Harmony
SCIENTIFIC

HP

series

Laboratory water purification system

Born to Break Boundaries
Simply Unstoppable

HP series

Intelligent Ultrapure Water System

Breakthrough design to highlight the aesthetics of science and technology.

HP series, using the innovative intelligent human-computer interactive control system and 7-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure and DI ion- exchange cartridges with larger capacity, equipping with powerful HiDis water dispenser arm, can meet your critical and professional application requirements of lab pure water.

With pure water inlet[1], system output: up to 2 liters/minute. It can produce ultrapure water (18.2MΩ.cm). The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ASTM D1193-06, GB/T 11446.1-2013, GB/T 33087-2016, GB/T 6682-2008, CP, EP, USP, JP, CAP, CLSI, etc.

[1] The recommended inlet water conductivity should be less than 5μs/cm.

Application Area:

- HPLC、UPLC、LC-MS
- ICP-MS、ICP-AES、AAS、GC-MS
- MALDI-TOF-MS、IC、TOC analysis
- Electrochemical, spectrophotometric determination
- Preparation of microbial media and reagents
- Cell culture, PCR, IVF
- Protein purification, electrophoresis, biochemistry
- Proteomics, genomics, immunoassay

Innovative Control System
Bringing Efficiency & Intelligence

All new intelligent human-computer interactive control system

- 7 inch colorful capacitive touch screen, with glass panel, achieve touch operation experience the same as mobile phone.
- LINUX system, resolution:1024×600, free switching in dual language (Chinese-English) display and 3 kinds of theme interface.
- Simple and intuitive UI interface design displays the newly defined cartridge, storage and water quality status. So that you can fully understand the system operating status and parameters. A glance for all important information.

Traceable comprehensive data management

- Store operating data records up to 5 years, including water dispensing, alarm and cartridge replacement, achieve data storage and paperless data management of the whole product life cycle by the cloud platform, meeting data tracking needs.
- With function of data exporting from USB port and data downloading from cloud platform.
- Data report documents in PDF format can prevent tampering, meeting traceability provisions of data integrity.
- Function of water dispensing report, including each water quality, water volume and user information, meet the regulatory requirements, easier to certificate.

Perfect consumables management

- Function of consumable life management (UP/UV/UF/TF[1]) combined with water quality, time and capacity, to reduce consumable costs.
- The remaining life of cartridges will display on the main interface with the form of dynamic icon percentage. Function of cartridge life reminder, step by step with 3 kinds of color, blue (normal), yellow (warning), red (alarm), all cartridges status is clearly visible.
- Click the cartridge icon to view the cartridge status, purification technology and cartridge function, and can realize the function of scanning code to buy the cartridge.
- Serial number verification function of original cartridges, encrypted long serial number verification code, to prevent misoperation of cartridges installation and replacement.

[1] According to different model ,cartridges are different. For details, refer to the product manual.

Innovative Internet of Things (IOT) and cloud platform technology

- Access the internet by Ethernet and WIFI, achieve remote data acquisition, monitoring and management.
- Log into the cloud platform from PC, WAP or WeChat to get the device information.
- Timely alarm information to achieve fast customer service response.
- Health analysis based on big data makes fault judgment more accurate.
- Work order system can provide customers with efficient service guarantee.
- It can be connected to LIMS or BMS to realize equipment informatization and make laboratory information management more efficient and standardized.

Comprehensive water quality monitoring and alarm

- 2 water quality sensors, to monitor water quality and alarm (Feed water and UP water), electrode constant-0.01cm^{-1}, temperature sensitivity-0.1 ℃ , and the conductivity/resistivity after temperature compensation and water temperature can be displayed simultaneously.
- 2 flow sensors, including UP water quantitative dispensing and feed water accumulation function.
- Built-in TOC detection module, real-timely monitor TOC of ultrapure water, detection range: 0.5-999.9ppb, detection accuracy:±0.1ppb, in line with USP and EP system adaptability test[1].

[1] Applicable to ultrapure water systems equipped with UV module.

Flexible and diverse water dispensing mode[1]

- The host is equipped with 1 standard ultrapure water outlet.
- 4 kinds of pure water dispensing buttons on the touch screen, including 3 quick quantitative water dispensing buttons, to achieve one key rapid quantitative water dispensing with 0.25/0.5/1.0L multiples, and 1 quantitative water dispensing button with general and quantitative - 2 kinds of water dispensing mode, to bringing all new dispensing experience.
- Dispenser arm[2] provides the 2nd pure water outlet with general, quantitative and instant - 3 kinds of water dispensing mode. More flexible to dispense.

