



Intelligent Integrated Ultrapure Water System



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Darsun Scientific Intelligent Integrated Ultrapure Water System



Product Overview

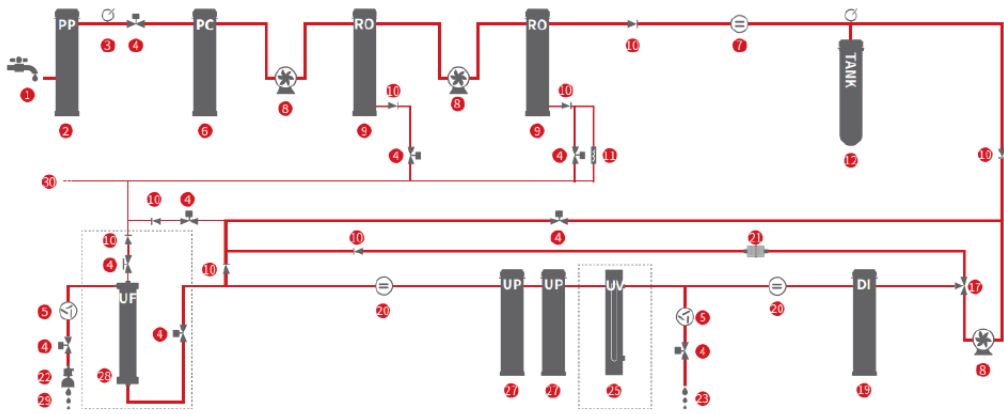
With tap water inlet, using the innovative human-computer interactive control system and 5-inch colorful resistive touch screen, integrating functions of Internet of Things (IOT) and cloud platform, embedding new purification cartridges with patented structure, rigorous double RO system, and DI ion-exchange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

System output: 13 liters/h. It can simultaneously produce ultrapure water (18.2MΩ.cm) and high pure water (>17.5MΩ.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.

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.
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

Name	Low TOC
Model	DS-EU1030UV
Production rate	13 L/hour
Dispensing rate	Up to 2 L/min
Parameter	Value
Resistivity (25°C)	18.2 MΩ.cm
Conductivity (25°C)	0.055 μS/cm
TOC	2 ppb
Particles	<1 /ml (>0.2 μm)
Bacteria	<0.01 CFU/ml
Endotoxin	N/A
RNases	N/A
DNases	N/A
Protease	N/A
DI water quality	
Resistivity (25°C)	>16 MΩ.cm
Conductivity (25°C)	0.063 μS/cm
Particles	N/A
Bacteria	N/A
RO2nd water quality³	
Resistivity (25°C) ⁴	>0.2 MΩ.cm
Conductivity (25°C)	<5 μS/cm
Organic rejection rate	>99% (MW>300 Dalton)
Particles & bacteria rejection rate	>99%
Feed water requirements	
Water source type	Tap water
Pressure	1–6 bar
Temperature	5–40°C
Conductivity	<2000 μS/cm
Total hardness (as CaCO ₃)	<300 ppm
TOC	<2000 ppb
Free chlorine	<3 ppm
pH	4–10
Dissolved CO ₂	<40 ppm
Power supply	100–240V, 50/60Hz
Total Power	120W
Dimensions (L×W×H)	370 × 623 × 600 mm
Weight	32 kg
Standard configuration	Main host 1 set Cartridges 1 set Pressure water tank 1.8-liter, 1 set



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

Introduction to Performance & Characteristics

Innovative Control System, Bringing Efficiency & Intelligence

Intelligent human-computer interactive control system

5-inch colorful resistive touch screen, resolution:480*272, achieve touch operation experience the same as mobile phone.

Simple and intuitive UI interface design, convenient to fully understand the system operating status and parameters. A glance for all important information.

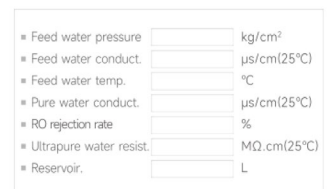
Traceable comprehensive data management

- Store operating data records up to 3 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 EXCEL format, meet 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.



