



**Harmony**  
SCIENTIFIC

# HL

series

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Laboratory water purification system

# Stronger strength Iterative Regeneration



# HL series

( HLU/HLD/HLUS/HLDS/HLUE/HLDE )

## Intelligent Integration

## Pure Water/High Pure Water/Ultrapure Water System

Breakthrough design to highlight the aesthetics of science and technology.

HL series, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system<sup>[1]</sup>, advanced EDI module<sup>[2]</sup> and DI ion-exchange cartridges with larger capacity, equipping with professional-grade pure water tank with 60-liter, can meet your critical and professional application requirements of lab pure water.

System output ranges from 10 to 60 liters/h. It can simultaneously produce ultrapure water (18.2MΩ.cm), high pure water (>17.5MΩ.cm) or pure water<sup>[3]</sup>. 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.

<sup>[1]</sup> The double RO system is only used for HLUS/HLDS/HLUE/HLDE series products.

<sup>[2]</sup> EDI module is only used for HLUE/HLDE series products.

<sup>[3]</sup> HLD series products can produce single RO water (ion rejection rate ≥ 98%). HLDS/HLDE series products can produce double RO water (<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
- Feed water of laboratory instruments, such as: autoclave, bottle washing machine, environmental test chamber, water bath, etc.

# InnovativeControlSystem

## Bringing Efficiency & Intelligence

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### All new intelligent human-computer interactive control system

- 5 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.

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### 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.

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### Perfect consumables management

- Function of consumable life management (PP/PC/RO/DI/EDI/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.

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

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### 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.

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### Comprehensive water quality monitoring and alarm

- 4 water quality sensors, to monitor water quality and alarm (Feed water, RO water, DI water and UP water<sup>[1]</sup>), electrode constant-0.01cm-1, temperature sensitivity-0.1°C, and the conductivity/resistivity after temperature compensation and water temperature can be displayed simultaneously.
- 4 flow sensors, including 3 channels (RO water, DI water and UP water<sup>[1]</sup>) quantitative dispensing and 1 channel of feed water accumulation function.
- With real-time display and alarm function of ion rejection rate of RO membrane.
- Equipped with feed water pressure sensor, real-timely monitor and display inlet pressure, convenient to timely understand the feed water condition.
- 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<sup>[2]</sup>.

<sup>[1]</sup> According to different model, grade and type of pure water are different. For details, refer to the product manual.

<sup>[2]</sup> Applicable to ultrapure water systems equipped with UV module.

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### Flexible and diverse water dispensing mode<sup>[1]</sup>

- One system with 3 water dispensing points, 3 kinds of pure water -RO water, DI water and UP water, to meet all lab water needs.
- The host is equipped with RO, DI or DI, UP<sup>[1]</sup> 2 standard pure water outlet, general and quantitative - 2 kinds of water dispensing mode, bringing all new dispensing experience.
- Professional-grade water tank provides the third pure water outlet, greatly improving water dispensing efficiency.
- Up to 5 water dispenser arms per host is optional, with general, quantitative and instant - 3 kinds of water dispensing mode. More flexible to dispense.

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



### 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.

### Intuitive tank storage status

- Use advanced pressure sensor to measure liquid level. The dynamic icon on the main interface can display the tank liquid level, storage capacity (L) and storage percentage (%) in real time. A glance for storage status.
- The storage status LCD display integrated on the water tank can synchronize with the host in real time, providing second display platform, which is more convenient and intuitive.

### Powerful system overview diagram

- Dynamically display process flow, cartridges configuration, water quality parameters, RO rejection rate, cartridges life and tank storage status, etc.
- Button of RO flushing, UF flushing<sup>[1]</sup> and system disinfection<sup>[2]</sup> function can start the forced cleaning of RO membrane, UF membrane and the system disinfection with chemical dosing, and remaining time of 3 procedures above is real-time display. The flushing function significantly prolongs the service life of the RO membrane and UF membrane, and the disinfection function effectively sterilizes the pure water pipeline system.
- Ultrapure water circulation system<sup>[2]</sup> with adjustable interval running times, to keep the system in low levels of bacterial contamination and reduce energy consumption.

### 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, low inlet water pressure, system high pressure and full tank.
- With alarm function of standard-exceeding of Feed/RO/DI/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.

<sup>[1]</sup> Applicable to ultrapure water systems equipped with UF module.

<sup>[2]</sup> Applicable to ultrapure water systems.

# Advanced System Configuration Guaranteeing Strong Quality



## 1 Powerful 12-inch pretreated cartridge

- PP cartridge with deep folding membrane, accuracy of  $5\mu\text{m}$ , to filter particles efficiently in source water.
- PC cartridge with high performance activated carbon fiber with catalyst, accuracy of  $5\mu\text{m}$ , to adsorb organics and residual chlorine efficiently and avoid carbon powder precipitation maximumly.
- The combination of folding filter & carbon fiber can bring greater cartridge processing capacity, extend the replacement cycle and reduce the running cost.



## 2 Rigorous double RO system<sup>[1]</sup>

- Double RO system can remove up to 99% soluble inorganic ions, 99% soluble organics, microorganisms and particles.
- Compared with single RO system, the double RO water quality can be stable  $< 5\mu\text{s/cm}$  (feed water conductivity  $< 1500\mu\text{s/cm}$ ), and the life of the ultrapure unit is longer.
- Equipped with DuPont RO membrane, to achieve combination of long life, stability and high ion rejection rate.
- Auto-flushing function of RO module with adjustable flushing interval and duration, to effectively prevent scale and prolong the life of the membrane.
- The automatic discharge function of unqualified RO water can ensure that the RO water quality is suitable to enter the back-end module.
- Integral package of discarded RO module<sup>[1]</sup>, easy to install and maintain.

<sup>[1]</sup> Applicable to HLUS/HLDS/HLUE/HLDE.



## 3 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 3 cartridges can be equipped every host<sup>[1]</sup>, with a total filling capacity of 4.08 liters, achieving greater ion exchange capacity and significantly reducing the running cost.
- All DuPont resin and high purity material of column ensure absolute  $18.2\text{M}\Omega\cdot\text{cm}$  of ultrapure water resistivity and reduce TOC precipitation.

<sup>[1]</sup> According to different model, cartridge configuration is different. For details, refer to the product manual.



#### 4 Professional mini EDI module<sup>[1]</sup>

- Without softener and chemical regeneration, pure water in grade II, with resistivity > 10MΩ.cm@25 °C (generally above 15MΩ.cm), and TOC<30ppb<sup>[2]</sup>, is available. It can prolong the life of back-end module and reduce the running cost.

<sup>[1]</sup> Applicable to HLUE/HLDE.

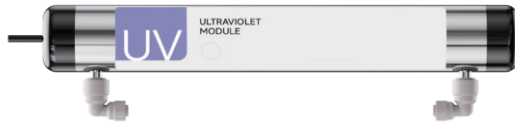
<sup>[2]</sup> The values vary depending on the nature and concentration of contaminants in source water.