[1] Up to 5 water dispenser arms can be equipped every host.

Sharing mode of multi-user management

- The main user can add multiple secondary users. Each user has an independent ID and password.
- The lock screen key can achieve the rapid locking and user switching of the device, allowing multiple departments and projects to share the device.
- Function of water dispensing record report, easy to view and export the water dispensing record of each ID, achieve the allocation of cartridges and maintenance costs according to the user ID.

Full security protection

- With DC24V as the main power supply, fully use weak current components, to meet the safety standards.
- 3 level permission management, administrator and ordinary users have strict permission distinction.
- Integrated double water leakage protection and alarm device, to monitor water leakage inside the machine and on the desktop.
- With alarm protection of No feed water and system high pressure.
- With alarm function of standard-exceeding of feed water and UP water quality, and end of cartridge life.
- All alarm information can be stored in the host and cloud platform, to meet data security requirements.
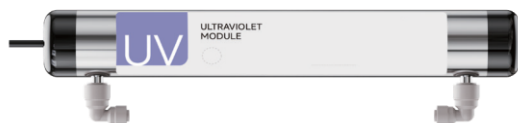
Powerful system overview diagram

- Dynamically display process flow, cartridges configuration, water quality parameters, cartridges life etc.
- Button of UF flushing[1] and system disinfection function can start the forced cleaning of UF membrane and the system disinfection with chemical dosing, and remaining time of 2 procedures above is real-time display. The flushing function significantly prolongs the service life of UF membrane, and the disinfection function effectively sterilizes the pure water pipeline system.
- Ultrapure water circulation system with adjustable interval running times, to keep the system in low levels of bacterial contamination and reduce energy consumption.

[1] Applicable to ultrapure water systems equipped with UF module.

Advanced System Configuration Guaranteeing Strong Quality

1 High performance purification cartridge

- Patented cartridge structure uses full droop flow mode to prevent the stratification of resin and ensure the exchange capacity of cartridge.
- The resin filling capacity per cartridge is up to 1.36 liters, and up to 2 cartridges can be equipped every host, with a total filling capacity of 2.72 liters, achieving greater ion exchange capacity and significantly reducing the running cost.
- All DuPont resin and high purity material of column ensure absolute 18.2MΩ.cm of ultrapure water resistivity and reduce TOC precipitation.
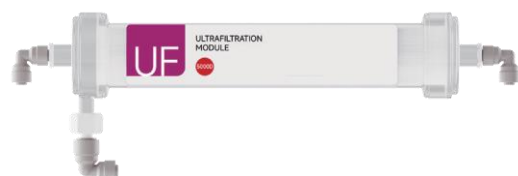
2 Double wavelength UV module [1]

- Long-life ultraviolet lamp (185&254nm), combined with SUS316L flow shell, can reduce the value of TOC to ≤ 2ppb[2], and can achieve efficient sterilization and inhibit bacterial growth, suitable for HPLC, UPLC, LC-MS and other precision instruments.

[1] Applicable to ultrapure water systems equipped with UV module.
[2] The values vary depending on the nature and concentration of contaminants in source water.

3 Ultrafiltration module[1]

- With PES membrane and MWCO>5000D, effectively removes pyrogen/endotoxin, RNase, DNase, and produces nuclease-free, proteinase-free and bacterial-free ultrapure water, suitable for life science applications, such as cell culture/IVF.

[1] Applicable to ultrapure water systems equipped with UF module.

4 MF terminal microfilter

- (0.45+0.2)μm double-layer PES membrane ensures microbial retention, effectively removes particles and bacteria, and meets critical application requirements.

5 UF terminal ultrafilter[1]

- With PES membrane and MWCO>15000D, effectively removes pyrogen/endotoxin, RNase, DNase, and produces nuclease-free, proteinase-free and bacterial-free ultrapure water, suitable for life science applications, such as cell culture/IVF.

[1] Optional accessory for ultrapure water system only.

