



Proseers



# Quality Laboratory Water Solution



QINGDAO INNOVA BIO-MEDITECH CO., LTD





## About Us

**Innova Bio-Meditech** is one of the leading global providers of laboratory and medical devices. Firmly committed to our mission of “sharing innovative bio-meditech solutions with the world”, we are dedicated to innovation in the fields of Biology Project, Life Science, Pharmacy Industry and Medical Treatment.

**Innova Bio-Meditech** possesses a sound distribution and service network with business partners in North and Latin America, Europe, Africa and Asia-Pacific etc. We have built up a well established R&D, manufacture network with 3 centers in Beijing, Qingdao, and Shanghai. Inspired by the needs of our customers, we adopt advanced technologies and transform them into accessible innovation. This means constant effort and research, in order to more fully understand the developments of the market, produce constantly upgraded product ranges by adding new products year after year.

*The passion for science*



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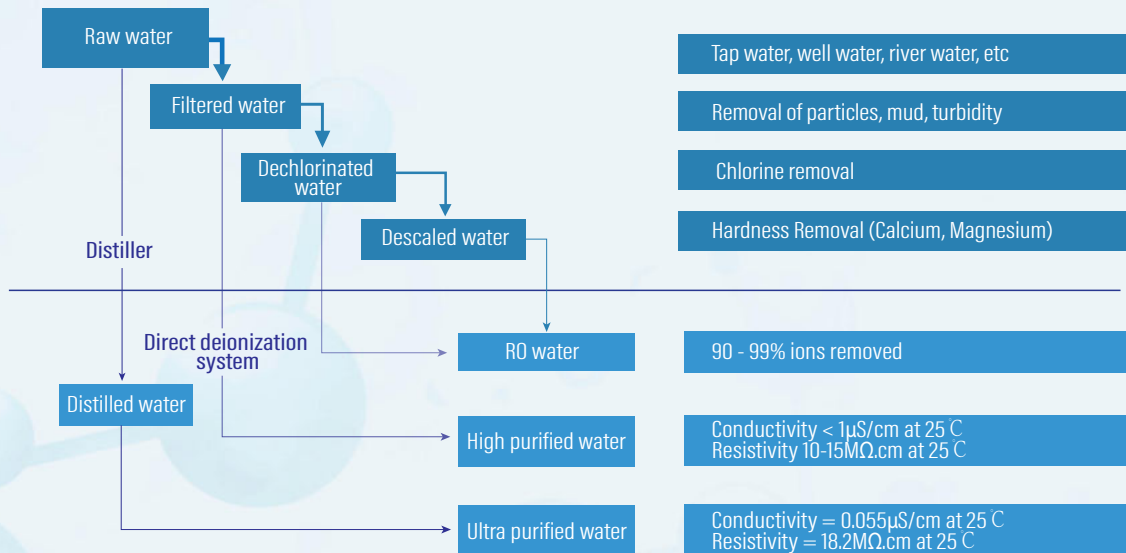
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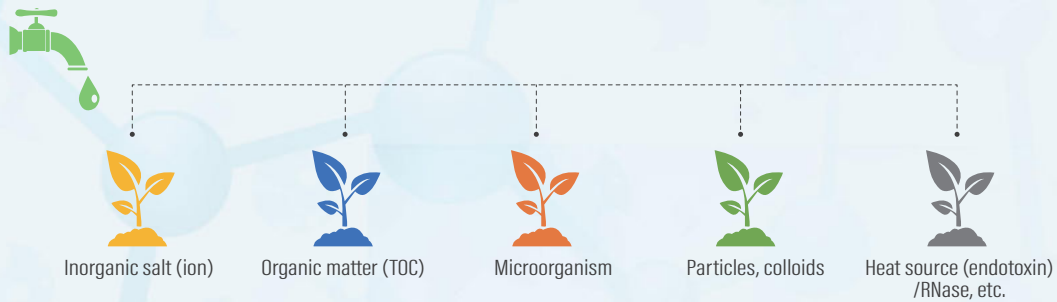
**TITAN**

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Upgraded Type I ultra purified water for optional	

## Water purification phase



## Pollutants in water



### Inorganic salt (ion)

Interfering element analysis experiments, such as: titration experiments, IC, AA, ICP-MS (ten times lower than the detection limit), affecting cell culture and other biochemical and molecular biology experiments: cadmium is still toxic to cells at a concentration of 0.1ppb, Generate scale or crystals

### Organic matter (TOC)

Encapsulate ion exchange resin, affect cell growth, interfere with HPLC (background, miscellaneous peaks...), nutrients for microbial growth, and generally affect molecular biology experiments

### Microorganism

Affect biological and molecular biology experiments such as cell culture experiments

### Particles, colloids

Block filters, disperse light, provide food and carriers for microorganisms

### Heat source (endotoxin)/RNase, etc.

Cell culture and molecular biology will be affected

### Gas:

The water also contains gas, but it has a very small impact on the experiment, and has a certain impact on individual optical experiments.