#### 5 Built-in 1.8-liter pressure water tank<sup>[1]</sup>

- With dual functions of water storage and pressurization, FDA approved, its fully enclosed structure effectively isolates air, and prevent the touching of CO<sub>2</sub> and other pollutants with pure water. Up to 100 liters is optional volume.
- 60 or 120 liters pure water tank with liquid level sensor, equipped with air filter, is optional to achieve more professional pure water storage.

<sup>[1]</sup> Applicable to HLUE/HLDE.



#### 6 Double wavelength UV module<sup>[1]</sup>

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

<sup>[1]</sup> Applicable to ultrapure water systems equipped with UV module.

<sup>[2]</sup> The values vary depending on the nature and concentration of contaminants in source water.



#### 7 Ultrafiltration module<sup>[1]</sup>

- 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.

<sup>[1]</sup> Applicable to ultrapure water systems equipped with UF module.



#### 8 MF terminal microfilter<sup>[1]</sup>

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

<sup>[1]</sup> Applicable to ultrapure or high-pure water system. For details, refer to the product manual.



#### 9 UF terminal ultrafilter<sup>[1]</sup>

- 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.

<sup>[1]</sup> Optional accessory for ultrapure water system only.



#### 10 Multiple communication interfaces<sup>[1]</sup>

- 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.

<sup>[1]</sup> The interface configuration varies according to the model. For details, refer to the product manual.

# Combination Of Technology & Aesthetics

## Creating highlights both inside and out



### 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


- 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<sub>2</sub> 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<sub>2</sub> 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 (Optional)

- 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 0.2 $\mu$ m 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.

2021-03-08 11:35	
Dispensing Mode	18.2 <small>MQ.cm @25°C</small>
 General	3.2 ppb <b>25.2 °C</b>
	Flux <b>0000</b> ml/min
Amount	<b>500</b> ml



### 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.

# HLU series

## Intelligent Integration Ultrapure Water System

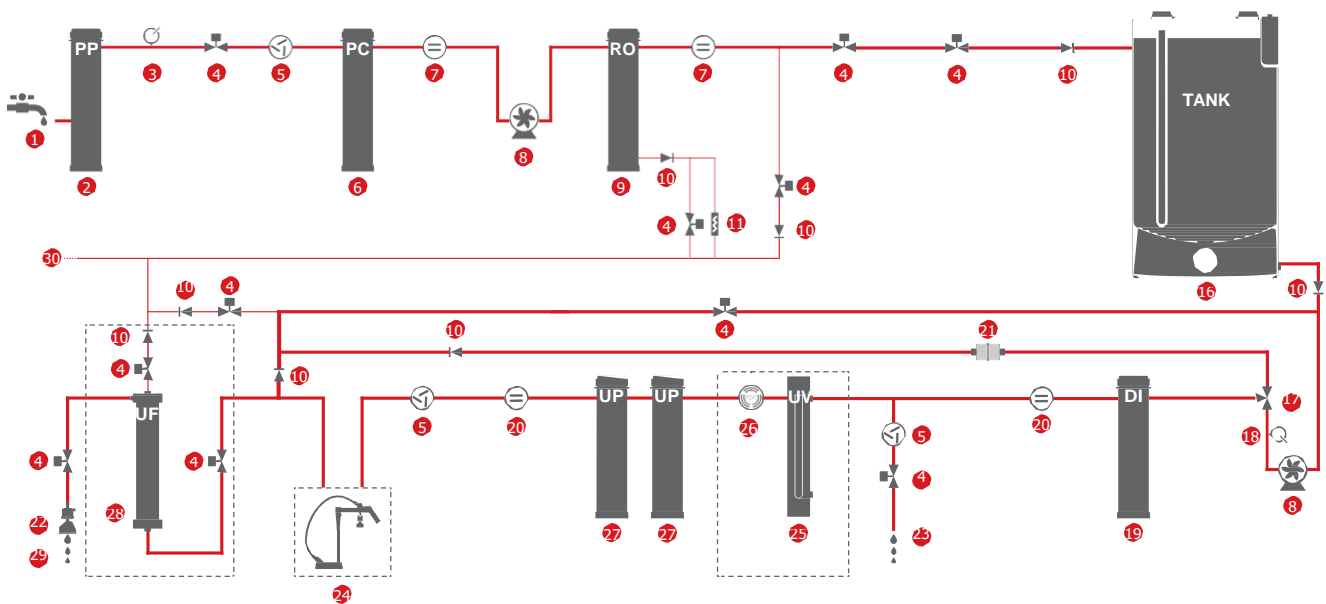
—Ultrapure water, high pure water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, stable and reliable single RO system, and DI ion-exchange cartridges with larger capacity, equipping with professional-grade pure water tank with 60-liter.

System output: 20, 40, 60 liters/h. It can simultaneously produce ultrapure water (18.2MΩ.cm) and high pure water (>16MΩ.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



- |                             |                       |                       |                          |
|-----------------------------|-----------------------|-----------------------|--------------------------|
| ① Feed Water                | ⑨ RO cartridge        | ⑬ Three way valve     | ⑲ UV Component           |
| ② PP Pretreatment Cartridge | ⑩ One way valve       | ⑭ High tension switch | ⑳ TOC Component          |
| ③ Pressure sensor           | ⑪ Flow Restrictor     | ⑮ DI Cartridge        | ㉑ UP Ultrapure cartridge |
| ④ Solenoid valve            | ⑫ Pressure water tank | ⑯ Resistivity Sensor  | ㉒ UFCartridge            |
| ⑤ Flow sensor               | ⑬ RO Water Outlet     | ㉑ Sanitization Block  | ㉓ UP Water Outlet        |
| ⑥ PC Pretreatment Cartridge | ⑭ Low tension switch  | ㉒ Final Filter        | ⑳ Drain Outlet           |
| ⑦ Conductivity Sensor       | ⑮ EDI Component       | ㉓ DI Water Outlet     |                          |
| ⑧ Pump                      | ⑯ PE water tank       | ㉔ Dispenser arm       |                          |