6 Multiple communication interfaces

- USB interface, to export running data or upgrade system version online.
- RJ45, USB/WIFI interface, to achieve the IOT and cloud platform connection, easy access to LIMS or BMS.
- HiDis pure water dispensing arm interface, to achieve power supply and data communication with the host.
- L-Tank pure water tank interface, to synchronize water tank level signal with the host.
- FS foot switch interface, easy to dispense, suitable for more dispensing scenarios.
- LS leakage sensor interface, timely alarm external water leakage, strengthen equipment safety.

Combination Of Technology & Aesthetics
Creating highlights both inside and out

Innovative design of cartridge structure

- Patented 3-chamber design, compatible with packaging of PP/PC/RO/DI cartridge, to ensure consistency.
- Patented clamping mechanism, easier and more efficient to install and replace the cartridge.
- Patented error-proofing design, effective to avoid installation errors of different cartridges.
- 12-inch cylinder with 1.36L resin filling capacity brings more bigger ion exchange capacity and more effective filtration.
- Encrypted long serial number verification code can identify the authenticity of cartridges, record the use and replacement of cartridges, and ensure the safety of the system.

All injection molded housing

- New and advanced manufacturing process bring compelling customer experience.
- With geometric surfaces and simple lines, to show rich three-dimensional sense. With extraordinary imagination, to highlight the aesthetics of science and technology. Beautiful & Easy to use.

Professional PE pure water tank(Optional)

- Material: HDPE, double layer design. Anti-UV inhibitor is added to the outer layer to prevent the growth of algae inside and improve the durability of the tank. Pure PE raw material is used in inner layer to reduce material precipitation and ensure water quality safety.
- Drainage valve is installed at the cone bottom, which can empty the water tank and ensure thorough cleaning.
- Feeding from the bottom can reduce CO_2 absorption.
- The enlarged cover with seal can prevent air from entering and facilitate manual cleaning.
- Compound air filter is in the standard configuration, containing special packing and microporous membrane, to absorb CO_2 and organics, and filtrate bacteria and particles.
- UV disinfection module is optional to sterilize tank and inhibit the growth of bacteria in the tank.
- Equipped with an independent pressure sensor ,independent level control module and LCD display, it can display the liquid level, storage (L) and storage percentage (%) of the water tank in real-time in the form of dynamic icons. A clear glance for storage status.

Powerful HiDis water dispenser arm

- Color display, to monitor dispensing resistivity, water temperature, flow rate, single and cumulative water quantity.
- General, quantitative, instant - 3 water dispensing modes cycle, meeting with needs of different water dispensing mode.
- It can be fixed on the bracket in any direction of 360 degrees horizontally, making dispensing water more flexible in different directions.
- Function of circulating with the host can always ensure the quality of pure water.
- Equipped with 0.2μm MF terminal microfilter or UF terminal ultrafilter, to produce bacterial-free, nuclease-free, proteinase-free ultrapure water.
- Up to 5 sets of HiDis water dispenser arm can be connected to one host, fully covering the pure water usage range on the laboratory table.

ISO
3696
US Parmacopoeia
GB/T 33087 2016
Japan Parmacopoeia
ISO9001
CLSI GB/T.11446 1-2013
ASTM D 5196 ISO14001
China Parmacopoeia ASTM
GB/T 6682-2008 JIS K 0557
Eu Parmacopoeia D1193
CE Quality Standard

PRODUCT

- Under management system of ISO9001 and ISO14001, in accordance with CE quality standards, we carry out product design, research & development and manufacturing to ensure long-term stability and reliability of quality.
- To help you meet industry specifications, we can assist in providing certificates of conformity, calibration certificates, quality certificates, performance reports, water quality compliance certificates and other supporting documents upon request.
- HP Pursuit series - lab water system can produce pure water/ultrapure water to meet the requirements of the following organizations:
- Chinese Pharmacopoeia-CP, United States Pharmacopoeia-USP, European Pharmacopoeia-EP, Japanese Pharmacopoeia -JP, GB/T 33087-2016,GB/T 6682-2008,GB/T 11446.1-2013,ASTM D1193,ASTM D 5196,ISO 3696,CLSI,JIS K 0557.

SERVICE

We wholeheartedly serve, only for your full satisfaction.

With customer satisfaction as the service goal, to continue to create value for customers as the direction, to grow together with customers as the concept, based on professionalism, we are full of sincerity and enthusiasm, committing to providing customers with professional and perfect technical support and after-sales service. So that you can devote all your energy to focus on the work.