## Purification Technology

Pollutants	UF	AC+SPC	RO	DI	EDI	UV	UP	Distilled water
Ion	■	■	■	□	□	■	■	□
TOC	■	□	■	■	■	■	■	□
Particles, colloids	■	■	■	■	■	■	□	□
Bacteria, Endotoxin/RNase	■	■	■	■	■	■	□	□
Gas	■	■	■	■	■	■	■	□

Legend: ■ No removal, □ Removed all

DI-Resin      RO-Reverse osmosis      UF-Ultrafiltration      UP-Ultra purification  
 AC-Activated carbon      SPC-Silicon phosphate crystal      UV-Dual wave UV lamp      EDI-Electrodeionization

## Water system selection guide

Water Type	Application	Series
ASTM D1193 Type II water European pharmacopoeia purified water Japanese pharmacopoeia purified water ISO 3696 Grade 2 water JIS K 0577 A3 water Clinical Laboratory Reagent Water (CLSI)	Preparation of the buffer solution, microbial medium and reagents Cleaning materials (dishwasher), autoclave sterilizer, greenhouse Atomic absorption (depending on the resolution) Water peer crops Chemical industry (pure water) Pharmaceutical and cosmetic industry (purified water according to USP) Veterinary laboratory (purified water according to USP) Clinical analysis Salt fog room Climate room	<b>All-in-one system</b> Nova series: Nova EU10/EU15/EU20 Performa series: Performa EU10 Performa EU15/EU20 Classic series: Classic DU15/DU20/DU25 <b>Type II high purified water system</b> Performa series: Performa E10/E15/E20 Classic series: Classic D15 D20 D25
ASTM D1193 Type I water, Grade B European pharmacopoeia purified water in bulk Japanese pharmacopoeia purified water ISO 3696 Grade 1 water JIS K 0577 A4 water	Atomic absorption / ICP HPLC Ion chromatography GC-MS Molecular biology PCR Cell cultures DNA sequencing	<b>All-in-one system</b> Nova series: Nova EU10/EU15/EU20 Performa series: Performa EU10 Performa EU15/EU20 Classic series: Classic DU15/DU20/DU25 <b>Type I ultra purified water system</b> Nova series: Nova U Performa series: Performa U
ASTM D1193 Type II water European pharmacopoeia purified water Japanese pharmacopoeia purified water ISO 3696 Grade 2 water JIS K 0577 A3 water Clinical Laboratory Reagent Water (CLSI)	Quality laboratory purified feed water distributed by building pipeline Upgraded Type I ultra purified water for optional	<b>Titan series central high purified water system</b> Nova C300, Nova C500 Classic C300, Classic C500

### Standard Specification for the American Society of Testing and Materials (ASTM) D1193-91 reagent grade water

Parameters	Type I*	Type II**	Type III ***	Type IV
Maximum conductivity( $\mu\text{S}/\text{cm}$ at 25 °C)	0.056	1	4	5
Resistance: Electrical Min. ( $\text{M}\Omega\cdot\text{cm}$ at 25 °C)	18	1	0.25	0.2
PH at 25 °C	—	—	—	5-8
Maximum TOC ( $\mu\text{g}/\text{L}$ )	10	50	200	No restriction
Maximum sodium ( $\mu\text{g}/\text{L}$ )	1	5	10	50
Maximum silica ( $\mu\text{g}/\text{L}$ )	3	3	500	No restriction
Maximum chlorine ( $\mu\text{g}/\text{L}$ )	1	5	10	50

\* A membrane filter of 0.2 micron is required

\*\*Prepared by distillation

\*\*\*Requires a membrane filter of 0.45 $\mu\text{m}$

### 2006 CLSI Specification for Reagent Laboratory Water

Water Type	CLSI Specifications
CLRW (Clinical laboratory reagent water)	Maximum microbial content (CFU/mL) <10 Minimum resistivity 10 $\text{M}\Omega\cdot\text{cm}$ , 25°C Free of particulates >0.22 $\mu\text{m}$ Organic materials (TOC) <500 ppb

# Pretreatment module

## Three water ports

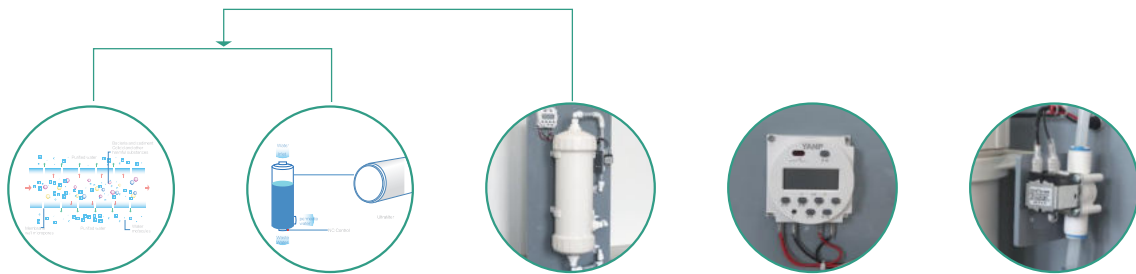
Pretreatment module is device to pre filter tap water before it goes to main system. Depends on the quality of inlet water, service life can reach 2-3 years.