# HLU Specifications

Name	Standard	Low TOC	Eliminating endotoxin	Synthesizing
Model	HLU-20/40/60	HLU-20/40/60UV	HLU-20/40/60UF	HLU-20/40/60UVF
Production rate <sup>[1]</sup>	20series: 20L/hour, 40series: 40L/hour, 60series: 60L/hour			
Dispensing rate <sup>[2]</sup>	Up to 2liters/minute	Up to 2liters/minute	Up to 2liters/minute	Up to 2liters/minute
Ultrapure water quality <sup>[3]</sup>				
Resistivity ( 25°C ) <sup>[4]</sup>	18.2MΩ.cm	18.2MΩ.cm	18.2MΩ.cm	18.2MΩ.cm
Conductivity ( 25°C )	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm
TOC <sup>[5]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>
Particles <sup>[8]</sup>	<1 /ml ( >0.2μm )	<1/ml ( >0.2μm )	<1 /ml ( >0.2μm )	<1/ml ( >0.2μm )
Bacteria <sup>[9]</sup>	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml
Endotoxin <sup>[10]</sup>	N/A	N/A	<0.001 EU/ml	<0.001 EU/ml
RNases <sup>[10]</sup>	N/A	N/A	1 pg/ml	1 pg/ml
DNases <sup>[10]</sup>	N/A	N/A	5 pg/ml	5 pg/ml
Protease <sup>[10]</sup>	N/A	N/A	0.15 μg/ml	0.15 μg/ml
DI water quality <sup>[3]</sup>				
Resistivity ( 25°C ) <sup>[4]</sup>	>16MΩ.cm	>16MΩ.cm	>16MΩ.cm	>16MΩ.cm
Conductivity ( 25°C )	<0.063 μs/cm	<0.063 μs/cm	<0.063 μs/cm	<0.063 μs/cm
Particles <sup>[8]</sup>	N/A	N/A	N/A	N/A
Bacteria <sup>[9]</sup>	N/A	N/A	N/A	N/A
RO <sup>1st</sup> water quality <sup>[3]</sup>				
Ion rejection rate	98%-99% (with new RO module)	98%-99% (with new RO module)	98%-99% (with new RO module)	98%-99% (with new RO module)
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
Particles and bacteria rejection rate	>99%	>99%	>99%	>99%
Feed water requirements				
Water source type	Tap water	Tap water	Tap water	Tap water
Pressure	1-6 bar	1-6 bar	1-6 bar	1-6 bar
Temperature	5-40°C	5-40°C	5-40°C	5-40°C
Conductivity	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm	<3 ppm	<3 ppm
PH	4-10	4-10	4-10	4-10
Dissolved CO <sub>2</sub>	<30ppm	<30ppm	<30ppm	<30ppm
Power supply	200-240V,50/60Hz	200-240V,50/60Hz	200-240V,50/60Hz	200-240V,50/60Hz
Total Power	20series:120W, 40/60series: 240W			
Dimension (L×W×H)	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm
weight	Main host: about 29KG Tank: about 16KG	Main host: about 29KG Tank: about 16KG	Main host: about 29KG Tank: about 16KG	Main host: about 29KG Tank: about 16KG
Standard configuration	Main host 1set All cartridges 1set 60-liter water tank 1set	Main host 1set All cartridges 1set 60-liter water tank 1set	Main host 1set All cartridges 1set 60-liter water tank 1set	Main host 1set All cartridges 1set 60-liter water tank 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

# HLD series

## Intelligent Integration Pure Water System

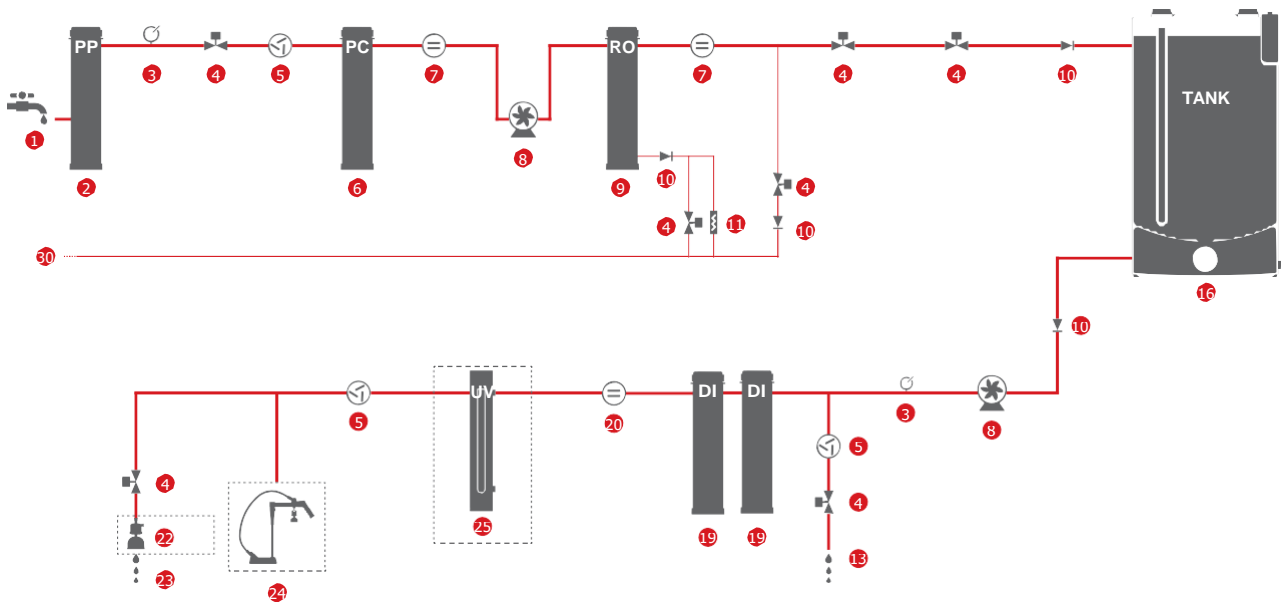
—High pure water, RO<sup>1st</sup> water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, stable and reliable single RO system, and DI ion-exchange cartridges with larger capacity, equipping with professional-grade pure water tank with 60-liter.

System output: 20, 40, 60 liters/h. It can simultaneously produce high pure water (>17.5MΩ.cm) and single RO water. The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ISO3696 (Grade 2), GB/T 6682 (Grade 1), ASTM D1193 (Type II reagent water), JIS K0557, etc., also meets the purified water technical requirements of CP, EP, USP, JP and other national pharmacopoeia.



## Flow Diagram



- |                             |                        |                        |                           |
|-----------------------------|------------------------|------------------------|---------------------------|
| 1 Feed Water                | 9 RO cartridge         | 17 Three way valve     | 25 UV Component           |
| 2 PP Pretreatment Cartridge | 10 One way valve       | 18 High tension switch | 26 TOC Component          |
| 3 Pressure sensor           | 11 Flow Restrictor     | 19 DI Cartridge        | 27 UP Ultrapure cartridge |
| 4 Solenoid valve            | 12 Pressure water tank | 20 Resistivity Sensor  | 28 UF Cartridge           |
| 5 Flow sensor               | 13 RO Water Outlet     | 21 Sanitization Block  | 29 UP Water Outlet        |
| 6 PC Pretreatment Cartridge | 14 Low tensionswitch   | 22 Final Filter        | 30 Drain Outlet           |
| 7 Conductivity Sensor       | 15 EDI Component       | 23 DI Water Outlet     |                           |
| 8 Pump                      | 16 PE water tank       | 24 Dispenser arm       |                           |

## HLD Specifications

Name	Standard	Eliminating bacteria and particle
<b>Model</b>	<b>HLD-20/40/60</b>	<b>HLD-20/40/60UT</b>
Production rate <sup>[1]</sup>	20series: 20L/hour, 40series: 40L/hour, 60series: 60L/hour	
Dispensing rate <sup>[2]</sup>	Up to 2 liters/minute	Up to 2 liters/minute
<b>DI water quality<sup>[3]</sup></b>		
Resistivity ( 25°C ) <sup>[4]</sup>	>17.5 MΩ.cm	>17.5 MΩ.cm
Conductivity ( 25°C )	<0.057 μs/cm	<0.057 μs/cm
Particles <sup>[8]</sup>	N/A	<1/ml ( >0.2μm )
Bacteria <sup>[9]</sup>	N/A	<0.01CFU/ml
<b>RO<sup>1st</sup> water quality<sup>[3]</sup></b>		
Ion rejection rate	98%-99%(with new RO module)	98%-99%(with new RO module)
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
Particles and bacteria rejection rate	>99%	>99%
<b>Feed water requirements</b>		
Water source type	Tap water	Tap water
Pressure	1-6 bar	1-6 bar
Temperature	5-40°C	5-40°C
Conductivity	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm
PH	4-10	4-10
Dissolved CO <sub>2</sub>	<30 ppm	<30 ppm
Power supply	20series:100-240V,50/60Hz ; 40/60series:200-240V,50/60Hz	20series:100-240V,50/60Hz ; 40/60series:200-240V,50/60Hz
Total Power	20series:120W ; 40/60series:240W	20series:120W ; 40/60series:240W
Dimension (L×W×H)	Host:370×623×600mm Tank:392×518×772mm	Host:370×623×600mm Tank:392×518×772mm
weight	Main host: about 27KG Tank: about 16KG	Main host: about 27KG Tank: about 16KG
Standard configuration	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set