Our service include:

- 36 months product warranty (excluding filter consumables)
- On-site professional training of installation, use and maintenance.
- Regular engineer return visit service
- Free continuous optimization and upgrading service of product life cycle.
- Professional and rigorous 3Q(IQ/OQ/PQ) verification documentation and verification services in both English and Chinese, to help you meet compliance requirements of GLP, GMP and cGMP.

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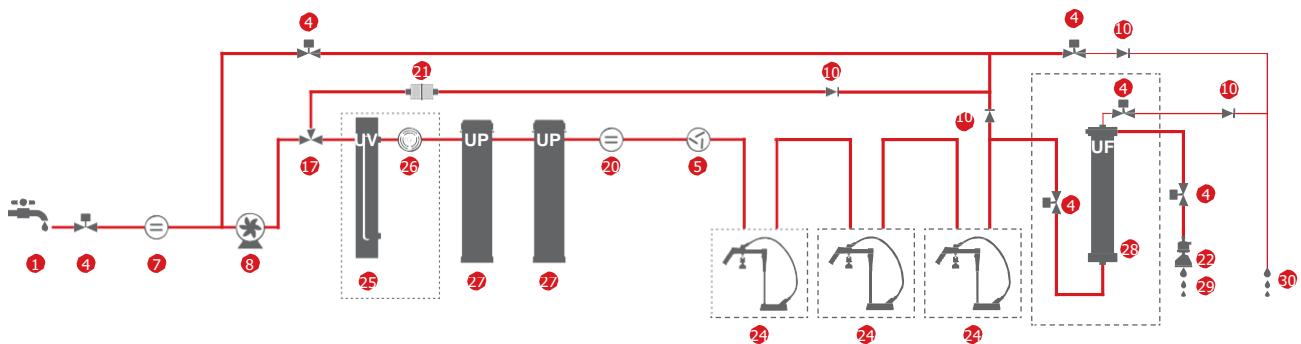## Intelligent Ultrapure Water System
—Ultrapure water

With pure water inlet, using the innovative intelligent human-computer interactive control system and 7-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure and DI ion-exchange cartridges with larger capacity, equipping with powerful HiDis water dispenser arm.

System output: up to 2 liters/minute. It can produce ultrapure water (18.2MΩ.cm). The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ASTM D1193-06, GB/T 11446.1-2013, GB/T 33087-2016, GB/T 6682-2008, CP, EP, USP, JP, CAP, CLSI, etc.

Flow Diagram

❶ Feed Water	❾ RO cartridge	⑰ Three way valve	㉕ UV Component
❷ PP Pretreatment Cartridge	⑩ One way valve	⑱ High tension switch	㉖ TOC Component
❸ Pressure sensor	⑪ Flow Restrictor	⑲ DI Cartridge	㉗ UP Ultrapure cartridge
❹ Solenoid valve	⑫ Pressure water tank	⑳ Resistivity Sensor	㉘ UF Cartridge
❺ Flow sensor	⑬ RO Water Outlet	㉑ Sanitization Block	㉙ UP Water Outlet
❻ PC Pretreatment Cartridge	⑭ Low tension switch	㉒ Final Filter	㉚ Drain Outlet
❼ Conductivity Sensor	⑮ EDI Component	㉓ DI Water Outlet	
❽ Pump	⑯ PE water tank	㉔ Dispenser arm	