**In the back of module are three ports: water inlet, filtered water outlet and waste water outlet**

When working, the waste water outlet port will be closed. Inlet water will pass through the ultrafiltration membrane and out from filtered water outlet. When washing program running, a solenoid valve will turn on, water will go through the cartridge by pass filtered water outlet, flush the impurity on the surface of membrane, the dirty water directly discharges from the waste water outlet.



## Module inside & Ultrafiltration cartridge



Ultrafiltration membrane

Ultrafiltration cartridge

Timer

Solenoid valve

### Ultrafiltration cartridge

10 nanometers pore size ultrafiltration membrane to remove completely colloids, particles, free chlorine and minerals

### Timer and Solenoid valve

The timer controls solenoid valve, can set washing times, factory default setting is once a day at 6 am for 10 minutes, or the system can be customized accordingly up to 15 times per day, every time 10 minutes.

### Example

Every morning, at 6 o'clock will start automatically a 10 minutes washing

program to make sure the water quality for your daily use. All waste water will be discharged, each time no more than 20L, but there is no need to worry about the waste. Considering the ratio of waste water of whole system is less than most brands, the waste water in RO module is 25% compared with 50% of others, while 75% water will be recycled, on the other hand, waste water in EDI Module just only 25%, so, the whole purification system, you will have 55% purified water, meanwhile, the lifetime of cartridges

and EDI module inside of the main machine will be extended.

**Total inlet : 100L per day**

Proseers purified water  $(100-20)*75\%*75\% = 45L$

**Others:**

Purified water  $100 * 50\% * 50\% = 25L$

### Feed water requirements

The quality of feed water will affect directly the quality of purified water and service life of equipment, if the tap water contains a high rate of hardness that do not meet the requirements, please use salty box to remove calcium ions and magnesium ion in advance.

# Three main purification cartridges

## Purification cartridges

### Pre-guard cartridge A

Filled with natural coconut shell activated carbon and silicon phosphate crystal.

### Pre-guard cartridge B

Filled with natural coconut shell activated carbon.

(These two cartridges will help to remove residual free chlorine, calcium ions and magnesium ions)

