

## MP300

### Automatic Melting Point Apparatus

Hanon MP120 /MP300 Auto Melting Point Apparatus are integrated with photoelectric detection, digital temperature display and other technologies, boasts automatic display of initial and final melts and other functions. In the temperature system, linearly calibrated platinum resistor is used as the detection device, offering efficient and accurate test process and results. The apparatus can be widely used in the chemical industry and medicine research and is essential for the production of medicines, spices, dyes and measurement of other organic crystal substances.

MP300



#### Maximum Productive

Three independent temperature detection systems ensure the detection of three samples of varied melting points.

## MP120

### Automatic Melting Point Apparatus

MP120



- Advanced true-color VGA touch screen is easy for operation and observation.
- 8-level linear temperature rise design is satisfactory for varied temperature rise options.
- Wider temperature control scope and higher temperature accuracy.
- Optimal cooling rate and sample test speed.
- Exclusive integral design.

Note:● with the same technical index

#### Characteristics

- Advanced true-color VGA touch screen is easy for operation and observation.
- 8-level linear temperature rise design is satisfactory for varied temperature rise options.
- Wider temperature control scope and higher temperature accuracy.
- Optimal cooling rate and sample test speed.
- The variation curve of tested sample can be displayed in a timely manner.
- RS232 interface, associated computer software and external computer control are available.
- Detailed test data can be stored.
- Exclusive integral design.

#### Technical data

	MP120	MP300
Melting point range	50°C--400°C	●
"Initial temperature" setting rate	≤6 min(50°C--400°C)	●
	≤7.5 min(400°C--50°C)	●
Temperature resolution	0.1°C	●
Repeatability	0.2°C at heating rate of 0.2°C/min	●
Temperature accuracy	±0.4°C(<200°C),±0.7°C(<300°C)	●
Temperature gradients	0.1/0.2/0.5/1/2/3/4/5°C/min	0.1-5°C/min 50gradients
Standard capillary size	I.D. 1.0mm, O.D. 1.4mm	●
Capacity per batch	1pc./batch	3pcs./batch
Power supply	220VAC±10% 50Hz	●
Power	150W	300W
Net weight	12kg	16kg
Dimensions	455mmX312mmX200mm	523mmX312mmX200mm



## SH420F

### Kjeldahl Digestion System

Hanon SH420F Graphite Digester adopts globally advanced high-temperature infrared radiation heating technology and microprocessor control platform, accurate temperature control and quick temperature rise. It has two kinds of temperature rise mode: linear and curve temperature rise mode, and offers 20 digestion programs for control of temperature rise curves.

Neutralization system is including ternary filtration functions, condensation, neutralization and filtration. The product adopts high-quality anticorrosive Pumps, low noise, strong suction, reduce exhaust emissions, eco-friendly.



#### Characteristic

- 20 positions enhance working efficiency rapidly.
- Graphite block have longer life after special anti-oxidation processing and heating more uniform.
- Corrosion-resistant design.
- It adopts advanced PID temperature control technology, high accuracy heating up to 400°C only 25minutes.
- Multi-protection, Over-current protection, high temperature warning, overload protection.
- It adopts 5.7" color screen, easy for use.
- Standard configuration with waste gas collection hood WD03.
- Temperature control model, program control, curve and linear temperature rise.

#### S402 Exhausting System

- Mould design, compact appearance.
- Absorption device area is translucence design, easy for inspection and changing.
- Suction pressure is adjustable when become negative, to avoid acid gas spilling or emptying.
- Anticorrosion vacuum pump, low noise, large suction, reduce wasted gas exhausting and environmental friendly.
- Ternary filtration system (water condensation, alkali neutralization and active carbon filtration) ensure perfect neutralization and absorption performance. PTFE anticorrosion pipe design, improve using life.



S402

## SH220F

### Kjeldahl Digestion System



#### SH220F

SH220F Graphite Digester includes globally advanced technology, features quick digestion, high efficiency and easy for use, etc., It's widely used in such fields as food, medicine, agriculture, forestry, environmental protection, chemical engineering, biochemistry, as well as universities, research departments and so on, for sample digestion prior to the chemical analysis of soil, feed, plants, seeds, minerals etc., suitable for matching K9840 analyzer.



#### WD03 Gas Collection Hood

Using PFA sealed cap, longer life, dealing effect well. Clip-on sealing cap, easy for changing. Specialized water jet vacuum pump is adopted, don't need electric power. Drip tray design, reduce corrosion damage from acid solutions.

#### Characteristic

- 20 positions, enhance working efficiency rapidly.
- Corrosion-resistant design.
- It adopt advanced insulation technology, eco-friendly, reduce energy intensity maximum limitedly.
- Multi-protection, Over-current protection, high temperature warning, overload protection.
- LCD display.
- It's used with microwave reaction system, pretreat for microwave digestion or removing acid after digestion.

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

#### Technical data

	SH420F	SH220F
Temperature range	Room temperature +5 - 450°C	●
Temperature accuracy	±1°C	●
Heating method	Infrared heating and high-purity graphite conduction	●
Heating insulation method	unique air duct insulation technology	●
Digestion tube capacity	300mL	●
Capacity per batch	20pcs/batch	●
Power supply	220 VAC±10% 50HZ	●
Power	3600W	●
Dimensions	515mmX458mmX730mm	515mmX421mmX211mm
Net weight	40Kg	25Kg



## K1160 Automatic Kjeldahl Protein/Nitrogen Analyzer

K1160 Automatic Kjeldahl Protein/Nitrogen Analyzer is unique in its intelligence, efficiency, energy saving and data sharing, bringing more new experiences to users. The product can be widely used in the fields of food processing, feed production, tobacco, animal husbandry, soil fertility, environmental monitoring, medicine, agriculture, scientific research, teaching, quality supervision and other fields of nitrogen or protein determination.



### Features:

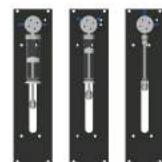
- Automation, Fully automatic distillation, titration, calculation, printing, waste disposal, fault self-test and can be paired with 24 positions auto sampler for true unattended operation, making the whole experiment process simple and efficient.



- Compliance with FDA 21CFR Part.11 and GMP, it have the function of authorization management, account management, experiment data traceable password-aging and editing protection,etc.



- High accuracy, burette accuracy can be adjust from 0.2 to 1 $\mu$ L/Step.



### Specifications:

- With side-distillation titration and variable-speed titration technology, reducing experiment time by one-third
- New Android operating system, easy to use, powerful, with 10 inch high-definition color touch screen, real-time control of the entire experimental process
- With batch testing function, it makes the batch sample experiment operation simple and simple, reducing test time
- Monitoring the condensate effluent temperature in real time to ensure complete condensation of the sample, ensuring the test results are accurate and reliable
- Privilege grading function, which can realize data traceability management and meet the requirements of GMP and 21CFR Part11
- The titration module is used to titrate the receiving liquid, the titration result is more accurate, and the titration precision is higher.
- The titration graph displays the online monitoring of the entire experimental process in real time, and the experimental method can be adjusted in real time to improve the test accuracy and efficiency.
- Up to 24 positions auto sampler, the K1124 auto sampler does not require a separate power supply and is directly connected to the K1160 fully automatic Kjeldahl analyzer. The entire system is more energy efficient.
- 24-bit injection port, the cleaning position is separated from the test position, completely eliminating the possibility of cross-contamination during distillation
- Ultra-large capacity solvent tank, which can meet 500 experimental analysis in one fill, effectively improve laboratory efficiency



- Testing report can be customized and output by pdf or print.
- All sample weight weigh by balance can be output directly into K1160 for analysis(specified model).
- Color sensor can be adjust by RGB model, compliance with AOAC, ISO, EPA, USP etc.

### Benefits:

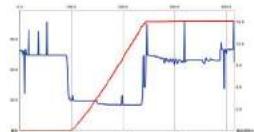
- New metal condensing unit, ultra high efficiency for condensing,saving up to 50% water.



- 24 position auto sampler with fully program processing, no manual guard, saving human resource cost.



- Distillation and titration in real time, variable speed titration technology, reducing experiment time up to 30%.