[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

# HLUS series

## Intelligent Integration Ultrapure Water System

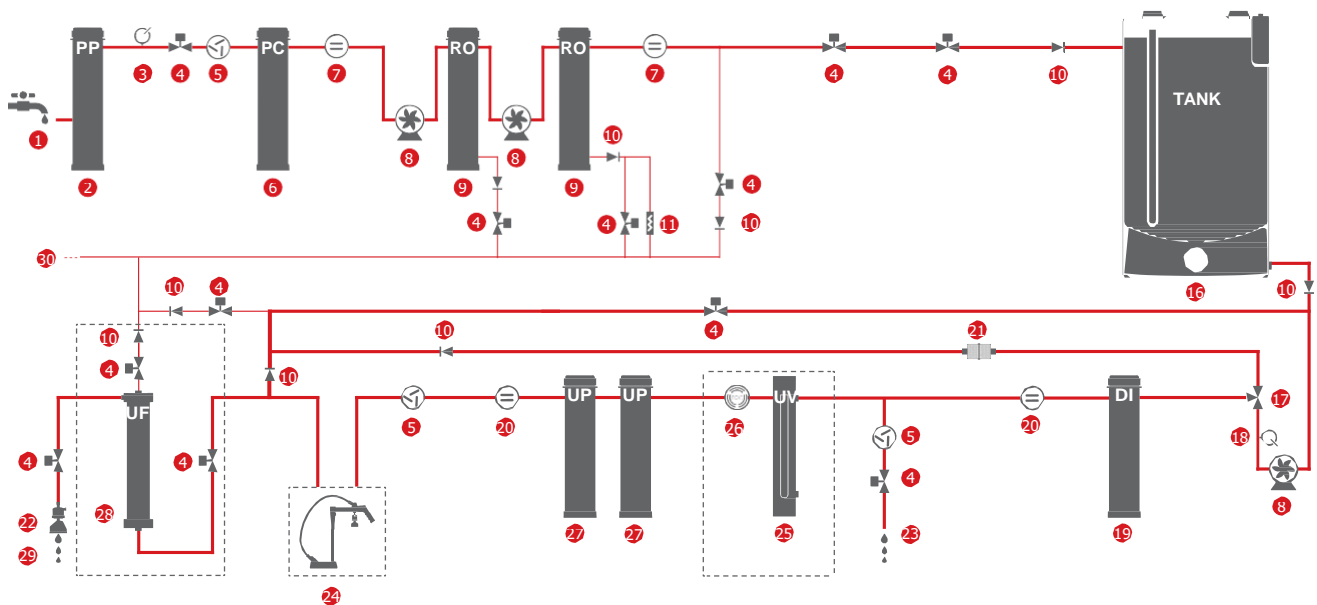
—Ultrapure water, high pure water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IoT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system, and DI ion-exchange cartridges with larger capacity, equipping with professional-grade pure water tank with 60-liter.

System output: 13, 25 liters/h. It can simultaneously produce ultrapure water (18.2MΩ.cm) and high pure water (>16MΩ.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



- |                             |                        |                        |                           |
|-----------------------------|------------------------|------------------------|---------------------------|
| 1 Feed Water                | 9 RO cartridge         | 17 Three way valve     | 25 UV Component           |
| 2 PP Pretreatment Cartridge | 10 One way valve       | 18 High tension switch | 26 TOC Component          |
| 3 Pressure sensor           | 11 Flow Restrictor     | 19 DI Cartridge        | 27 UP Ultrapure cartridge |
| 4 Solenoid valve            | 12 Pressure water tank | 20 Resistivity Sensor  | 28 UFCartridge            |
| 5 Flow sensor               | 13 RO Water Outlet     | 21 Sanitization Block  | 29 UP Water Outlet        |
| 6 PC Pretreatment Cartridge | 14 Low tensionswitch   | 22 Final Filter        | 30 Drain Outlet           |
| 7 Conductivity Sensor       | 15 EDI Component       | 23 DI Water Outlet     |                           |
| 8 Pump                      | 16 PE water tank       | 24 Dispenser arm       |                           |

# HLUS Specifications

Name	Standard	Low TOC	Eliminating endotoxin	Synthesizing
Model	HLUS-13/25	HLUS-13/25UV	HLUS-13/25UF	HLUS-13/25UVF
Production rate <sup>[1]</sup>	13 series: 13 L/hour, 25 series: 25 L/hour			
Dispensing rate <sup>[2]</sup>	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute
<b>Ultrapure water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm
Conductivity ( 25°C )	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm
TOC <sup>[5]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>
Particles <sup>[8]</sup>	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )
) Bacteria <sup>[9]</sup>	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml
Endotoxin <sup>[10]</sup>	N/A	N/A	<0.001EU/ml	<0.001EU/ml
RNases <sup>[10]</sup>	N/A	N/A	1 pg/ml	1 pg/ml
DNases <sup>[10]</sup>	N/A	N/A	5 pg/ml	5 pg/ml
Protease <sup>[10]</sup>	N/A	N/A	0.15 μg/ml	0.15 μg/ml
<b>DI water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	>16 MΩ.cm	>16 MΩ.cm	>16 MΩ.cm	>16 MΩ.cm
Conductivity ( 25°C )	<0.063 μs/cm	<0.063 μs/cm	<0.063 μs/cm	<0.063 μs/cm
Particles <sup>[8]</sup>	N/A	N/A	N/A	N/A
Bacteria <sup>[9]</sup>	N/A	N/A	N/A	N/A
<b>RO<sup>2nd</sup> water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	>0.2 MΩ.cm	>0.2 MΩ.cm	>0.2 MΩ.cm	>0.2 MΩ.cm
Conductivity ( 25°C )	<5 μs/cm	<5 μs/cm	<5 μs/cm	<5 μs/cm
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
) Particles and bacteria rejection rate	>99%	>99%	>99%	>99%
<b>Feed water requirements</b>				
Water source type	Tap water	Tap water	Tap water	Tap water
Pressure	1-6 bar	1-6 bar	1-6 bar	1-6 bar
Temperature	5-40°C	5-40°C	5-40°C	5-40°C
Conductivity	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm	<3 ppm	<3 ppm
PH	4-10	4-10	4-10	4-10
Dissolved CO <sub>2</sub>	<30 ppm	<30 ppm	<30 ppm	<30 ppm
Power supply	200-240V , 50/60Hz	200-240V , 50/60Hz	200-240V , 50/60Hz	200-240V , 50/60Hz
Total Power	240W	240W	240W	240W
Dimension (L×W×H)	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm
weight	Main host: about 32KG Tank: about 16KG	Main host: about 32KG Tank: about 16KG	Main host: about 32KG Tank: about 16KG	Main host: about 32KG Tank: about 16KG
Standard configuration	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set