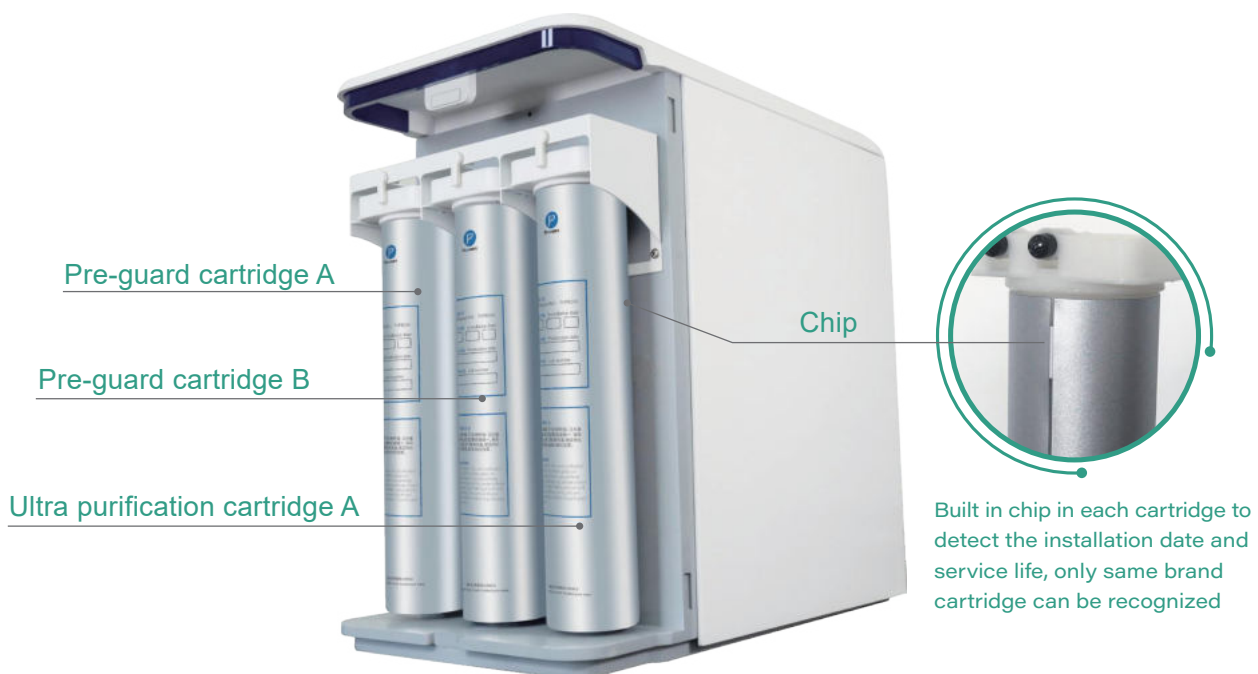
### Ultra purification cartridge A

Filled with electronic grade resin and medical grade artificial activated carbon.

Only equipped with all-in-one system and ultra purified water system to produce Type I water.

### How to detect the water quality ?

— Conductivity sensors equipped in four places to detect the water quality.



# Rapid installation of cartridges

—The Assembly and disassembly of cartridges is super easy, remove the cap and place it where it should be.



## Working capacity

Pre-guard cartridge A—25000L  
Pre-guard cartridge B—25000L  
Ultra purification cartridge A—15000L

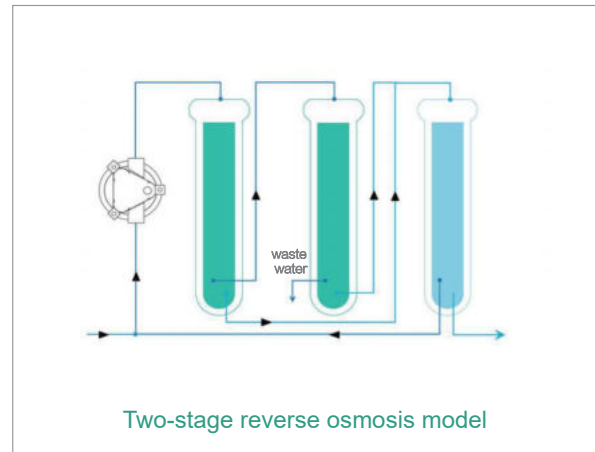
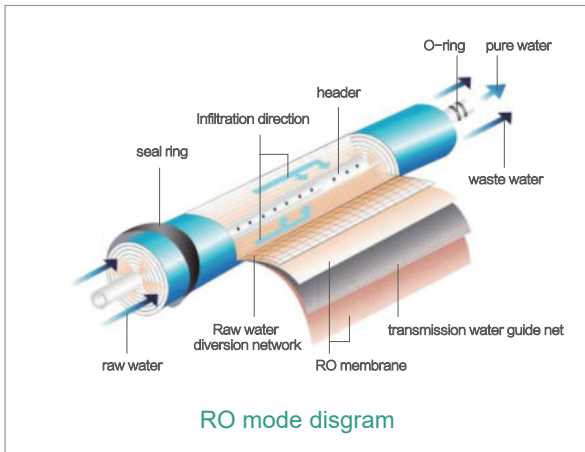




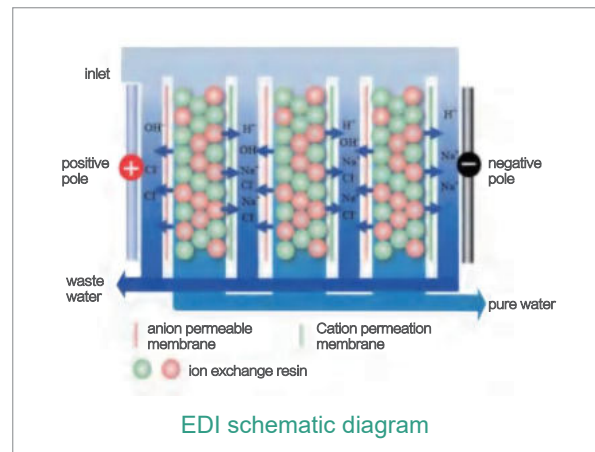
# Two-stage RO module



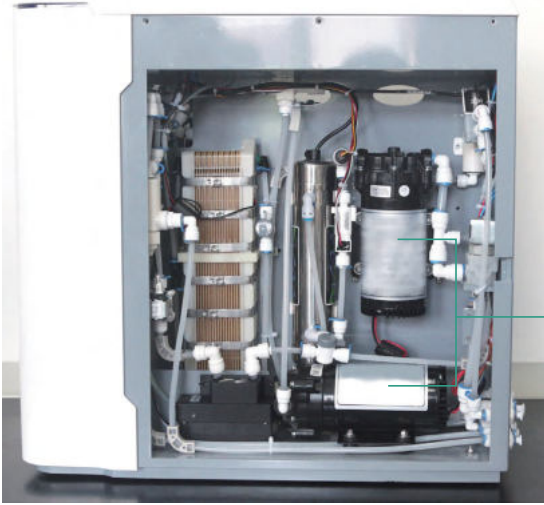
- Depends on feed water quality, our two-stage RO module service life can reach 2-3 years, and the conductivity of RO water will be less than  $5\mu\text{S}/\text{cm}$  which can protect the running of EDI module and prolong its service life. Ratio of waste water is only 25% with recycle technology.