### Technical Data

#### K1160 Kjeldahl Protein Analyzer

Measuring range	0.1mg ~240mg N
Analysis time	3~8min/sample
Reproducibility	Average value relative error $\pm 0.5\%$
Recovery	$\geq 99.5\%$
Burette accuracy	1.0 $\mu$ L/step optional:0.2 $\mu$ L/step and 0.4 $\mu$ L/step
Sample capacity	solid $\leq 5$ g/sample, liquid $\leq 20$ mL/sample
Water consumption in the distillation process	0.5L/min
Data storage capacity	1 million groups
Power supply	220VAC $\pm 10\%$ , 50Hz
Power	2KW
Net weight	38Kg
Dimensions	460mm $\times$ 360mm $\times$ 725mm

#### K1124 Auto Sampler

Capacity	24 samples per batch
Rotor speed	$\geq 0.04$ r/s
Sampling speed	$\geq 40$ mm/s
Tank capacity	4x15L
Connection	CAN
Voltage	24V DC
Rated Power	40W
Dimension (L $\times$ W $\times$ H)	920mm $\times$ 625mm $\times$ 908mm
Weight	80Kg



## MP420/MP430 Melting Point Apparatus

## MP450/MP470/MP490 Auto Melting Point Apparatus

MP420/MP430 Video Melting Point Apparatus, and MP450/MP470/MP490 Automatic Video Melting Point Apparatus, perfectly integrate video technology into melting point measuring. It not only provides users with reliable melting point test result, but also intuitively displays temperature curve and real-time video image, and achieves the function of save, replay the video, stamp video and so on. It also provides better help for users to observe melting process of sample.

### Features

#### Visual and Automatic Determination

It includes a color display to observe the phase transition, is equipped with a video camera and a video replay function which allows reviewing the melting point determination. It also suit for color samples, which tradition automatic melting point apparatus not available.



#### Available Testing 4 Samples Concurrently

Max concurrent sessions 4 samples each batch, record and track each result independently, meet FDA 21CFR part 11 requirements.

#### Multi-user ID Classify Function

Adopt User ID management function. Users ID are available for adding, deleting and jurisdiction setting.



#### All Screen Design

Adopt a 8 inch capacitive touch screen, with the brilliant Android system, let the operating easier.

#### Amazing Data Processing & Exporting

The methods, atlas and detailed result are available for storage. Connecting printer or all data export are both available.

Compliant with GLP, GMP(EU,UPS&CN) and FDA 21CFR part 11

#### Technical data

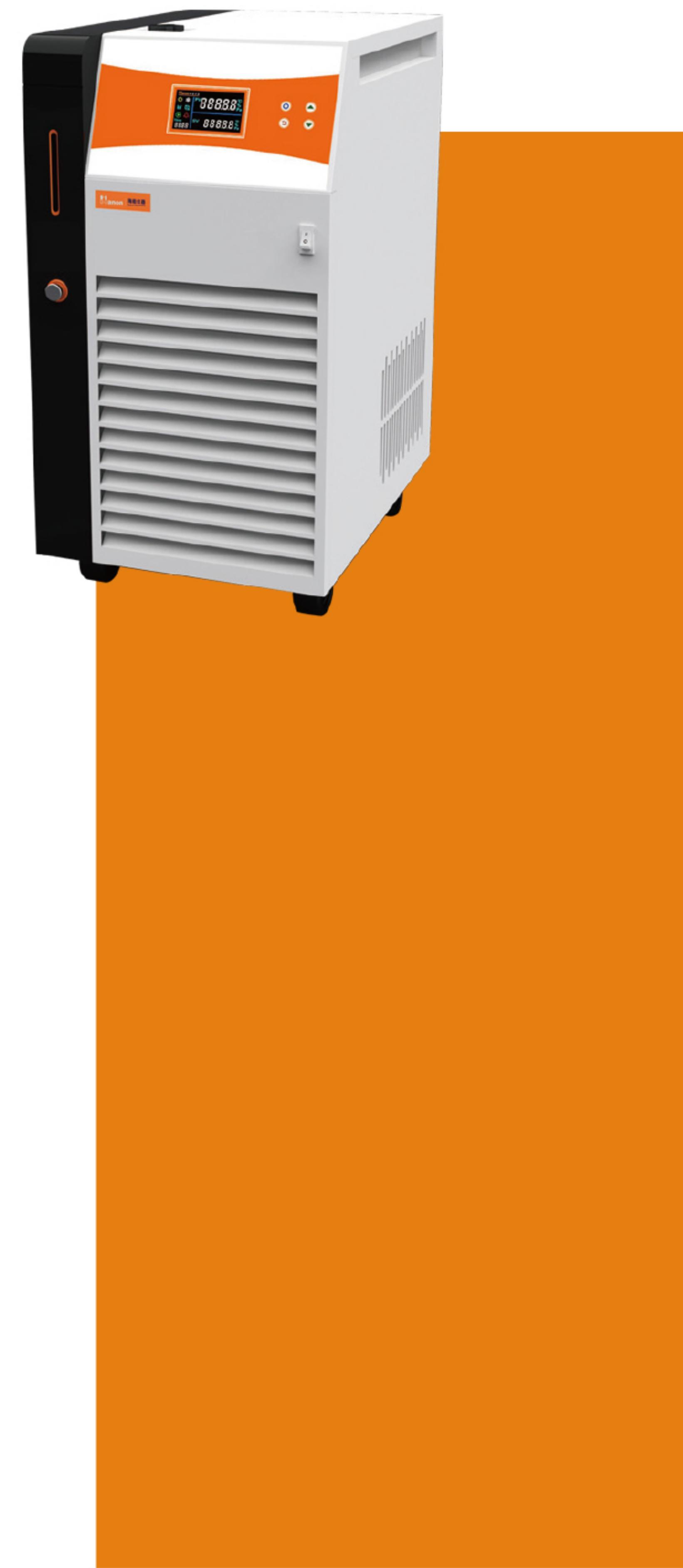
	MP420	MP430	MP450	MP470	MP490
Position Capacity	4				
Magnification of lens	8				
Display	8 inch capacitive touch screen				
Temp Range	300 °C	350 °C	350 °C	400 °C	400 °C
Temperature resolution	0.1 °C				
Temp Accuracy	±0.4 °C (<200 °C) ±0.7 °C (<300 °C)				
Temp Gradients	Step-less setting at 0.1 °C--20 °C				
ID classify	No	20	20	30	100
Camera&Video	Camera	Camera&Video			
Video Replay	Manual	Manual	Automatic	Automatic	Automatic
Model	No	Yes			
Graphic	0	0	100	200	500
Methods Storage Capacity	0	30	30	80	200
Rom Capacity	8GB	16GB	16GB	32GB	128GB
FDA CFR21 part 11	No	Yes	No	Yes	Yes
Communication Ports	USB×3,RS232, Wi-Fi, RJ45				

# Recirculating Chiller

## FC1200

### Corollary Equipment

Kjeldahl Apparatus, Soxhlet Extractor, Crude Fiber Analyzer, AAS, ICP-MS, Electrophoresis System, Rheometer, Automatic Synthesizer, Fermentation Apparatus, Rotary Evaporator, Extraction and Condensation Device, SPE Apparatus.



### Characteristics

- Cooling system adopt TECUMSEH compressor in order to ensure cooling efficiency, and reduce noise.
- PID temperature controlling technology is adopted. Cooling method is not the traditional stat-stop type, EEV technology improve the stability.
- Over-temperature protection and auto-alarm function is used in refrigeration control system to avoid damage temperature medium caused by abnormal liquid temperature value.
- Water level observation window and automatic water level detection device, automatic alarm when low liquid level.
- Water current detection device is adopted. When external cycle closed or blocked, internal cycle will be switched automatically.
- High performance circulating water pump guarantee the long time continuous running, and good sealing avoid leakage. The pressure of pump is 0-1.5 bar, adjustment is available by rotary knob. Pressure value is displayed.
- Color LCD screen display more running data and dynamic identifier. Easy to monitor.