[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

# HLDS series

## Intelligent Integration Pure Water System

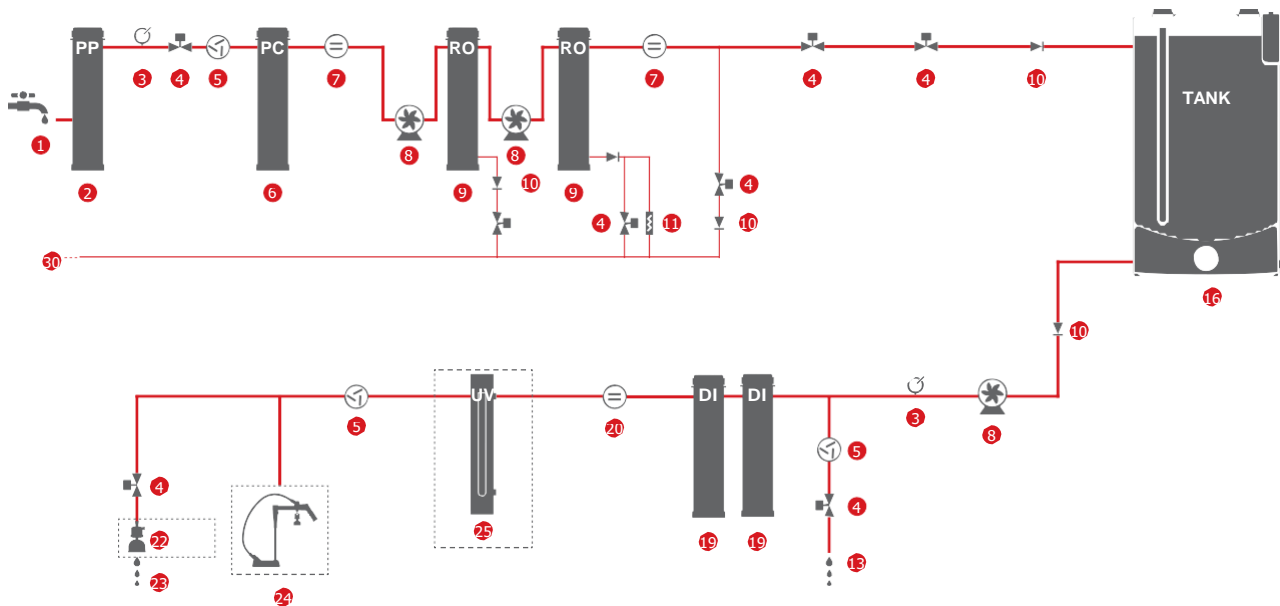
—High pure water, RO<sup>2nd</sup> water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system, and DI ion-exchange cartridges with larger capacity, equipping with professional-grade pure water tank with 60-liter.

System output: 13, 25 liters/h. It can simultaneously produce high pure water (>17.5MΩ.cm) and double RO water (<5μs/cm). The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ISO3696 (Grade 2), GB/T 6682 (Grade 1), ASTM D1193 (Type II reagent water), JIS K0557, etc., also meets the purified water technical requirements of CP, EP, USP, JP and other national pharmacopoeia.



## Flow Diagram



- |                             |                        |                        |                           |
|-----------------------------|------------------------|------------------------|---------------------------|
| 1 Feed Water                | 9 RO cartridge         | 17 Three way valve     | 25 UV Component           |
| 2 PP Pretreatment Cartridge | 10 One way valve       | 18 High tension switch | 26 TOC Component          |
| 3 Pressure sensor           | 11 Flow Restrictor     | 19 DI Cartridge        | 27 UP Ultrapure cartridge |
| 4 Solenoid valve            | 12 Pressure water tank | 20 Resistivity Sensor  | 28 UF Cartridge           |
| 5 Flow sensor               | 13 RO Water Outlet     | 21 Sanitization Block  | 29 UP Water Outlet        |
| 6 PC Pretreatment Cartridge | 14 Low tension switch  | 22 Final Filter        | 31 Drain Outlet           |
| 7 Conductivity Sensor       | 15 EDI Component       | 23 DI Water Outlet     |                           |
| 8 Pump                      | 16 PE water tank       | 24 Dispenser arm       |                           |



## HLDS Specifications

Name	Standard	Eliminating bacteria and particle
<b>Model</b>	<b>HLDS-13/25</b>	<b>HLDS-13/25UT</b>
Production rate <sup>[1]</sup>		13 series: 13 L/hour, 25 series: 25 L/hour
Dispensing rate <sup>[2]</sup>	Up to 2 liters/minute	Up to 2 liters/minute
<b>DI water quality <sup>[3]</sup></b>		
Resistivity ( 25°C ) <sup>[4]</sup>	>17.5 MΩ.cm	>17.5 MΩ.cm
Conductivity ( 25°C )	<0.057 μs/cm	<0.057 μs/cm
Particles <sup>[8]</sup>	N/A	<1/ml ( >0.2μm )
Bacteria <sup>[9]</sup>	N/A	<0.01CFU/ml
<b>RO<sup>2nd</sup> water quality <sup>[3]</sup></b>		
Resistivity ( 25°C ) <sup>[4]</sup>	>0.2 MΩ.cm	>0.2 MΩ.cm
Conductivity ( 25°C )	<5 μs/cm	<5 μs/cm
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
Particles and bacteria rejection rate	>99%	>99%
<b>Feed water requirements</b>		
Water source type	Tap water	Tap water
Pressure	1-6 bar	1-6 bar
Temperature	5-40°C	5-40°C
Conductivity	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm
PH	4-10	4-10
Dissolved CO <sub>2</sub>	<30 ppm	<30 ppm
Power supply	200-240V , 50/60Hz	200-240V , 50/60Hz
Total Power	240W	240W
Dimension (L×W×H)	Host: 370×623×600mm Tank: 392×518×772mm	Host: 370×623×600mm Tank: 392×518×772mm
weight	Main host: about 30KG Tank: about 16KG	Main host: about 30KG Tank: about 16KG
Standard configuration	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set