# Electrodeionization (EDI) system



# Water circulation before collecting



## Water circulation before collecting

- When collect type II water, the water in water tank flows back to the host, passing through circulation pump and dual wavelength ultraviolet lamp (254 and 185 nm) then outlet from the dispenser.
- When collect type I water, the water in water tank flows back to the host, passing through circulation pump, dual wavelength ultraviolet lamp and ultra purification cartridge then outlet from the dispenser. Meanwhile, a little bit of type I water will be divided to TOC analyzer module to evaluate the purity.

## Water pumps

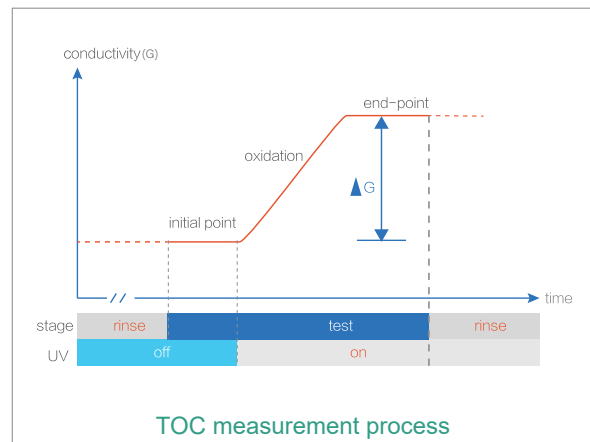
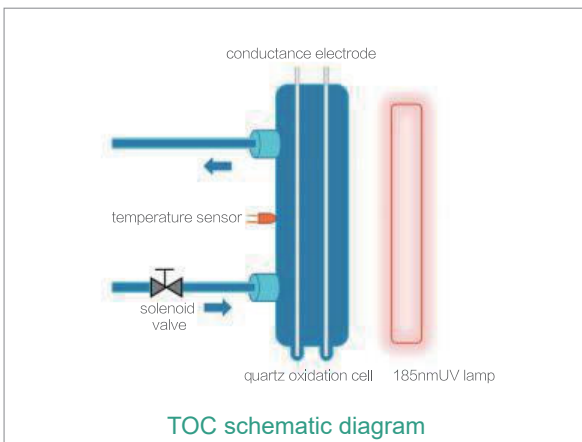
CE and NSF qualified water pumps, low noisy and stable working pressure.

## TOC analyzer

Total organic carbon (TOC) data will be shown on the display screen, evaluated by a built-in real on-line TOC analyzer module. TOC level of type I water is always less than 5ppb( $\mu\text{g/L}$ ).



## Dual wavelength UV lamp



# 60 liters PE water tank

- 254nm UV lamp, works 10 minutes every 5 hours to prevent growth of bacteria.
- 0.2µm inlet air filter to prevent air pollution.
- Pressure sensor to indicate the amount of water.
- Stepless water level adjustment on touch screen.



UV lamp



Air filter



Liquid level sensor



## Automatic wake-up program for RO and EDI

- When the purification system rests more than 24 hours, a wake-up program will start automatically to produce purified water in order to make sure the purification quality for your daily use.

## How to collect purified water?



- To collect Type II water by using water valve directly from the water tank



- Collect Type II and Type I water by using dispenser arms: dispense water by clicking the button to activate, by rotating the button to control the flow rate upto 2L/min, to stop dispensing by clicking the button again



- **Quantitative water dispense.** Click the flask icon, enter the amount in milliliters, save and press 'dispenser' to collect water, the collecting can be terminated by clicking "cancel"



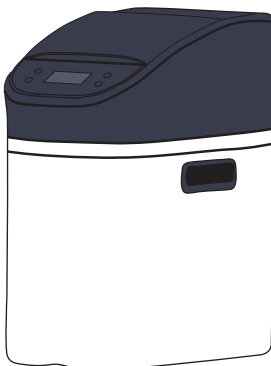
- **Foot pedal** frees your hands, flow rate upto 2L/minutus need be setted in advance by rotating the button of dispenser arm (Optional)

# Remote dispenser arms

Two remote dispenser arms, one for Type II high purified water and one for Type I ultra purified water. Mounted with TFT touch sc-reen for setting, operating and monitoring. The arm equipped with a point-of-use filter can move up and down, and it also can be rotated 360 degrees.