### Technical data

Temperature control range	5 °C ~ 40 °C
Temperature control	HOT gas by-gas and PID combined
Temperature stability	±0.3 °C
Temperature sensor	PT100
Display resolution	0.1 °C
Pump flow rate	20L/min
Cooling capacity	1.2Kw
Refrigerant	R134a
Pump Pressure	0-1.5 bar,adjustable
Pumping head	15m
volume	8L
Dimensions L x W x H (cm)	55 x 40 x 65
Power supply	220VAC±10% 50Hz



## SPE100/200/400

### Automatic Solid Phase Extraction

Shanghai Sineo SPE100/200/400 automatic solid phase extraction series adopts highly integrated pipeline design, with multi-function sample needle, relying on precise and flexible mechanical arm to improve sample preparation efficiency and bring you convenient and easy working experience , Let your work be faster.



#### Characteristics

- The injection needle and the extraction column are sealed by a universal plug sealing structure and equipped with H-axis pressing block to ensure good sealing.
- The suspension structure is adopted in the test tube bracket, which ensures the positioning accuracy of the manipulator to the greatest extent.
- The instrument standard router can be connected by WiFi or network line, which fully realizes the whole process of automation and unattended.
- Using modular design, only one communication line and pipeline can work between modules, and it is convenient to replace and maintain.
- Add emergency stop button, when the instrument is abnormal, manual operation can be emergency stop, to maximize user safety.
- Handwheel adjusting origin greatly saves the time of adjusting origin.

#### Main features

**Number of channels and control mode:** The instrument host adopts modular design, supports the number of channels upgraded in the field, and supports 1/2/4/6/8 multiple channel combinations;

**Continuous processing capacity:** Maximum continuous processing capacity of 52-bit samples;

**Robot arm:** X/Y/Z three-dimensional manipulator design, X/Y axis linkage, improve operational efficiency; H axis is added to move the slider, giving consideration to flexible movement and accurate positioning;

**Sample pump:** Sampling accuracy, solvent corrosion resistance, high pressure resistance(maximum withstand voltage 1Mpa), and compatible with size and volume sampling;

**Sample needle:** 316L stainless steel, solvent resistant; unique side-bottom opening to ensure full sample loading; highly integrated function for liquid channels, gas channels, and for extraction column seals;

**Remote connection and control:** The instrument is equipped with a router that can be connected via Wi-Fi or network cable, which fully realizes the whole process of automation and unattended operation;

**Puncture sampling:** Sample needle can be selected to realize puncture sampling and avoid sample volatilization loss;

**Sample volume and receiving volume:** The whole series supports 10 - 20mL sample tube, and can support 50mL and larger specifications within two channels; the receiving volume is standard 10mL/15mL, and the two channels can be expanded by 50mL;

**Pressure sensing:** Each channel is equipped with a standard pressure sensor, push column pressure to achieve closed-loop fuzzy control, and has the functions of overpressure alarm and termination of the experiment;

**Velocity control:** The top of each extraction column is equipped with an independent sealing cap. The high pressure sealing is realized by docking with the sample needle and moving Z-axis pressure block. The solution passes through the extraction column according to the set flow rate to ensure good reproducibility and parallelism;

**Solvent management system:** Supporting 8 reagents; Supporting the hint function of insufficient residual capacity; Supporting liquid level following function;

**Infiltration and incubation:** When the active solvent or eluting solvent is loaded into the extraction column, the liquid level can be kept above the packing for a certain time to ensure full activation or elution and to ensure the ideal experimental results;

**Cleaning mode:** Supporting various cleaning modes to ensure that the inner and outer walls of sample needles are clean without cross-contamination;

**Waste discharge passage:** Support environmental protection to recover waste liquor and separate treatment of waste liquor with different properties;

**Specification of extraction column:** Compatible with conventional 1/3/6mL extraction column, other specifications of extraction column can be customized according to requirements;

**Multi-scheme extraction:** Supporting the simultaneous operation of different specifications of extraction columns and different treatment projects without waiting, improving the efficiency of continuous treatment;

**A/B column extraction:** Support multi-mode tandem column extraction, automatic identification of A/B column extraction scheme;

**Online drying/dewatering:** Supporting on-line nitrogen purge mode;

**Online Concentration:** Supporting in-situ nitrogen purge and concentration, the concentration time can be edited;

**Large volume injection:** Supports the continuous and smooth loading of more than 500 mL samples without interruption, particle wear resistance, corrosion resistance, no need for any consumables and regular maintenance; supports the continuous switching of samples, the number of samples larger than 48 bits;

**Cloud services:** Supporting upload and download programs and parameters; Supporting online technical support and exchange; Supporting remote monitoring;

**Booking starts:** After editing the experimental scheme, the start-up time can be self-booked according to the time of the analyzer;

**Count down:** After the beginning of the experiment, the countdown time is used to facilitate the control of the end time of the experiment and to match the time of the analyzer in advance;

**Intelligent self-check and alarm:** After the parameter setting is completed, the software self-checks whether there are logic errors, promptly reminds the modification; Intelligent fault alarm system, according to the fault level, chooses to continue or stop.

## Technical index

	SPE100	SPE200	SPE400	SPEX00 (Customization)
Channels	1	2	4	X
Channel Independent Control	Support			
Sample pump	Precision Continuous Sample Pump			
Pump flow rate	0.1-120mL/min			
Types of solvents	8Seed, 500 mL Solvent Bottle			
Sample volume	0.1mL-20L			
Sample tube volume	10 - 20 mL,customization			
Receiving volume	10mL/15mL, other specifications customized			
Puncture sampling	Supporting			
Loading mode	X/Y/Z Three-Dimensional Manipulator			
Accuracy of manipulator	0.01mm			
Sealing technology	Docking Technology of Independent Seal Cover and Pan-plug Seal			
Extraction mode	Positive pressure extraction			
column pressure	≤80psi			
Pressure sensing	Support, Overvoltage Alarm, Threshold Editable (5-145psi)			
Column drying method	Nitrogen purge			
Waste collection	Branch collection, 3 channels			
A/B in series	Support, A/B Pillar			
Cleaning mode	Nitrogen purge, solvent cleaning, blowing stirring cleaning and other modes are used to clean the inner and outer walls of sample needles.			
Liquid level following	Support			
Solvent Residual Capacity	Solvent deficiency hints			
Host Size (H*W*D)	680mm x 580mm x 670mm			
Voltage	220/110V, 50/60Hz			
working temperature	5-40Temperature			
Working humidity	0-90% without condensation			
power	60W	80W	120W	<200W



## A670 / A630

### Auto Digital Refractometer

Hanon A670/A630 Automatic Refractometer adopts high-performance CCD light-sensitive part, it can automatically measure the refractive index(nD) of transparent, translucent, dark, viscous and other types liquid sample, also can measure sugar degree(Brix) of sugar solution. It's accurate, reliable, fast, easy operation. Full compliance with FDA 21CFR part.11. A670 innovative use of cloud service systems, all the data from instrument can update to cloud server, especially for group company or government customer, automatic refractometer has a wide range of use, within the field of factories, university and related scientific research institute, petroleum, oil, pharmaceutical, paints, food, daily chemical, sugar and geological prospecting industries.



#### Characteristics

- Completely meet the requirements of user ID classification & tracking, E-signature, and Data tamper-proof, which listed in FDA 21CFR part.11.
- High measuring resolution up to 0.00001(nD)/0.01%(Brix) (A670 only).
- Peltier accurate temperature control system is built-in, accuracy up to 0.02°C.
- Measuring prism is made of high hardness sapphire glass, of excellent properties against corrosion and scratches, free for clean and durable.
- High-resolution CCD detector offers automatic measurement, avoiding personal errors, having higher accuracy; transparent, translucent liquids or ropiness liquids samples are all available.
- High brightness LED light source with service life more than 100000 hours.
- 7-inch colour touch screen with Android system and 4GB RAM let methods and data expanding excellent.
- 2 x USB, 1 x RS232, 1 x Ethernet, can be easily connected, printer and network to facilitate users to export data or backup.



#### Multiple Samples Suitability

Automatic Refractometer is widely used on kinds of industries, it is one of the most common instruments in the oil industry, pharmaceutical industry, paint industry, food industry, daily chemical industry, sugar industry, geological exploration or institutions.

