatically, and the test arm automatically rises and falls.
  7. Humanized appearance design, beautiful, safe and easy to operate.
- The biggest feature of this instrument is: the color display screen displays various setting parameters and test parameters, the whole test process is automatically completed, and the test results are automatically printed.

#### Technical parameters

Model	YK-261-1	YK-261A
Working power supply	AC(220±10%)V, 50Hz	AC220 (-10%~+5%)V, 50Hz
Heating device	(1) The furnace body is made of silicon carbide material, and the power is 600W electric heating wire. (2) The heating power is adjustable from 0 to 600W	-
Sample heating rate	Step A: (5~6) °C/min; Step B: (1~1.5)°C/min; automatic control.	Step A: (5~8)°C/min; Step B: (1~1.5)°C/min; Automatic control, manual adjustable.
Electric stirring device	(1) Stirring motor (BYGH101 stepping motor). (2) Transmission mode: flexible shaft connection. (3) Stirring blade specification: 8 mm ×40 mm.	-
Stirring speed	Meet the requirements of GB/T 261-2008 standard. (1) (90~120) rpm, suitable for test step A. (2) (250±10) rpm, applicable to test step B.	(1) (90~120) rpm, suitable for test step A. (2) (250±10) rpm, applicable to test step B. Automatic control, manual fine-tuning.
Ignition device	(1) Ignition source: coal gas (or other civil combustible gas, the same below). (2) Igniter aperture: (0.7~0.8)mm.	gas flame (ignited by gas ignition)
Temperature probe	Pt100	-
Ambient temperature	≤35°C	(10~40)°C; relative humidity: ≤80%
Relative humidity	≤85%	-
Power consumption of the whole machine	not more than 650W	not more than 500W
Dimensions	340 mm ×330 mm ×380 mm (length×width×height)	(when the lifting arm is not lifted) 410 mm ×360 mm×310 mm (length×width×height); (When the lifting arm is raised) 410 mm ×360 mm×420 mm (length×width×height).

## 23.2. Full Automatic Closed Flash Point Test Device



### Brief introduction

The YK-261D Full Automatic Closed Flash Point Test Device is designed and manufactured according to the requirements stipulated in the national standard GB/T261-2008 "Determination of Flash Point: Pensky-Martin Closed Cup Method". It is applicable to the method specified in this standard to determine the lowest temperature when the closed cup of petroleum products is heated under specified conditions until the mixture of its steam and air comes into contact with the flame and flashes, that is, the flash point of the closed cup method. The product can be widely used in customs, railway, aviation, electric power, petroleum industry and scientific research departments.

### The main features

1. The core host adopts TI's AM3354 processor, Cortex-A8 core, 1GHz main frequency; the operating system adopts Windows Embedded Compact 7 real-time industrial control system. Completely abandon the single-chip microcomputer with no core and no operation streaking, truly realize the modernization of instrument control, and make the instrument enter a new era of intelligence.
2. The display adopts an imported 7.0-inch 800×480 pixel true-color TFT-LCD display; the keyboard adopts a human body induction touch screen. The operation interface is all in Chinese, the display is exquisite, intuitive and elegant, the operation is convenient, and the touch is free.
3. The historical data storage adopts NVM data memory storage, which can store 560 historical data, and the data can be stored for 10 years without loss, and the stored data cannot be changed.
4. The printer adopts a miniature embedded thermal printer, which prints more quietly, quickly and clearly.
5. Temperature measurement and control adopts imported PT100 platinum resistance temperature sensor, high-precision AD converter, excellent linear mathematical model, and unique control algorithm to make temperature measurement and control faster, more accurate and more stable.
6. The ignition is directly ignited by the electronic flame, which is exactly the same as the gas flame ignition, which is safe, convenient, fast, reliable and without interference.
7. The flash fire detection adopts the high-frequency ion ring flame detection technology, so that the instantaneous flash fire of the sample can be quickly and accurately captured, avoiding false detection and missed detection.

8. Atmospheric pressure measurement adopts an atmospheric pressure sensor with a fully digital structure imported from Germany to measure the local atmospheric pressure in real time and automatically correct the influence of atmospheric pressure changes on the measurement data.
9. Automatically complete heating, detection, calculation, printing and other operations.
10. The shell of the whole machine is made of engineering plastic ABS material, which is beautiful in appearance, lighter in weight than the previous metal shell, more convenient to move, and safer to operate.

#### Technical parameters

Model	YK-261D
Measuring range	room temperature to 300°C
Measurement accuracy	0.1°C
Repeatability	≤4°C
Ignition method	direct ignition with high-voltage self-excited arc technology
Flash fire detection	adopt pulse high voltage ion ring flame detection technology
Data storage	560 historical data can be stored, which cannot be deleted, and will be kept when power off
Cooling method	strong air cooling
Ambient temperature	room temperature ~45°C
Ambient humidity	≤85%
Power supply	220±5% V.A.C
Frequency	50±2.5% Hz
Power	500W
Dimensions	466×400×290mm
Instrument weight	20Kg

### 23.3. Quick Low Temperature Closed -mouth Flash Dot Testor



#### Brief introduction

This YK-5208D Quick Low Temperature Closed -mouth Flash Dot Testor is designed and manufactured in accordance with the requirements of the People's Republic of China Standard GB/T 5208-2008 "Determination of Flash Point Rapid Equilibrium Closed Cup Method", which can meet the requirements of petroleum, chemical, coating, paint, railway, aviation, electric power, commodity inspection, Requirements of troops and scientific research units for closed flash point quick test of petroleum products.

This YK-5208D Quick Low Temperature Closed -mouth Flash Dot Testor is especially suitable for testing the closed-cup flash point of various paints, adhesives, solvents, petroleum and related products with a closed-cup flash point within the range of 0°C to 100°C. The instrument also complies with the requirements of the ISO 1523 and ISO 3679 standards.



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### The main features

1. Designed according to the standard of GB/T 5208-2008 "Determination of Flash Point: Rapid Equilibrium Closed Cup Method", to achieve the purpose of fast and low temperature test of closed cup flash point.
2. Using semiconductor refrigeration device and external cooling water cooling device, the instrument is small in size, fast in cooling speed and easy to use.
3. There are few test samples, only 2ml is needed for each injection (4ml for each injection of solid or semi-solid samples).
4. In addition to ignition, the test process is automatically completed, and the test results are automatically printed.
5. Using touch screen control technology, the operation control is all completed on the display screen, with advanced functions and convenient operation.

### Technical parameters

Model	YK-5208D
Working power supply	AC(220±10%)V, 50Hz
Flash point detection range	(0~100)°C
Measurement precision	The absolute difference between the two experimental results is less than 2°C (same operator); The absolute difference between the two experimental results is less than 3°C (different operators);
Temperature control accuracy	±0.5°C
Ignition device	electronic ignition gun ignition
Gas supply source	artificial gas, liquefied petroleum gas (or other civil combustible gas);
Refrigeration method	semiconductor refrigeration (external cold water cycle);
Power consumption of the whole machine	not more than 300W;
Ambient temperature	(5~30)°C
Relative humidity	(30~80)%
Dimensions	370 mm×280 mm×280 mm (length×width×height)