# Universal salt softener all laboratory use models



Control valve	Automatic
Regeneration mode	Flow time mixed type/time type
Volume	5L
Recommended flow	≥0.5T/H
Pressure	0.15-0.5MPa
voltage	220V 50Hz
Inlet and outlet size	3/4" and 1"
Drain pipe size	φ18mm
Salt valve	Yes
External dimension	230×450×485mm
Packing dimension	240×465×520mm

# Data record & WIFI service

## How to download data?

Built in using USB port to download the current data and historical data by connecting your USB drive



## Wifi function

Our Wifi function offers real-time remote monitoring service, in the settings menu, select wifi mode or 4G mode.

After connecting, users can check the running status of system at any time.



# Nova Zero-ion

**purification terminal and dispensing unit of Nova U and Nova EU series, providing ppt or sub-ppt ultrapure water for sensitive analyses such as trace and ultra-trace elemental analysis**

## Applications:

- ICP-MS/ nano UHPLC/ nano LC-MS/ LC-ESI- MS/ GF-AAS analyses
- Detection and measurement of elements at ppt and sub-ppt levels in samples
- Trace and ultra-trace elemental analyses
- Electronic chip flushing
- Environmental testing, drug analysis, forensic medicine, food and beverage industry, etc.



## Main features

Compact design occupies less space, simple dispenser unit can be placed in super clean area to reduce contamination. Equipped with NFC chip recognition, internet of things technology, online real time U-cloud remote monitoring.

## Trace analysis ultra-purification cartridge



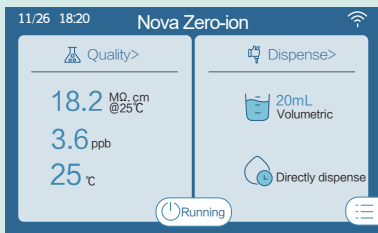
- Unique cartridge with patented electronica grade resin, easy to replace
- Brand-new waterway design, more loading capacity and stable water quality
- Unique connection design, stronger pressure resistance, better tightness

## Outlet pipe support

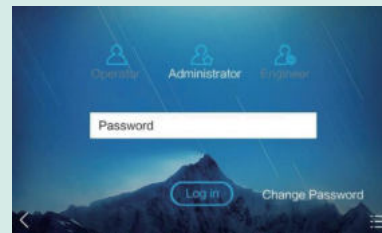


- Easy to place in any clean environment
- Integrated design, easy to clean, prevent the growth of bacteria
- Good chemical stability, suitable for any environmental conditions

## Intelligent human-computer interaction



- 5" LCD touch screen, animated icons, easy to operate



- Three-level access authorities, convenient laboratory management

ion_col	
Name	ion_col
Identification code	95437000
Installation date	2022-01-13
Running time	47Day
Volume	11000L

- Clear running status and information display

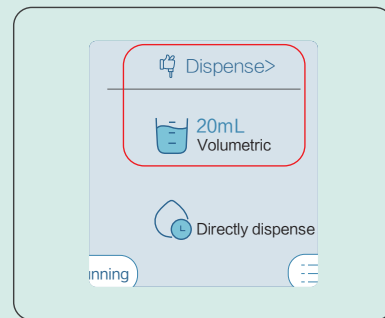


- Water quality report viewing and exporting function

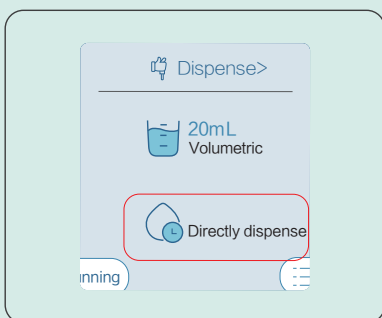
## Dispense control



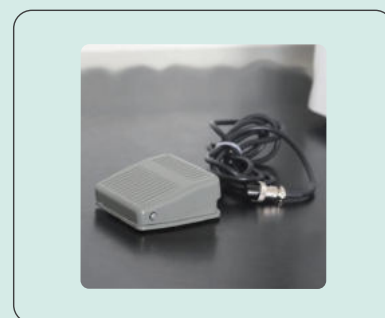
- Flow rate control by Type I water dispenser arm, up to 2L/min



- Quantitative water dispense



- Directly dispense by click the icon



- Foot pedal frees your hands

# Central high purified water system

—Titan series is central high purified water system including pre-treatment system, main system and water tank.



## Pre-treatment system include

- Raw water pump
- Sand carbon filter, filled with activated carbon with stable performance to effectively remove residual chlorine and organic matter.
- Dual treatment of salt tank and resin softener to reduce the water hardness and remove water scale.
- Ultrafiltration membrane, PVDF material, nano-level filtration, remove particles, silt, colloids, microorganisms, etc. to ensure the safety and efficiency of the back-end purification components.