#### Perfect Measuring Prism

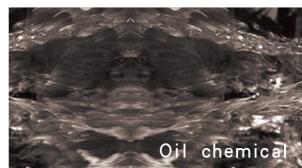
Measuring prism is made of high hardness sapphire glass, of excellent properties against corrosion and scratches, free for clean and durable.

#### High Performance CCD Sensor

High-resolution CCD detector offers automatic measurement, avoiding personal errors, having higher accuracy; transparent, translucent liquids or ropiness liquids samples are all available.

#### Ultra Long Life Light Source

LED cold light source with the long working life more than 100000 hours



#### Technical data

	A670	A630
Refractive index measuring range (nD)	1.30000-1.70000	1.3000-1.7000
Measured value error (nD)	±0.0001	±0.0002
Measurement resolution (nD)	0.00001	0.0001
Scope of sugar solution mass fraction (Brix)	0-100%	0-100%
Measured value error (Brix)	±0.1%	±0.1%
Measurement resolution (Brix)	0.1%/0.01%	0.1%
Temperature control mode	Peltier	Peltier
Scope of temperature measuring	0-100 °C	0-100 °C
Temperature control range	5-80 °C	10-50 °C
Temperature control accuracy	±0.02 °C	±0.1 °C
Interface	RS232/USB/SD card/U disk/Internet/wi-fi	RS232/USB/SD card/U disk/Internet
Data storage capacity	4GB	4GB
Display modes	7 inches, TFT touch screen	7 inches, TFT touch screen
Power supply(Power adapter)	110V~240V(12V,10A)	110V~240V(12V,10A)
Power	45W	45W
Net weight	12kg	12kg
Dimensions	365mmX300mmX150mm	365mmX300mmX150mm



## F800 Fiber Analyzer

Hanon F800 Fiber Analyzer is with advanced design, easy operation and flexible application. It can be used in conventional Weende method to analyze crude fiber and Van Soest analysis to wash the fiber. Applies to plant, feed, food and other agricultural products as well as the determination crude fiber, neutral detergent fiber (NDF), acid detergent fiber (ADF), hemicellulose and acid detergent lignin (ADL).



### Features and Advantages

- Hidden solution barrel pull structure designed to facilitate dosing operation, provide the safest fiber analysis.
- Corrosive liquid is not in contact with any pump body, to avoid waste discharge pump susceptible to corrosion phenomena.
- The crucible recoil function designed to prevent sample in the crucible can not caking filtration.
- With dosing overflow protection function, to prevent dosing corrosive liquid overflow due to operator error, protect the safety of the operator.
- Adjust the crucible heating power in time, enabling customers to control the heating rate easily and low down the energy consumption, ECO-friendly.
- Having a built-in pre-heating function, greatly reducing the whole experiment time.
- Provide five various specifications crucible specifications to meet the needs of different samples for standard configuration.
- Can detect crude fiber, neutral detergent fiber (NDF), acid detergent fiber (ADF), hemicellulose and acid detergent lignin (ADL).



#### Precise control experiment

Test time can be set free, clockwise and countdown timing functions are available, real-time reminder end of the experiment, the experimenter to facilitate precise control experiment, save test time, improve efficiency.

#### Integrated infrared heating technology

Advanced integrated infrared heating, more uniform heating of the crucible fast, more consistent sample extraction, higher extraction recovery, thereby improving the accuracy of test results.

Optional peripheral accessories: cool extractor. Experiments can go fat, washed with acetone extraction after detection of acid lignin and other steps.

#### Technical data

Measurement range	0.1% ~ 100%
Sample weight	0.5g ~ 3g
Repeatability error	Crude Fiber Content below 10%, ≤0.4% Crude Fiber Content above 10%, ≤1%
Capacity	6 pcs/batch
Pre-heating time	10-12min
Heating to boiling	13-15min
Display	7 inches touch color screen
Rated power	2.2KW
Power supply	220 VAC ±10% 50Hz
Dimension	776mm×476mm×644mm



## Recirculating Chiller FC1500



### Characteristics

- High-brightness, large color 5.5-inch LCD display.
- Molded water tank, uni-body with 316 stainless steel, anti-rust, anti-corrosion.
- Motor driven mold turbine quiet pump 10L/min, fully realized hydro-power separation.
- Compact structural layout with removable grille for easy maintenance and drainage.
- Using advanced fuzzy PID temperature control technology, it can accurately and quickly achieve stable temperature control effect.
- Compressor refrigeration, R134a environmentally friendly refrigerant, avoiding environmental pollution and harm to experimenters.
- Multiple protection design: over current protection, high and low temperature protection, over temperature protection, low liquid level sound and light alarm, prevent dry burning protection.

### Technical data

Model	FC1500
Temperature control range	5°C ~ 100°C
Temperature stability	±0.05°C
Display resolution	0.1°C
Temperature control method	Fuzzy PID
Temperature sensor	PT100
Heating power	2000W
Cooling power	1500W
Refrigerant	R134a
Pump flux	10L/min
Pump pressure	0.35bar
Volume	10L
Dimensions LxWxH(cm)	555mm×350mm×750mm
Power supply	220 VAC ±10% 50Hz
Working condition	10°C ~ 25°C
Weight	40kg



## Refrigerated and Heating Circulator

Hanon F Series Refrigerated and Heating Circulator can be widely used in oil, physical, chemical, pharmaceutical, environmental protection and other fields of science, precision temperature control equipment.

Application:Experiment that need heating and cooling,Fermentation Tank,Polarimeter,Refractometer,Spectrophotometer,Electrophoresis System,Chromatographic Column,Viscometer,Rotation Evaporation Instrument,Rheometer.



### Characteristics

- Convenience function: Parameters memory function, temperature correction.
- ECO-refrigerant R134a and high quality compressor guarantee the cooling system eco-friendly and powerful.
- Low Noise design: use high quality compressor and mute pump.
- Robust water tank: ultra-slushing and rust-proof.
- Bright LCD temperature display.
- Compact design, removable venting grid for convenient cleaning to maintain cooling performance and drain off water.

Note:●"with the same technical index

### Technical data

	FCL6-05	FCH6-05	FCL6-20	FCH6-20
Working temperature range	-5 °C ~ 100 °C	-5 °C ~ 200 °C	-20 °C ~ 100 °C	-20 °C ~ 200 °C
Temperature control	Fuzzy PID	●	●	●
Temperature stability	±0.03 °C	●	●	●
Temperature sensor	PT100	●	●	●
Display resolution	0.1 °C	●	●	●
Heater capacity	2000 W	●	●	●
Cooling capacity	250W	●	●	●
Refrigerant	R134a	●	●	●
Pump capacity Pressure	0.35 bar	●	●	●
Pump Flow rate	10L/min	●	●	●
Ambient temperature	-20 ~ 70 °C	●	●	●
Output	RS232/RS485(optional)	●	●	●
volume	6L	●	●	●
Bath opening L x W (cm)	16x 16	●	●	●
Bath dimensions L x W x H (cm)	32 x 18 x 15	●	●	●
Dimensions L x W x H (cm)	40 x 25 x 65	●	●	●
Power supply	220VAC±10% 50Hz	●	●	●
Weight (kg)	25	●	●	●

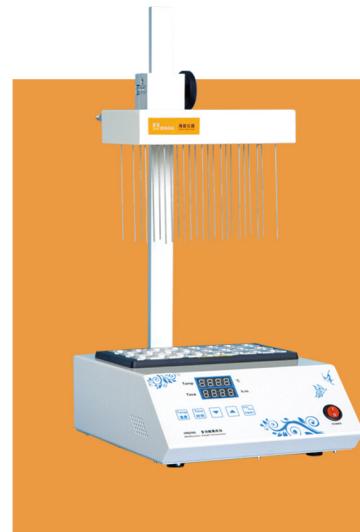


## HN200

### Sample Concentrator

Hanon HN200 Sample Concentrator is mainly used in the concentration of samples in batches, such as drug screening, hormone analysis, liquid/gas phase, as well as mass spectrum analysis.