[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

# HLUE series

## Intelligent Integration Ultrapure Water System

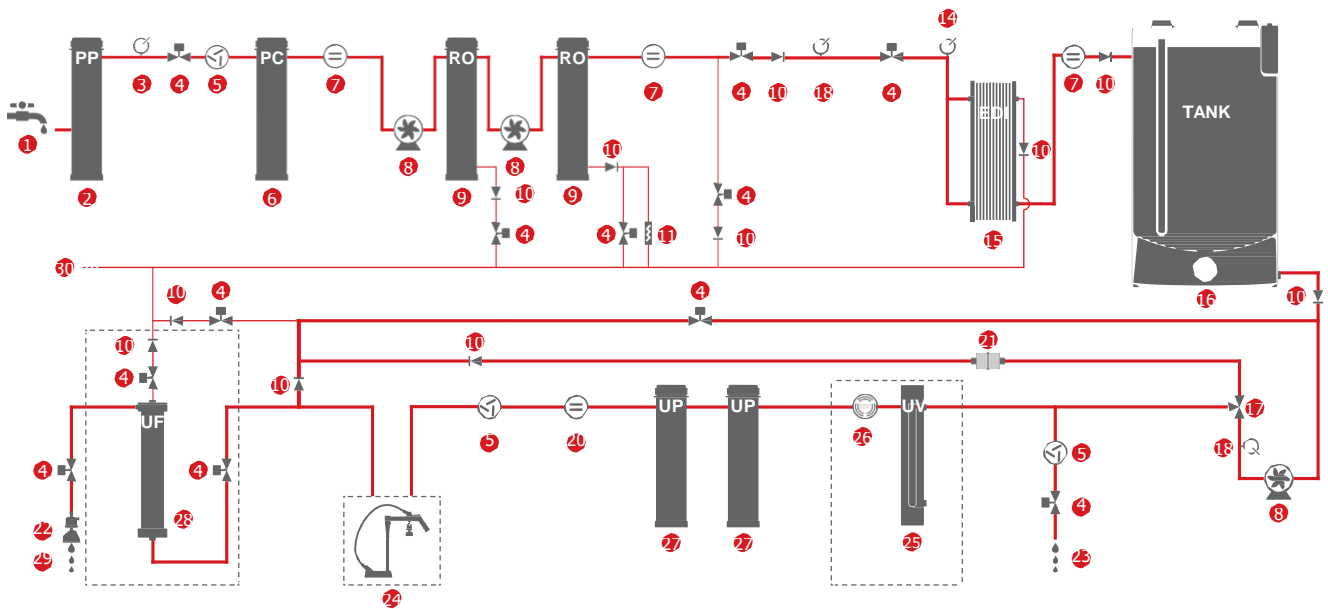
—Ultrapure water, EDI water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system, advanced EDI module and DI ion-exchange cartridges with larger capacity, equipping with built-in 1.8-liter pressure water tank and professional-grade pure water tank with 60-liter.

System output: 10, 20 liters/h. Maximum output per day is up to 480 liters. It can simultaneously produce ultrapure water ( $18.2\text{M}\Omega\cdot\text{cm}$ ) and EDI water (Resistivity  $>15\text{M}\Omega\cdot\text{cm}$ ,  $\text{TOC} < 30\text{ppb}$ ) with optimized running cost. 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



- |                             |                        |                        |                           |
|-----------------------------|------------------------|------------------------|---------------------------|
| 1 Feed Water                | 9 RO cartridge         | 17 Three way valve     | 25 UV Component           |
| 2 PP Pretreatment Cartridge | 10 One way valve       | 18 High tension switch | 26 TOC Component          |
| 3 Pressure sensor           | 11 Flow Restrictor     | 19 DI Cartridge        | 27 UP Ultrapure cartridge |
| 4 Solenoid valve            | 12 Pressure water tank | 20 Resistivity Sensor  | 28 UF Cartridge           |
| 5 Flow sensor               | 13 RO Water Outlet     | 21 Sanitization Block  | 29 UP Water Outlet        |
| 6 PC Pretreatment Cartridge | 14 Low tension switch  | 22 Final Filter        | 30 Drain Outlet           |
| 7 Conductivity Sensor       | 15 EDI Component       | 23 DI Water Outlet     |                           |
| 8 Pump                      | 16 PE water tank       | 24 Dispenser arm       |                           |

## HLUE Specifications

Name	Standard	Low TOC	Eliminating endotoxin	Synthesizing
Model	HLUE-10/20	HLUE-10/20UV	HLUE-10/20UF	HLUE-10/20UVF
Production rate <sup>[1]</sup>	10 series: 10L/hour, 20 series: 20L/hour			
Dispensing rate <sup>[2]</sup>	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute	Up to 2 liters/minute
<b>Ultrapure water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm	18.2 MΩ.cm
Conductivity ( 25°C )	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm	0.055 μs/cm
TOC <sup>[5]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>	5 ppb <sup>[6]</sup>	2 ppb <sup>[7]</sup>
Particles <sup>[8]</sup>	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )	<1/ml ( >0.2μm )
) Bacteria <sup>[9]</sup>	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml	<0.01CFU/ml
Endotoxin <sup>[10]</sup>	N/A	N/A	<0.001EU/ml	<0.001EU/ml
RNases <sup>[10]</sup>	N/A	N/A	1 pg/ml	1 pg/ml
DNases <sup>[10]</sup>	N/A	N/A	5 pg/ml	5 pg/ml
Protease <sup>[10]</sup>	N/A	N/A	0.15 μg/ml	0.15 μg/ml
<b>EDI water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	>15 MΩ.cm	>15 MΩ.cm	>15 MΩ.cm	>15 MΩ.cm
Conductivity ( 25°C )	<0.067 μs/cm	<0.067 μs/cm	<0.067 μs/cm	<0.067 μs/cm
TOC <sup>[5]</sup>	≤ 30 ppb	≤ 30 ppb	≤ 30 ppb	≤ 30 ppb
Particles <sup>[8]</sup>	N/A	N/A	N/A	N/A
Bacteria <sup>[9]</sup>	N/A	N/A	N/A	N/A
<b>RO<sup>2nd</sup> water quality <sup>[3]</sup></b>				
Resistivity ( 25°C ) <sup>[4]</sup>	>0.2 MΩ.cm	>0.2 MΩ.cm	>0.2 MΩ.cm	>0.2 MΩ.cm
Conductivity ( 25°C )	<5 μs/cm	<5 μs/cm	<5 μs/cm	<5 μs/cm
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
) Particles and bacteria rejection rate	>99%	>99%	>99%	>99%
<b>Feed water requirements</b>				
Water source type	Tap water	Tap water	Tap water	Tap water
Pressure	1-6 bar	1-6 bar	1-6 bar	1-6 bar
Temperature	5-40°C	5-40°C	5-40°C	5-40°C
Conductivity	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm	<3 ppm	<3 ppm
PH	4-10	4-10	4-10	4-10
Dissolved CO <sub>2</sub>	<30 ppm	<30 ppm	<30 ppm	<30 ppm
Power supply	200-240V , 50/60Hz	200-240V , 50/60Hz	200-240V , 50/60Hz	200-240V , 50/60Hz
Total Power	240W	240W	240W	240W
Dimension (L×W×H)	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm	Main host: 370×623×600mm Tank: 392×518×772mm
weight	Main host: about 33KG Tank: about 16KG	Main host: about 33KG Tank: about 16KG	Main host: about 33KG Tank: about 16KG	Main host: about 33KG Tank: about 16KG
Standard configuration	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set