## Main system include

- CE and NSF qualified high pressure water pump
- Reverse osmosis membrane, rejection rate 95% -99% to remove organic matter, ions and particles.
- EDI module
- Water distribution pump
- Microporous filter membrane pipeline filter to prevent pipeline pollution caused by microorganisms and blockage by debris
- Dual wavelength (254nm & 185nm) UV-lamp to remove microorganisms including bacterial spores and non-pathogenic microorganisms



## SUS 304 stainless steel water tank

- Standard volume is 500L, can be customized upto 1 ton, 1.5 tons, 2 tons, etc. Equipped with 254nm UV lamp and 0.2μm inlet air filter

## How to collect purified water?

- Water supply port, directly distribute the purified water into all inlet pipeline of building
- Purified water outlet for temporary water collecting



# —Nova-Smart



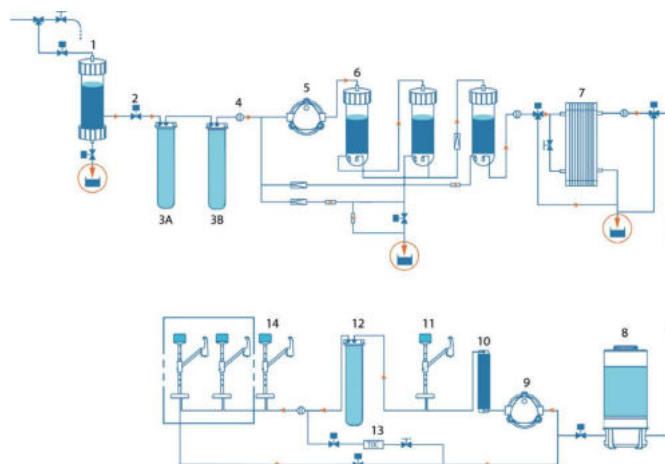
## Nova EU10 / Nova EU15 / Nova EU20

### Unique features

All-in-one system

- ⊙ All-in-one system for ASTM Type I & Type II water/Clinical laboratory reagent water (CLSI)
- ⊙ Real on-line TOC analyzer with 185nm UV-lamp inside
- ⊙ EDI module imported
- ⊙ Dual wavelength UV-lamp 254nm & 185nm
- ⊙ Two (Type I & Type II) remote water dispenser arms with touch screen display
- ⊙ U-cloud platform for remote monitoring (Wifi module)
- ⊙ USB access port for data logging

## Water Flow Chart



- |                                 |                              |                                |
|---------------------------------|------------------------------|--------------------------------|
| 1 Pre-treatment module          | 2 Solenoid valve             | 3A Pre-guard cartridge A       |
| 3B Pre-guard cartridge B        | 4 Conductivity electrode     | 5 Booster pump                 |
| 6 RO membrane                   | 7 EDI module                 | 8 Water tank                   |
| 9 Circulating pump              | 10 UV lamp 185 & 254 nm      | 11 Type II water dispenser arm |
| 12 Ultra purification cartridge | 13 Real on-line TOC analyzer |                                |
| 14 Type I water dispenser arm   |                              |                                |



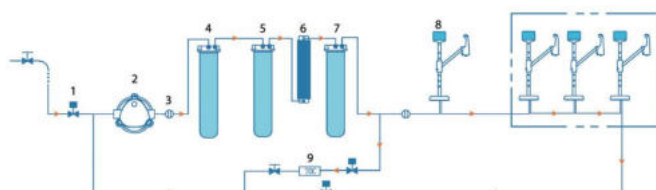
## Nova U

### Unique features

- ASTM Type I Ultra purified water system
- Real on-line TOC analyzer with 185nm UV-lamp inside
- Dual wavelength UV-lamp 254nm & 185nm
- One Type I remote water dispenser arm with touch screen display
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

### ASTM Type I Ultra purified water system

### Water Flow Chart



- 1 Solenoid valve
- 2 Circulating pump
- 3 Conductivity electrode
- 4 Pre purification cartridge A
- 5 Pre purification cartridge B
- 6 185 & 254nm UV lamp
- 7 Ultra purification cartridge
- 8 Type I water dispenser arm
- 9 Real on-line TOC analyzer