The use of sample concentration instead of the commonly used rotary evaporimeter for concentration, can have simultaneous concentration of dozens of samples, which can shorten the sample preparation time greatly, and has the advantages of time-saving, easy operation and fast.



#### Characteristics

- Sample visualization.
- Module optional, with 5ml /12 hole, 5ml /24 hole, 20ml /12 hole, 20ml / 24 hole.
- Automatic fault detection and alarming.
- Built-in over-temperature protection device.
- Flow-meter pressure reducing valve is optional.

Each blowing needle can be controlled independently, the height of gas cavity is adjustable

#### Technical data

Temperature range	Room temperature +5°C~180°C
Heating time	≤30min (from 40°C to 180°C)
Temperature accuracy	±0.5°C(40-100°C) ±1°C(100~180°C)
Display accuracy	0.1
Display mode	LED display
Nitrogen flow	0-10L/min
Nitrogen pressure	≤0.1MPa
Dimensions	280mmX240mmX500mm



## i Series UV-VIS Spectrophotometer

### i2/i3/i5/i6/i7/i8/i9

#### i2 Visible Spectrophotometer



1. Standard scanning software can directly complete functions of Quantitative;Kinetics;Wavelength Scan; Multi Wavelength; DNA/Protein and Data processing.
2. Can establish calibration curves and implement associated tests. The instrument internal can be stored with 200 groups of data and 200 standard curves.
3. Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
4. Automatic wavelength calibration and automatic deviation repair.
5. Tungsten and Deuterium lamp can be changed easily, without adjustment.
6. Standard with PC software.

#### i3 UV-VIS Spectrophotometer



1. Standard quantitative software can directly complete photometric analysis, quantitative test and processing of analytical data.
2. Can establish calibration curves and implement associated tests. The instrument internal can be stored with 200 groups of data and 200 standard curves.
3. With calibration curve method, we can establish multiple-point standard curve directly, on basis of which we can measure the concentration of the unknown sample.
4. With coefficient method, we can implement sample measurement directly after inputting coefficient of the curvilinear equation.
5. Automatic wavelength calibration and automatic deviation repair.
6. Deuterium and tungsten lamp can be changed easily, without adjustment.
7. Standard with PC software

#### i5 UV-VIS Spectrophotometer



1. The main unit and PC software can independently implement functions of Quantitative;Kinetics;Wavelength Scan; Multi Wavelength; DNA/Protein and Data Printing,PC software can complete the function of data processing.
2. Strong function of data processing makes user editing can be easier and more convenient.
3. Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
4. Adopt synchronous sine institutions, high accuracy of the wavelength, repeatability.
5. Standard with PC software



## i6 UV-VIS Spectrophotometer



1. The Main unit and PC software can independently implement functions of Quantitative; Kinetics; Wavelength Scan; Multi Wavelength; DNA/Protein and Data Printing; PC software can complete the function of data processing.
2. Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
3. 24-bit high speed and high precision A/D conversion, and improve the sensitivity of the instrument.
4. The core components are imported from Germany and Japan.

## i7 UV-VIS Spectrophotometer



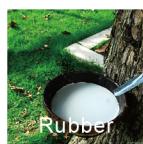
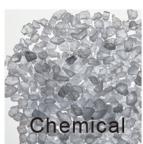
1. The Main unit and PC software can independently implement functions of Quantitative; Kinetics; Wavelength Scan; Multi Wavelength; DNA/Protein and Data Printing; PC software can complete the function of data processing.
2. Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
3. 24-bit high speed and high precision A/D conversion, and improve the sensitivity of the instrument.
4. The core components are imported from Germany and Japan.
5. 0.5/1/2/4nm bandwidth can be adjusted automatically.

## i8 Double-Beam UV-VIS Spectrophotometer



- 1.Double beam optical system.
- 2.The Main unit and PC software can independently implement functions of Quantitative;Kinetics;Wavelength Scan; Multi Wavelength; DNA/Protein and Data Printing,PC software can complete the function of data processing.
- 3.Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
- 4.24-bit high speed and high precision A/D conversion, and improve the sensitivity of the instrument.
- 5.The core components are imported from Germany and Japan.
- 6.The best optical system, based on top structure design, top technological requirements and top raw materials.
- 7.Standard with PC software

### Industries





## i9 Double-Beam UV-VIS Spectrophotometer



- 1.Double- beam optical system.
- 2.The Main unit and PC software can independently implement functions of Quantitative;Kinetics;Wavelength Scan; Multi Wavelength; DNA/Protein and Data Printing,PC software can complete the function of data processing.
- 3.Suspended posture optical system design, strengthen and thicken the bottom plate to eliminate the vibration or transformation's impact on the optical system.
- 4.24-bit high speed and high precision A/D conversion, and improve the sensitivity of the instrument.
5. 0.5/1.0/2.0/4.0/5.0 bandwidth can be adjusted automatically
6. The core components are imported with original packaging.
7. The best optical system, based on top structure design, top technological requirements and top raw materials.
8. Standard with PC software

Note:“—”without

### Technical data

	i2	i3	i5	i6	i7	i8	i9
Wavelength Range	320-1100nm	190-1100nm	190-1100nm	190-1100nm	190-1100nm	190-1100nm	190-1100nm
Bandwidth	2nm	2nm	1.8nm	1.8nm	0.5/1/2/4nm	1.8nm	0.5/1/2/4/5nm
Wavelength Accuracy	±0.5nm	±1nm	±0.5nm		±0.1nm (D2 656.1nm); ±0.3nm (Full range)		
Wavelength Reproducibility	≤0.2nm	≤0.3nm	≤0.2nm	≤0.1nm	≤0.1nm	≤0.1nm	≤0.1nm
Photometric Accuracy	±0.3%T	±0.5%T	±0.3%T	±0.2%T	±0.2%T	±0.2%T	±0.2%T
Photometric Repeatability	0.15% T	≤0.2%T	≤0.15%T	≤0.15%T	≤0.15%T	≤0.15%T	≤0.15%T
Straylight	≤0.05%T	≤0.05%T	≤0.05%T	≤0.03%T	≤0.03%T	≤0.03%T	≤0.03%T
Stability	±0.0001A/h(500nm)		±0.001A/h(at 500nm)			±0.0004A/h(at 500nm)	
Baseline Flatness	±0.001A/h	±0.0005A	±0.001A	±0.0015A	±0.0015A	±0.001A	±0.001A
Noise	±0.0005A/h	±0.001A	±0.0005A	±0.0005A	±0.0005A	±0.0005A	±0.0005A
Photometric Range			"0-200%T, -0.3--3A, 0-9999C			0-200%T, -4.0--4.0A, 0-9999C	
Wavelength setting mode	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic	Automatic
Scanning speed	—	—			High,Middle,Low,Optional		
Output				USB Port			
Printer port				Parallel Port			
Display				LCD(320*240)			
Light Source	Tungsten Lamp			Deuterium&Tungsten Halogen Lamp			
Detector				Silicon Photodiode			
Power				220V AC ±10%/50Hz or 110V AC / 60Hz			
Dimension	460x380x180mm	420x300x160mm	460x380x180mm	470x370x180mm	470x370x180mm	625x430x210mm	625x430x210mm
Weight	15Kg	13Kg	20Kg	20kg	20kg	28Kg	28Kg



## K1100F

### Automatic Kjeldahl Analyzer

Hanon K1100F Automatic Kjeldahl Analyzer is an automatic device integrating distillation and titration functions designed based on classic Kjeldahl nitrogen determination method. It's equipped with the latest core control system, powerful automation and high-quality components, can easily achieve automatic waste discharge and cleaning of digestion tubes and titration cups, control steam supply and real-time detection of condensation temperature. High-accuracy charging pump and titration system ensure test results accuracy, and multiple fluid level detection gives smooth test process.



#### Characteristics

- Automatic distillation, titration, calculation, printing, drain and cleaning function, safety and saving-time.
- Visible titration cup design gives operator real-time control of the whole test process.
- Steam flow is controllable, satisfying different test requirements.
- Regent barrel enjoys fluid absence warning function, ensuring smooth test going.
- High-precision charging pump and titration system ensure test results accuracy.
- Large LCD touch screen gives visual operation and abundant information, enabling user to have a good command of it.
- USB or RS485 interface is optional for PC connection.
- Distilled liquid temperature is detected real time. Emergency stop against temp anomaly.
- Double distillation model meets different experiments, to retard the speed of acid-base reaction.
- Digestion tube fast drain function is used to avoid operator touch distilled hot reagents, protecting operators.
- Printer is built in.