[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

# HLDE series

## Intelligent Integration Pure Water System

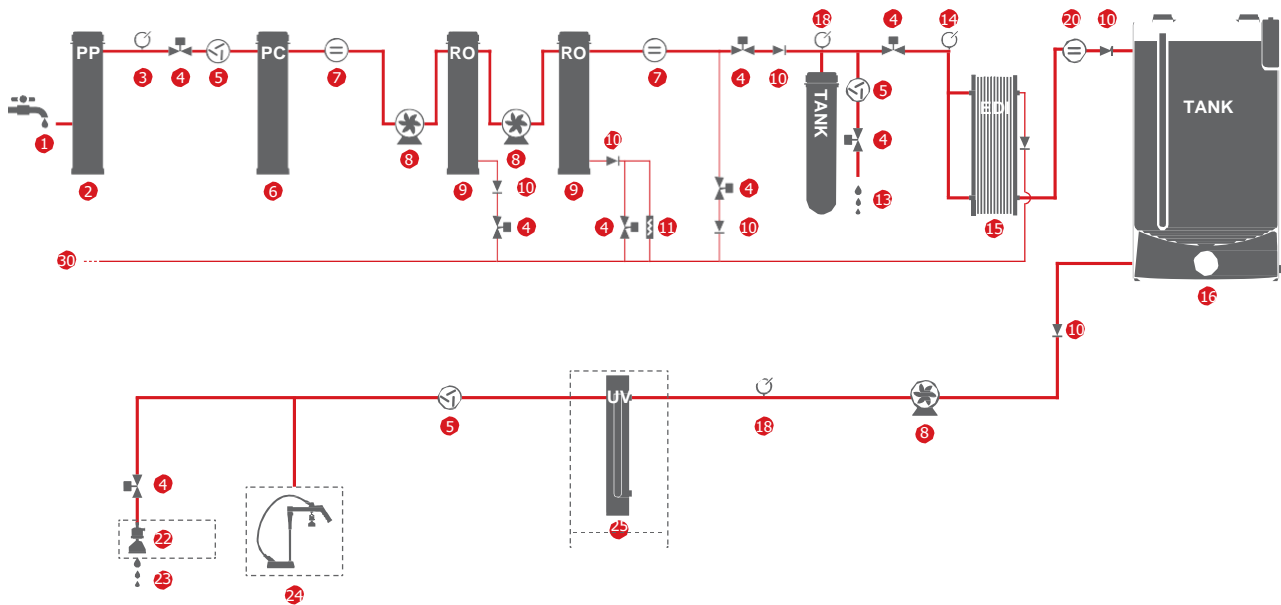
—EDI water, ,RO<sup>2nd</sup> water

With tap water inlet, using the innovative intelligent human-computer interactive control system and 5-inch colorful capacitive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system, and advanced EDI module, equipping with built-in 1.8-liter pressure water tank and professional-grade pure water tank with 60-liter.

System output: 10, 20 liters/h. Maximum output per day is up to 480 liters. It can simultaneously produce double RO water ( $<5\mu\text{s/cm}$ ) and EDI water (Resistivity $>15\text{M}\Omega\cdot\text{cm}$ , TOC $<30\text{ppb}$ ) with optimized running cost. The quality of pure water fully meets or exceeds the requirements of water quality standard specified by ISO3696 (Grade 2), GB/T 6682 (Grade 1), ASTM D1193 (Type II reagent water), JIS K0557, etc., also meets the purified water technical requirements of CP, EP, USP, JP and other national pharmacopoeia.



## Flow Diagram



- |                             |                        |                        |                           |
|-----------------------------|------------------------|------------------------|---------------------------|
| 1 Feed Water                | 9 RO cartridge         | 17 Three way valve     | 25 UV Component           |
| 2 PP Pretreatment Cartridge | 10 One way valve       | 18 High tension switch | 26 TOC Component          |
| 3 Pressure sensor           | 11 Flow Restrictor     | 19 DI Cartridge        | 27 UP Ultrapure cartridge |
| 4 Solenoid valve            | 12 Pressure water tank | 20 Resistivity Sensor  | 28 UF Cartridge           |
| 5 Flow sensor               | 13 RO Water Outlet     | 21 Sanitization Block  | 29 UP Water Outlet        |
| 6 PC Pretreatment Cartridge | 14 Low tension switch  | 22 Final Filter        | 30 Drain Outlet           |
| 7 Conductivity Sensor       | 15 EDI Component       | 23 DI Water Outlet     |                           |
| 8 Pump                      | 16 PE water tank       | 24 Dispenser arm       |                           |

## HLDE Specifications

Name	Standard	Eliminating bacteria and particle
<b>Model</b>	<b>HLDE-10/20</b>	<b>HLDE-10/20UT</b>
Production rate <sup>[1]</sup>		10series:10L/hour,20series:20L/hour
Dispensing rate <sup>[2]</sup>	Up to 2 liters/minute	Up to 2 liters/minute
<b>EDI water quality <sup>[3]</sup></b>		
Resistivity ( 25°C ) <sup>[4]</sup>	>15 MΩ.cm	>15 MΩ.cm
Conductivity ( 25°C )	<0.067 μs/cm	<0.067 μs/cm
TOC <sup>[5]</sup>	≤ 30 ppb	≤ 30 ppb
Particles <sup>[8]</sup>	N/A	<1/ml ( >0.2μm )
Bacteria <sup>[9]</sup>	N/A	<0.01CFU/ml
<b>RO<sup>2nd</sup> water quality <sup>[3]</sup></b>		
Resistivity ( 25°C ) <sup>[4]</sup>	>0.2 MΩ.cm	>0.2 MΩ.cm
Conductivity ( 25°C )	<5 μs/cm	<5 μs/cm
Organic rejection rate	>99% ( MW>300 Dalton )	>99% ( MW>300 Dalton )
Particles and bacteria rejection rate	>99%	>99%
<b>Feed water requirements</b>		
Water source type	Tap water	Tap water
Pressure	1-6 bar	1-6 bar
Temperature	5-40 °C	5-40 °C
Conductivity	<2000 μs/cm	<2000 μs/cm
Total hardness (In CaCO <sub>3</sub> )	<300 ppm	<300 ppm
TOC	<2000 ppb	<2000 ppb
Free chlorine	<3 ppm	<3 ppm
PH	4-10	4-10
Dissolved CO <sub>2</sub>	<30 ppm	<30 ppm
Power supply	200-240V , 50/60Hz	200-240V , 50/60Hz
Total Power	240W	240W
Dimension (L×W×H)	Host:370×623×600mm Tank:392×518×772mm	Host:370×623×600mm Tank:392×518×772mm
weight	Main host: about 31KG Tank: about 16KG	Main host: about 31KG Tank: about 16KG
Standard configuration	Main host 1 set All cartridges 1 set 60-liter water tank 1 set	Main host 1 set All cartridges 1 set 60-liter water tank 1 set

[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

ISO  
3696  
US Pharmacopoeia  
GB/T 33087 2016  
Japan Pharmacopoeia  
**ISO9001**  
CLSI GB/T.11446 1-2013  
ASTMD 5196 **ISO14001**  
China Pharmacopoeia ASTM  
GB/T 6682-2008 JIS K  
0557  
Eu Pharmacopoeia 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.
- HL Discovery 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, ASTMD 5196, ISO 3696, CLSI, JIS K0557.