Comprehensive water quality monitoring and alarm

- 3 water quality sensors, to monitor water quality and alarm (RO water, DI water and UP water), electrode constant-0.01cm-1, temperature sensitivity-0.1°C, and the conductivity/ resistivity after temperature compensation and water temperature can be displayed simultaneously.
- 2 flow sensors, to achieve (DI water and UP water) quantitative dispensing function.
- With real-time display function of ion rejection rate of RO membrane.
- Independent TOC detection module is optional to 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.



Perfect consumables management

- Function of consumable life management (PP/PC/RO/DI/UP/UV/TF1) combined with water quality, time and capacity, to reduce consumable costs.
- Serial number verification function of original cartridges, encrypted long serial number verification code, to prevent disoperation of cartridges installation and replacement.



Back

Innovative Internet of Things (IOT) and cloud platform technology

- Access the internet by Ethernet or 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.



Flexible and diverse water dispensing mode

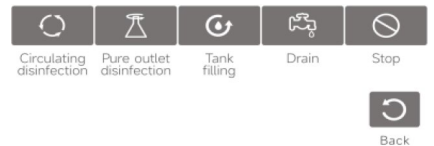
- The host is equipped with DI, UP 2 standard pure water outlet, general and quantitative-2 kinds of water dispensing mode, bringing all new dispensing experience.
- Pressure water tank, which can isolate air, stores RO water to cope with large water dispensing needs.
- Professional PE pure water tank is optional to provide the third pure water outlet, to improve 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.



Professional ultrapure water circulation and disinfection function

- Ultrapure water circulation system with adjustable interval running times, to keep the system in low levels of bacterial contamination and reduce energy consumption.
- System disinfection with chemical dosing effectively sterilizes the pure water pipeline system. And it can manually perform "cycle disinfection", "dispensing outlet disinfection", "water tank refill", "manual sewage", "stop disinfection".

Sanitization



Full security protection

- With DC24V as the main power supply, fully use weak current components, to meet the safety standards.
- 2 level permission management, administrator and ordinary users have strict permission distinction.
- Optional external water leakage protection alarm device to avoid the risk of water leakage and provide more safety protection.
- 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.

Information query



Advanced System Configuration, Guaranteeing Strong Quality

Powerful 12-inch pretreated cartridge

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



Rigorous double RO system

- 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 < 5µs/cm (feed water conductivity < 1500µs/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, easy to install and maintain.





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, 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 18.2MΩ.cm of ultrapure water resistivity and reduce TOC precipitation.



Double wavelength UV module

- Long-life ultraviolet lamp (185&254nm), combined with SUS316L flow shell, can reduce the value of TOC to ≤2ppb[1], and can achieve efficient sterilization and inhibit bacterial growth, suitable for HPLC, UPLC, LC-MS and other precision instruments.



MF terminal micro filter

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



Built-in 1.8-liter pressure water tank

- With dual functions of water storage and pressurization, FDA approved, its fully enclosed structure effectively isolates air, and prevent the touching of CO2 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.



Multiple communication interfaces

- USB interface, to export running data or upgrade system version online.
- RJ45 or USB/WIFI interface, to achieve the IOT and cloud platform connection.
- HiDis pure water dispensing arm interface, to achieve power supply and data communication with the host. (Optional)
- L-Tank pure water tank interface, to synchronize water tank level signal with the host. (Optional)
- FS foot switch interface, easy to dispense, suitable for more dispensing scenarios. (Optional)



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

- 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 CO2 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 CO2 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 μ 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.



Item	Model	Description	Qty	(USD)
1	DS101PC	Pretreatment cartridge A (12 month)	1	57
2	DS102PC	Pretreatment cartridge B (20 month)	1	70
3	DS303PC	RO1st module F3 (12-24)	1	210
4	DS403PC	RO2nd module D3 (12-24)	1	180
5	DS501PC	DI cartridge	1	100
6	DS602PC	UP cartridge ,low TOC	2	560
7	DS703PC	185&254nm double wavelength UV lamp (9000hrs)	1	370
8	DS801PC	TF terminal microfilter (6-12)	1	150