#### Complete microcomputer control

Automatic completion of distillation, titration, calculation, printing, waste discharge and multiple protections, i.e. failure self-detection, hints of condensed water shortage, displacement of safety door and digestion tube and so on.

#### Large LCD Touch Screen Panel

Large LCD touch screen gives visual operation and abundant information, enabling user to have a good command of it.



## K1100F

Complete compatible design  
Compatible with congeneric products perfectly

### Performance advantage

- Compatible with φ42mm digestion tube
- Titration while distillation, enhance the efficiency rapidly.
- User friendly design, color touch screen, easy for operating
- Faster ARM system, faster operating rate
- Digester model SH220F and SH420F is matching K1100F, with φ42 digestion tube



### Technical data

Measuring range	0.1mg ~ 240mg N
Analysis time	5 ~ 10min/sample
Reproducibility	Average value relative error $\leq\pm 0.5\%$
Recovery	$\geq 99.5\%$
Burette volume	1.0 $\mu$ L/step
Sample capacity	solid $\leq 5$ g/sample, liquid $\leq 20$ mL/sample
Water consumption in the distillation process	1.5L/min
Data storage capacity	1800 groups
Power supply	220VAC $\pm 10\%$ , 50Hz
Power	2Kw
Net weight	38Kg
Dimensions	455mm $\times$ 391mm $\times$ 730mm



## K9840

### Auto Kjeldahl Distiller

Hanon K9840 Auto Kjeldahl Distiller is designed to determine nitrogen content of samples based on Kjeldahl nitrogen determination method. Fully intelligent software is able to complete sample distillation within minutes, boasting automatic reagent quantification and filling, automatic test. The distillation and condensation automatic cleaning system further enhances measurement precision; explicit interface is easy for operation. It is widely used in food processing, feed production, tobacco, livestock, soil fertility, environmental monitoring, medicine, agriculture, scientific research, teaching, quality control and other fields for the test of nitrogen or protein content, can also be used for the test of ammonium, volatile fatty acid / alkali, and so on.



#### Characteristics

- Display: 4.3 inch color screen.
- Manual/Automatic mode changeover free.
- Automatic Alkali pipeline washing function.
- Automatic or manual filling mode is optional according to test need.
- Distillation time can be edited freely, and automatic alarming upon completion.
- Automatic cleaning of control system and distiller, ensuring high measurement accuracy.
- Intelligent design of nitrogen tube peripheral facilities including safety designs and displacement hint.
- Intelligent cooling water control system achieves cooling water control and test.
- Emergency stop operation is able to deal with unexpected accidents.
- Automatic fault detection and intelligent audible and visual alarm system are available.
- Calibration Function: Dilution water calibration, Alkali solution calibration, Boric acid solution calibration, washing flow calibration.
- Safety door, digestion tube and cooling water condition is displayed at real time when running.
- Testing model is built in, for detecting most functions condition.



## Features

- Automatic accurate distribute alkali and boric acid solution.
- Perfect safety protection system gives distiller and tubes measurement and protection against over temperature and over pressure.
- Calibration Function: Dilution water calibration, Alkali solution calibration, Boric acid solution calibration, Washing flow calibration.
- Safety door, Digestion tube and cooling water condition is displayed at real time when running.



## Technical data

Measuring range	0.1mg ~ 240mg N
Recovery	≥ 99.5%
Sample capacity	solid ≤ 6g/sample, liquid ≤ 16mL/sample
Distillation speed	3-6min/sample
Cooling water consumption	1.5L/min
Operating mode	Manual/automatic mode
Display modes	4.3" LCD screen
Power supply	220VAC±10%, 50Hz
Power	1.3KW
Net weight	30Kg
Dimensions	400mm×385mm×735mm



## K9860

### Automatic Kjeldahl Analyzer

K9860 Automatic Kjeldahl Analyzer is an automatic device integrating distillation and titration functions designed based on classic Kjeldahl nitrogen determination method. It's equipped with the latest core control system, powerful automatic degreee and high-quality components, can easily achieve automatic cleaning of digestion tubes and titration cups, control steam supply and have real-time detection of condensation temperature. High-accuracy charging pump and titration system ensure test results accuracy, and multiple fluid level detection gives smooth test process.



#### Characteristics

- Automatic cleaning ensure operator safety and save time.
- External titration cup design gives operator real-time control of the whole test process.
- High-precision charging pump and titration ensure test results accuracy.
- The temperature of distilled liquid is detected real time. If the temperature of distilled liquid is abnormal, to ensure the accuracy of experiment's result, instrument will stop working.



## Features

- High accuracy dosing and working: adopt 4 KNF pumps work for dosing, measurement liquid volume.
- Easy Maintenance: Pre-install functions of cleaning, include receiving cup cleaning, alkali pipeline cleaning, boric acid pipeline cleaning, acid washing, steam bottle evacuation. support customer make the routine maintenance easily.
- High titration accuracy, up to 2.0 $\mu$ L/step.
- Integrated printer on the instruments



## Technical data

Measuring range	0.1mg ~ 240mg N
Analysis time	5 ~ 10min/sample
Reproducibility	Average value relative error $\leq\pm0.5\%$
Recovery	$\geq99.5\%$
Burette volume	2.0 $\mu$ L/step
Sample capacity	solid $\leq5$ g/sample, liquid $\leq20$ mL/sample
Water consumption in the distillation process	1.5L/min
Data storage capacity	1000 groups
Power supply	220VAC $\pm10\%$ , 50Hz
Power	2Kw
Net weight	38Kg
Dimensions	455mm $\times$ 391mm $\times$ 730mm



## OS270

### Cooking Oil Tester

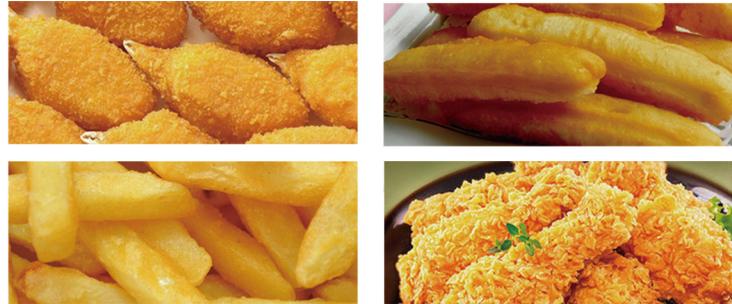
Cooking oil is the mainly energy and nutrition source, and the cooking material for daily life. Fried food is also favored as its unique taste. With physical and chemical reaction during the high-temp cooking process, toxical chemicals will be produced. Currently, the traditional testing method on cooking oil is mainly chemical method which is commonly used and conducted by professionals in the lab. But the laboratory process always produces pollution and unnecessary waste. The Total Polar Material (TPM) values is the only acceptable standard which used for cooking oil testing. OS270 is designed for cooking oil testing with safety and efficiency. It is able to test total polar material (TPM) values in minutes and suitable for all kinds of cooking oil within high operation temperature.

OS270 Cooking Oil Tester is especially suitable for quality supervision, refectory, fast-food restaurants, food manufacturers, bakeries and so on. It is also used for cooking oil quality's preliminary inspection in lab. This tester aims to achieve the application and inspecting on oil quality, save cooking oil, and ensure the safety of cooking oil.



#### Characteristics

- Easy operation, field testing, suitable for a variety of testing conditions. Fast measurement, getting result within 15 seconds with sound-light alarm.
- Adopting food-grade materials, safety and eco-friendly for probes.
- Waterproof design, class IP65.
- Using AAA battery, 500 times measurement.
- Adopting streamlined design, according to Ergonomics, easy handling and preventing it to fall apart.
- Special design for probe in order to reduce residual oil and easy for clean.