## 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.

## Ordering Information

Host	HLU-20	Intelligent integration ultrapure water system,20L/h, Standard, Ultrapure water, high pure water
	HLU-40	Intelligent integration ultrapure water system,40L/h, Standard, Ultrapure water, high pure water
	HLU-60	Intelligent integration ultrapure water system,60L/h, Standard, Ultrapure water, high pure water
	HLU-20UV	Intelligent integration ultrapure water system,20L/h, Low TOC, Ultrapure water, high pure water
	HLU-40UV	Intelligent integration ultrapure water system,40L/h, Low TOC, Ultrapure water, high pure water
	HLU-60UV	Intelligent integration ultrapure water system,60L/h, Low TOC, Ultrapure water, high pure water
	HLU-20UF	Intelligent integration ultrapure water system,20L/h, Eliminating endotoxin, Ultrapure water, high pure water
	HLU-40UF	Intelligent integration ultrapure water system,40L/h, Eliminating endotoxin, Ultrapure water, high pure water
	HLU-60UF	Intelligent integration ultrapure water system,60L/h, Eliminating endotoxin, Ultrapure water, high pure water
	HLU-20UVF	Intelligent integration ultrapure water system,20L/h, Synthesizing, Ultrapure water, high pure water
	HLU-40UVF	Intelligent integration ultrapure water system,40L/h, Synthesizing, Ultrapure water, high pure water
	HLU-60UVF	Intelligent integration ultrapure water system,60L/h, Synthesizing, Ultrapure water, high pure water
	HLD-20	Intelligent integration pure water system,20L/h, Standard, High pure water, RO <sup>1st</sup> water
	HLD-40	Intelligent integration pure water system,40L/h, Standard, High pure water, RO <sup>1st</sup> water
	HLD-60	Intelligent integration pure water system,60L/h, Standard, High pure water, RO <sup>1st</sup> water
	HLD-20UT	Intelligent integration pure water system,20L/h, Eliminating bacteria and particle, High pure water, RO <sup>1st</sup> water
	HLD-40UT	Intelligent integration pure water system,40L/h, Eliminating bacteria and particle, High pure water, RO <sup>1st</sup> water
	HLD-60UT	Intelligent integration pure water system,60L/h, Eliminating bacteria and particle, High pure water, RO <sup>1st</sup> water
	HLUS-13	Intelligent integration ultrapure water system,13L/h, Standard, Ultrapure water, high pure water
	HLUS-25	Intelligent integration ultrapure water system,25L/h, Standard, Ultrapure water, high pure water
	HLUS-13UV	Intelligent integration ultrapure water system,13L/h, Low TOC, Ultrapure water, high pure water
	HLUS-25UV	Intelligent integration ultrapure water system,25L/h, Low TOC, Ultrapure water, high pure water
	HLUS-13UF	Intelligent integration ultrapure water system,13L/h, Eliminating endotoxin, Ultrapure water, high pure water
	HLUS-25UF	Intelligent integration ultrapure water system,25L/h, Eliminating endotoxin, Ultrapure water, high pure water
	HLUS-13UVF	Intelligent integration ultrapure water system,13L/h, Synthesizing, Ultrapure water, high pure water
	HLUS-25UVF	Intelligent integration ultrapure water system,25L/h, Synthesizing, Ultrapure water, high pure water
	HLDS-13	Intelligent integration pure water system,13L/h, Standard, High pure water, RO <sup>2nd</sup> water
	HLDS-25	Intelligent integration pure water system,25L/h, Standard, High pure water, RO <sup>2nd</sup> water
	HLDS-13UT	Intelligent integration pure water system,13L/h, Eliminating bacteria and particle, High pure water, RO <sup>2nd</sup> water
	HLDS-25UT	Intelligent integration pure water system,25L/h, Eliminating bacteria and particle, High pure water, RO <sup>2nd</sup> water
	HLUE-10	Intelligent integration ultrapure water system,10L/h, Standard, Ultrapure water, EDI water
	HLUE-20	Intelligent integration ultrapure water system,20L/h, Standard, Ultrapure water, EDI water
	HLUE-10UV	Intelligent integration ultrapure water system,10L/h, Low TOC, Ultrapure water, EDI water
	HLUE-20UV	Intelligent integration ultrapure water system,20L/h, Low TOC, Ultrapure water, EDI water
	HLUE-10UF	Intelligent integration ultrapure water system,10L/h, Eliminating endotoxin, Ultrapure water, EDI water
	HLUE-20UF	Intelligent integration ultrapure water system,20L/h, Eliminating endotoxin, Ultrapure water, EDI water
	HLUE-10UVF	Intelligent integration ultrapure water system,10L/h, Synthesizing, Ultrapure water, EDI water
	HLUE-20UVF	Intelligent integration ultrapure water system,20L/h, Synthesizing, Ultrapure water, EDI water
	HLDE-10	Intelligent integration pure water system,10L/h, Standard, EDI water, RO <sup>2nd</sup> water
	HLDE-20	Intelligent integration pure water system,20L/h, Standard, EDI water, RO <sup>2nd</sup> water
	HLDE-10UT	Intelligent integration pure water system,10L/h, Eliminating bacteria and particle, EDI water, RO <sup>2nd</sup> water
	HLDE-20UT	Intelligent integration pure water system,10L/h, Eliminating bacteria and particle, EDI water, RO <sup>2nd</sup> water

## Ordering Information

Cartridge	Item No	Product description		
	HPC101	Pretreatment cartridge A		
	HPC102	Pretreatment cartridge B		
	HPC302	RO <sup>1st</sup> module S2		
	HPC304	RO <sup>1st</sup> module S4		
	HPC306	RO <sup>1st</sup> module S6		
	HPC303	RO <sup>1st</sup> module F3		
	HPC305	RO <sup>1st</sup> module F5		
	HPC403	RO <sup>2nd</sup> module D3		
	HPC405	RO <sup>2nd</sup> module D5		
	HPC501	DI cartridge		
	HPC601	UP cartridge, standard		
	HPC602	UP cartridge, Low TOC		
	HPC700	Air filter for		
	HPC703	185&254nm double wavelength UV lamp		
	HPC702	254nm UV lamp		
	HPC709	UF ultrafiltration module		
HPC801	TF terminal microfilter			
HPC802	TF terminal microfilter			
HPC810	UF terminal ultrafilter			
Accessory	Item No	Product description	Item No	Product description
	TANK1061	60-liter PE pure water tank, equipped with air filter and independent level control module with LCD display	PWA7010	Pretreatment filter for source water
	TANK1060	60-liter PE pure water tank, equipped with air filter	PWA7011	PP cartridge for pretreatment filter (5 µm,10 inch)
	TANK1121	120-liter PE pure water tank, equipped with air filter and independent level control module with LCD display	PWA7012	RS cartridge for pretreatment filter (10 inch)
	TANK1120	120-liter PE pure water tank, equipped with air filter	PWA7501	Foot switch
	DISP2000	HiDis dispenser arm, equipped with 2M connection kit	PWA7502	External leak sensor
	PWA7200	Automatic water softener (salt required)	PWA1301	Wall-mounted mounting bracket for XLE
Service	Item No	Product description		
	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](http://www.harmony-scientific.com) or email to [info@harmony-scientific.com](mailto:info@harmony-scientific.com)

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