HP Specifications

Name	Standard	Low TOC	Eliminating endotoxin	Synthesizing
Model	**HPU**	**HPU-UV**	**HPU-UF**	**HPU-UVF**
Production rate [1]	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute
Ultrapure water quality [3]				
Resistivity (25℃) [4]	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm
Conductivity (25℃)	0.055 µs/cm	0.055 µs/cm	0.055 µs/cm	0.055 µs/cm
TOC [5]	5 ppb[6]	2 ppb[7]	5 ppb[6]	2 ppb[7]
Particles [8]	<1 /ml（>0.2µm）	<1/ml（>0.2µm）	<1/ml（>0.2µm）	<1/ml（>0.2µm
）Bacteria [9]	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml
Endotoxin [10]	N/A	N/A	<0.001EU/ml	<0.001EU/ml
RNases [10]	N/A	N/A	1 pg/ml	1 pg/ml
DNases [10]	N/A	N/A	5 pg/ml	5 pg/ml
Protease [10]	N/A	N/A	0.15 µg/ml	0.15 µg/ml
Feed water requirements				
Water source type	Purified water treated by RO/DI/EDI or distillation technology			
Pressure	0-6 bar	0-6 bar	0-6 bar	0-6 bar
Temperature	5-40℃	5-40℃	5-40℃	5-40℃
Conductivity	<100µs/cm	<100µs/cm	<100µs/cm	<100µs/cm
TOC	<50 ppb	<50 ppb	<50 ppb	<50 ppb
Power supply	100-240V，50/60Hz	100-240V，50/60Hz	100-240V，50/60Hz	100-240V，50/60Hz
Total Power	72W	72W	72W	72W
Dimension (L×W×H)	Main host: 276×319×570mm Dispenser arm: 181×626×795mm	Main host: 276×319×570mm Dispenser arm: 181×626×795mm	Main host: 276×319×570mm Dispenser arm: 181×626×795mm	Main host: 276×319×570mm Dispenser arm: 181×626×795mm
weight	Main host: about 15KG Dispenser arm: about 4KG	Main host: about 15KG Dispenser arm: about 4KG	Main host: about 15KG Dispenser arm: about 4KG	Main host: about 15KGDispenser arm: about 4KG
Standard configuration	Main host 1 set All cartridges 1 set HiDis dispenser arm 1set	Main host 1 set All cartridges 1 set HiDis dispenser arm 1set	Main host 1 set All cartridges 1 set HiDis dispenser arm 1set	Main host 1 set All cartridges 1 set HiDis dispenser arm 1set

[1] Affected by inlet water quality, pressure, temperature and status of RO membrane [2] Affected by the tank status and terminal filter
[3] The following values are typical and may vary depending on the nature and concentration of feed water contaminants
[4] According to USP requirements, the resistivity can be displayed as a non-temperature-compensated value
[5] Affected by the type of organics
[6] Inlet TOC<1000ppb, follow professional operating procedures and correct sampling conditions

[7] Inlet TOC<50ppb, follow professional operating procedures and correct sampling conditions
[8] Equip with terminal microfilter and follow professional operating procedures and correct sampling conditions
[9] Equip with terminal microfilter and follow professional operating procedures and correct sampling conditions
[10] Equip with terminal ultrafilter and follow professional operating procedures and correct sampling conditions

Ordering Information

	Item No	Product description
Host	HPU	Intelligent ultrapure water system, up to 2 liters/minute, Standard, Ultrapure water
	HPU-UV	Intelligent ultrapure water system, up to 2 liters/minute, Low TOC, Ultrapure water
	HPU-UF	Intelligent ultrapure water system, up to 2 liters/minute, Eliminating endotoxin, Ultrapure water
	HPU-UVF	Intelligent ultrapure water system, up to 2 liters/minute, Synthesizing, Ultrapure water

	Item No	Product description
Cartridge	HPC601	UP cartridge, standard
	HPC602	UP cartridge, Low TOC
	HPC703	185&254nm double wavelength UV lamp
	HPC709	UF ultrafiltration module
	HPC801	TF terminal microfilter
	HPC810	UF terminal ultrafilter

	Item No	Product description
Accessory	TANK1061	60-liter PE pure water tank, equipped with air filter and independent level control module with LCD display
	TANK1121	120-liter PE pure water tank, equipped with air filter and independent level control module with LCD display
	DISP2000	HiDis dispenser arm, equipped with 2M connection kit
	PWA7501	Foot switch
	PWA7502	External leak sensor
	PWA1302	Wall-mounted mounting bracket for P

	Item No	Product description
Service	HPS51001	1 year extended warranty service (except for consumables)
	HPS51003	3 year extended warranty service (except for consumables)
	HPS52001	Verification documents in English
	HPS53001	Basic verification service
	HPS59001*	1-year, one-price all-inclusive maintenance agreement, including regular consumables replacement, maintenance and calibration
	HPS59003*	3-year, one-price all-inclusive maintenance agreement, including regular consumables replacement, maintenance and calibration

*On the basis of mutual confirmation of pure water consumption and feed water quality

For more product details, please login: www.harmony-scientific.com or email to info@harmony-scientific.com

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