## Technical data

Temperature measure range	0~200.0 °C
Temperature resolution	± 0.1°C
Temperature accuracy	± 1.0°C
TPM measure range	0.5 ~40%
TPM accuracy	± 2% (40.0 ~190.0 °C)
TPM resolution	± 0.1%
Temperature sensor	PTC Sensor
TPM sensor	Capacitive sensor
TPM response time	<15S
LED status alert	Green, Orange , Red
Operating temperature	0 ~+50 °C
Storage temperature	-20 ~+70 °C
Display	LED
Frame material	ABS
Probe material	Food-grade stainless steel
Protection grade	IP 65
Battery life below 20 °C	About 25 hours of continuous use time (the corresponding measuring 500 times)
Weight (with the probe cases)	About 165g
Bluetooth	Yes
WiFi	Yes
Auto-Calibrate	Yes



## **Auto Digital Polarimeter**

### **P810/P850/P810 Pro/P850 Pro**

P Series Polarimeter with automatic photoelectric inspection technology, boasts accurate and reliable measurement, convenient operation. By detecting the optical rotation, the density, content and purity of substances can be analyzed and determined. It's widely used in pharmaceutical, petroleum, food, chemicals, flavors, spices, sugar marking and other industries, and universities and research institutes.

New upgraded models: P810 Pro/ P850 Pro adopt brilliant Android system and communication ports, let new models meet FDA CFR21 part 11.



#### **New P810 Pro/ P850 Pro New Characteristics**

- Adopt a 8 inch TFT touch screen, with the Android system, let the operating easier.
- Meet FDA 21CFR part11.
- User ID management function. Users ID are available for adding, deleting and jurisdiction setting.
- Timing measuring and graphic display function, displaying the samples optical rotation changing dynamic process.
- 8GB room for data storage.
- Classify and synchronous result searching function is convenience for user's result searching.
- 3 USB port for U-Disk, keyboard mouse connecting. And WiFi for connecting printer. Let operating much easier.





## Features

### Peltier Temperature Control

The Peltier system automatically controls the sample temperature in the max range from 10 °C to 50 °C.

### User Calibration System

Additional Standard polarization tubes with software for calibration by user.

### Large Color Touch Screen

Large color touch screen display and innovative software interface give extremely convenient device operation and data acquisition. P810/P850 adopt a 5.6inch touch screen, P810 Pro/ P850 Pro adopt 8inch touch screen.

### LED Light Source

High brightness LED lights with service life exceeding 100000 hours. To void the light source exchanging.

## Technical data

	P810	P850	P810 Pro	P850 Pro
Measuring range	±89.99°Arc; ±259°Z			
Measuring Model	Optical Rotation; Specific Rotation; Concentration; Sugar Degree			
Min.reading	0.001°(optical rotation)			
Accuracy	±0.01° (-45°≤ optical rotation ≤ +45°); ±0.02° ( optical rotation < - 45° or optical rotation > + 45°)			
Repeatability (standard deviation)	0.002°(optical rotation)			
Min. Transmittance	1%			
Light Source	LED			
Wavelength	589.3nm LED			
Temperature Control	No	Peltier	No	Peltier
Temperature Control Range		15°C ~30°C		10°C ~50°C
Temperature Control Accuracy		0.3°C		0.3°C
Communication Port	USB; RS232	USB; RS232	USB×3,RS232, Wi-Fi	USB×3,RS232, Wi-Fi
Data Storable	1000	1000	8GB	8GB
21CFR Part 11	No	No	Yes	Yes
Display	5.6inch	5.6inch	8inch	8inch
Sample Cell	Upto 200mm	Upto 200mm	Upto 200mm	Upto 200mm
Graphic	No	No	4hours	4hours
Power	220V AC (±10%) 50Hz	220V AC (±10%) 50Hz	220V AC (±10%) 50Hz	220V AC (±10%) 50Hz
Calibration System	Option	Option	Option	Option

## SH420F

### Kjeldahl Digestion System

Hanon SH420F Graphite Digester adopts globally advanced high-temperature infrared radiation heating technology and microprocessor control platform, accurate temperature control and quick temperature rise. It has two kinds of temperature rise mode: linear and curve temperature rise mode, and offers 20 digestion programs for control of temperature rise curves.

Neutralization system is including ternary filtration functions, condensation, neutralization and filtration. The product adopts high-quality anticorrosive Pumps, low noise, strong suction, reduce exhaust emissions, eco-friendly.



#### Characteristic

- 20 positions enhance working efficiency rapidly.
- Graphite block have longer life after special anti-oxidation processing and heating more uniform.
- Corrosion-resistant design.
- It adopts advanced PID temperature control technology, high accuracy heating up to 400°C only 25 minutes.
- Multi-protection, Over-current protection, high temperature warning, overload protection.
- It adopts 5.7" color screen, easy for use.
- Standard configuration with waste gas collection hood WD03.
- Temperature control model, program control, curve and linear temperature rise.

#### S402 Exhausting System

- Mould design, compact appearance.
- Absorption device area is translucence design, easy for inspection and changing.
- Suction pressure is adjustable when become negative, to avoid acid gas spilling or emptying.
- Anticorrosion vacuum pump, low noise, large suction, reduce wasted gas exhausting and environmental friendly.
- Ternary filtration system (water condensation, alkali neutralization and active carbon filtration) ensure perfect neutralization and absorption performance. PTFE anticorrosion pipe design, improve using life.



**S402**



## SH220F

### Kjeldahl Digestion System



**SH220F**

SH220F Graphite Digester includes globally advanced technology, features quick digestion, high efficiency and easy for use, etc., It's widely used in such fields as food, medicine, agriculture, forestry, environmental protection, chemical engineering, biochemistry, as well as universities, research departments and so on, for sample digestion prior to the chemical analysis of soil, feed, plants, seeds, minerals etc., suitable for matching K9840 analyzer.

Graphite block have longer life after special anti-oxidation processing.

It adopt advanced PID temperature control technology, high accuracy heating up to 400°C only cost 20minutes.

**WD03 Gas Collection Hood**

Using PFA sealed cap, longer life, dealing effect well.

Clip-on sealing cap, easy for changing.

Specialized water jet vacuum pump is adopted, don't need electric power.

Drip tray design, reduce corrosion damage from acid solutions.

#### Characteristic

- 20 positions, enhance working efficiency rapidly.
- Corrosion-resistant design.
- It adopt advanced insulation technology, eco-friendly, reduce energy intensity maximum limitedly.
- Multi-protection, Over-current protection, high temperature warning, overload protection.
- LCD display.
- It's used with microwave reaction system, pretreat for microwave digestion or removing acid after digestion.
- Linear and curve temperature rise mode, up to 5 stages temperature setting.
- Curve temperature rise and linear temperature rise two temperature control modes.

The SH220F has two temperature control modes: curve heating and linear temperature heating. It can edit and store 10 groups of digestion programs. Each group can set up a segment temperature and time gradient of up to 5 to meet different experimental needs of users.

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

#### Technical data

	SH420F	SH220F
Temperature range	Room temperature +5 - 450°C	●
Temperature accuracy	±1°C	●
Heating method	Infrared heating and high-purity graphite conduction	●
Heating insulation method	unique air duct insulation technology	●
Digestion tube capacity	300mL	●
Capacity per batch	20pcs/batch	●
Power supply	220 VAC±10% 50HZ	●
Power	3600W	●
Dimensions	515mmX458mmX730mm	515mmX421mmX211mm
Net weight	40Kg	25Kg

## **SOX406**

### **Semi-auto Fat Analyzer**

Hanon SOX406 Fat Analyzer is based on the Soxhlet extraction principle and integrates such functions as soaking, extraction, leaching, heating, condensation and solvent recovery. It features sealed metal bath heating with automatic temperature control, ensuring uniform heating and safe operation; six samples can be tested at the same time, and optimal temperature can be selected according to the difference between reagent boiling point and ambient temperature so as to achieve quick analysis; reagents can also be recycled to reduce test cost; and soaking, extraction and solvent recovery can be done in one step. Therefore, this device is characterized by reasonable design, stable performance, good reproducibility, high accuracy, easy operation, saving time and effort, and so on.

#### **Scope of application:**

SOX406 Fat Analyzer can quickly separate one substance from solid or semi-solid mixtures, can determine the soluble organic compounds contained in foods, feeds, medicines, soil, sludge, polymers, fiber products, petrochemical products, detergents, rubber, plastics and other materials.



#### **Characteristics**

- Integral metal heating, wide scope and high precision of temperature control.
- Electric circuit is isolated from the extraction space, ensuring device security.
- Timer and timing functions are available.
- Over-temperature alarming and timer reminding functions are available.



- Triple alarms i.e. sound, light, LCD screen word prompts are available.
- Abundant interface contents give simultaneous display of given temperature, actual temperature, given time and heating time.
- The lifting connection of linear bearing conduction technique gives smooth and comfortable lifting operation.
- Intelligent man-machine dialogue control system.
- Exclusive air insulation technique leaves the case in room temperature, has thermal insulation and temperature maintenance two functions.
- 4.3" LCD screen and microcomputer control system are adopted.

### Technical data

Temperature range	Room temperature+5°C ~ 280°C
Measuring range	0 ~ 100%
Temperature accuracy	±1°C
Sample weight	0.5 ~ 15g(generally 2 ~ 5g, depending on sample)
Capacity per batch	6pcs/batch
Solvent cup volume	80mL
Solvent recovery	≥80%
Shortened extraction time	20 ~ 80%
Power supply	220VAC±10%, 50Hz
Power	1KW
Dimensions	650mm×320mm×715mm
Net Weight	35Kg



## SOX606

### Auto Fat Analyzer

SOX606 Automatic Soxhlet Extractor, designed based on the Soxhlet extraction principle with weight method to determine the fat content. It has five extraction methods to meet different demands from customer. The whole metal heating module, heating up fast, good effect, low power consumption; access to all-round water temperature, flow control, environmental protection more economical; built-in ether leak detection device to ensure experimental safety. It is widely used in agricultural, food, chemical, environment and other areas, especially for the drug, soil, sludge, cleaner and other substances in the extraction of soluble organic compounds.

#### Features & Advantages

- Apply to all organic solvents to satisfy all demands.
- Automatic Soxhlet standard method, it customized by glass and PTFE, which can block all impurities and possess high rate of accuracy.
- One click manipulation for start and pause, that makes operation with high proficiency.
- Analyzer allows its controller to adsorb on any surface that made by iron.
- Vertical screen, more humanization.
- In-built 5 methods of extraction, handy operation.
- Preset common reagent options, one-click manipulation for repeated trials.
- The overall heating module, that possesses features of warming faster, favorable effect and low power consumption.
- Full temperature and flow control for environmental and economy.
- In-built ether leak detection device to ensure experiment safety.
- Efficient solvents recovering system for reduce experimentation cost.





#### Automatic extraction

One touch to start extraction, lifting, pre-heating, extraction, dilution, solvent recovery automatically.

#### In-built 5 unique methods of extraction, handy operation.

Include Soxhlet Extraction, Soxhlet Hot Extraction, Continue Flow Extractioin, Hot Extraction, CH Standard methods.

#### Apply to all organic solvents

Customized by glass and PTFE, which can block all impurities and possess high rate of accuracy, apply to all organic solvents, satisfying the requirements of users.

#### ECO- friendly and conservation

Full temperature and flow control for reduce consumption of condensed water.

### Technical data

Temperature range	Room temperature +5°C ~ 300°C
Measuring range	0.1 ~ 100%
Temperature accuracy	±1°C
Reproducibility	Relative error 1%
Sample weight	0.5 ~ 15g
Capacity per batch	6pcs/batch
Solvent cup volume	150mL
Solvent recovery	≥85%
Controller	External via cable
Power supply	220VAC±10%, 50Hz
Display	7 inches color touch screen
Power	2.6kW
Dimensions	650mm×380mm×720mm
Net Weight	50Kg



## T860

### Auto Titrator

Hanon T860 Automatic Titrator is a lab titration device with high analysis accuracy under the principle of potentiometric titration. It with modular design and consist of three parts: volume titration device, control device and measuring device. The titration methods include macro titration, micro titration, volume setting titration, EP, etc.

#### Characteristics

- Zero-dead volume solenoid valve, changing easily for PTFE burette.
- Ultrathin stirring device, adopt coil realize magnetic Stir.
- Accuracy closed-loop control for volume.
- High-accuracy burette accurate to 0.005mm.
- Simple design, discrete stirring unit, detachable easily.
- LCD touch screen.
- Wide operating voltage range 110~240V, apply to global client.



#### Specification

Measurement mode	MEAS	pH/mV
	CAL	pH calibration
	SET	End point setting
	MET	monotonic titration
Burette	Volume	15mL/25mL
Stirring	Mode	magnetic
	Titration cup volume	100mL
Electrode	mv/pH	1 x BNC
	Reference	1
	PT1000	1 x NTC
Communication	USB	1
	Stirrer	1
	Power	1
	Printer	1

#### Technical

mV/pH	Measurement range	±1,999 mV 0.00~14.00 pH
	Resolution:	0.1 mV / 0.01 pH
	Error	0.2 mV / 0.02pH
PT1000	Measurement range	0-100 °C
	Resolution:	0.1 °C
	Error	0.2 °C
Burette	15 mL tolerance	±0.025mL
	25 mL tolerance	±0.035mL
	Dosing Repeatability	0.20%
	mV Repeatability	≤0.2mV
Controller	Display	7" inch touch screen
Information	Weight	10 Kg
	Power	110-240V,50/60 Hz



## **T960**

### **Auto Titrator**

Hanon T960 Automatic Titrator meet the demand of mult complex liquid inlet automatically. There is no need to add solution manually. With the most secure built-in burette, to avoid contact with harmful chemicals which protect user security; Cloud services , connect via the Ethernet port ,to achieve the sharing between the instrument and Hanon huge database.Lead the laboratory instruments to Cloud generation.

#### **Characteristics**

- Multi-Channel modular combination, combine up to 4 dosing units & 6 channels work at same time.
- 3 standard burettes (5ml/10ml/25ml) available for options according to different application.
- Unique built-in dosing unit to avoid the harmless chemical leak.
- Multiple self-checking function to avoid mis-operating.
- Flexible application edit functions, users can storage your own titration mode according to your testing and use the storage mode next time with one click.
- RS232/USB port,with networked CAN bus communication functions.
- Can work with external 16-samples auto-sampler, making the multitasking operation much easier.



#### Mixed synchronous inlet system

The world's leading Mixed synchronous inlet system with 4-channel sample inlet simultaneously, supports expand up to 6 channels. Totally automatic in add titrant, any combination of additives or auxiliary agents.

#### Built-in burette

The most secure built-in burette, burette built in the instrument and can be observed through the window during the test to avoid the harmless chemical leak. Burette volume is optional:5ml/15ml/25ml

#### Cloud Service

With ethernet interface, it can storage the database to the cloud server. Lead the laboratory instruments to Cloud generation.

#### Titration platform diversification

Flexible to work with independence titration stand or 16 auto-sampler, multi-tasking operating through 16 auto-sampler can be fully automated, the whole process without staff to monitor, improve the work much more efficiency.

Note: “●”with the same technical index; “○”optional

#### Technical data

	T960 BASIC	T960 PRO	T960 PLUS
MV measurement range	-2000.0MV ~ +2000.0MV	●	●
MV measurement	Resolution 0.1MV, Accuracy 0.1MV	●	●
pH measurement range	-20.000PH ~ +20.000PH	●	●
pH measurement	Resolution 0.001PH, Accuracy 0.003PH	●	●
Temperature measurement range	-5 ~ 120 °C	●	●
Temperature measurement accuracy	±0.1 °C	●	●
Communication mode	2*USB/RS232/Ethernet	●	●
Maximum quantity of extended titration module	2	4	6
Maximum quantity of charging module	2	4	4
Burette volume	5ml 10ml 25ml	●	●
Burette resolution	1/48,000	●	●
Time of the burette charging	16 seconds (100% charging speed)	●	●
PC control	●	●	●
Electrode connector type	mv/pH measurement electrode connector/reference electrode connector/PT1000 temperature electrode connector	●	●
Auto-Sampler	16 positions (Optional)	○	○