Main configurations	All-in-one system			Type I water
	Nova EU10	Nova EU15	Nova EU20	Nova U
Pre-treatment module		YES		NO
Main host		YES		YES
Pre-guard cartridge A		YES		NO
Pre-guard cartridge B		YES		NO
Ultra purification cartridge A*		YES		YES
Two-stage Reverse osmosis		YES		NO
EDI module imported		YES		NO
Pre purification cartridge A		NO		YES
Pre purification cartridge B		NO		YES
Dual wavelength (254nm & 185nm) UV-lamp		YES		YES
Real on-line TOC analyzer		YES		YES
Type I Remote water dispenser arm with touch screen display		YES		YES
Type II Remote water dispenser arm with touch screen display		YES		NO
2M water piping from main unit to water tank & water dispenser		YES		YES
60L water tank of Type II water, stepless water level sensor		YES		NO
254nm UV light of water tank		YES		NO
Inlet air filter of water tank 0.2μm		YES		NO
Water leakage protection sensor		YES		YES
Point-of-use filter 0.22μm		YES		YES

\*Optional ultra purification cartridge B special for semiconductor industry that has higher deionization requirements

Model	All-in-one system			Type I water	
	Nova EU10	Nova EU15	Nova EU20	Nova U	
<b>Feed water requirements</b>					
Source	Potable tap water			Type II water/RO	
Conductivity	<2000µS/cm			<100µS/cm	
TOC	<1ppm			<50ppb	
Hardness*	<450ppm as CaCO <sub>3</sub>			0-1ppm	
Pressure	0.1~0.4MPa (7-72psi)			0.1~0.4MPa (7-72psi)	
Temperature	5~45 C			5~45 C	
PH	4-10			7/6-8	
<b>Type II high purified water</b>					
Resistivity at 25 C **	15MΩ.cm; typically 10-15MΩ.cm				
Conductivity at 25 C **	0.067µS/cm; typically 0.1µS/cm				
TOC	<30ppb(µg/L)				
Particulates with size > 0.22µm***	No particles				
Endotoxin (Pyrogens)***	<0.001EU/mL				
Bacteria***	<0.01cfu/mL (<10cfu/L)				
Rnase***	<1pg/mL				
Dnase***	<3pg/mL				
Proteases***	<0.15µg/mL				
RO rejection	≥99%				
EDI ion rejection	≥99%				
Production flow rate	10L/H	15L/H	20L/H	N/A	
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate				
Quantitative water dispense range	0.01L ~ 60L				
<b>Type I ultra purified water</b>					
Resistivity at 25 C	18.2MΩ.cm				
Conductivity at 25 C	0.055µS/cm				
TOC	≤2ppb(µg/L)				
Particulates with size > 0.22µm	No particles				
Endotoxin (Pyrogens)	<0.001EU/mL				
Bacteria	<0.01cfu/mL (<10cfu/L)				
Rnase/Dnase	Free				
Proteases	<0.15µg/mL				
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate				
Quantitative water dispense range	0.01L ~ 60L				
<b>Electrical requirement</b>					
Electrical voltage	110V/220V ±10%				
Electrical frequency	50Hz/60Hz				
Power	<135W				
<b>Size information</b>					
<b>Net Weight</b>					
Pre-treatment module	8.5kg			N/A	
Main host	32kg	32.7kg	33.2kg	18.9kg	
Water dispenser arm	5.2kg/unit				
30L Water tank	9kg			N/A	
60L Water tank	10.66kg				
100L Water tank	12.2kg				
<b>External Dimension (WxDxH)</b>					
Pre-treatment module	270x280x566 (mm)			N/A	
Main host	328x520x540 (mm)			328x410x520 (mm)	
Water dispenser arm	490x270x790 (mm) /unit				
30L Water tank	390x390x690 (mm)			N/A	
60L Water tank	390x390x930 (mm)				
100L Water tank	390x390x1235 (mm)				
<b>Packing information</b>					
<b>Gross Weight</b>					
Pre-treatment module	9.8kg			N/A	
Main host	42.8kg	43.5kg	44kg	32.9kg	
Water dispenser arm	7.9kg/unit				
30L Water tank	12.4kg			N/A	
60L Water tank	14kg				
100L Water tank	15.6kg				
<b>Packing Dimension (WxDxH)</b>					
Pre-treatment module	350x360x670 (mm)			N/A	
Main host	510x670x750 (mm)			510x670x750 (mm)	
Water dispenser arm	840x530x290 (mm) /unit				
30L Water tank	520x520x780 (mm)			N/A	
60L Water tank	520x520x1020 (mm)				
100L Water tank	520x520x1325 (mm)				

\*If the tap water contains a high rate of calcium ions and magnesium ion which do not meet the requirement, please use salty box to remove part of calcium ions and magnesium ion in advance

\*\*Resistivity typically 10-15MΩ.cm at 25 C, Conductivity typically 0.1µS/cm, at 25 C

\*\*\*Feed water quality should meet above requirements and purified water through the remote water dispenser with end 0.22µm filter

# —Nova Zero-ion



## Nova Zero-ion

### Unique features

- Equip with Nova EU and Nova U only
- Unique cartridge with patented electronica grade resin
- U-cloud platform for remote monitoring
- USB access port for data logging

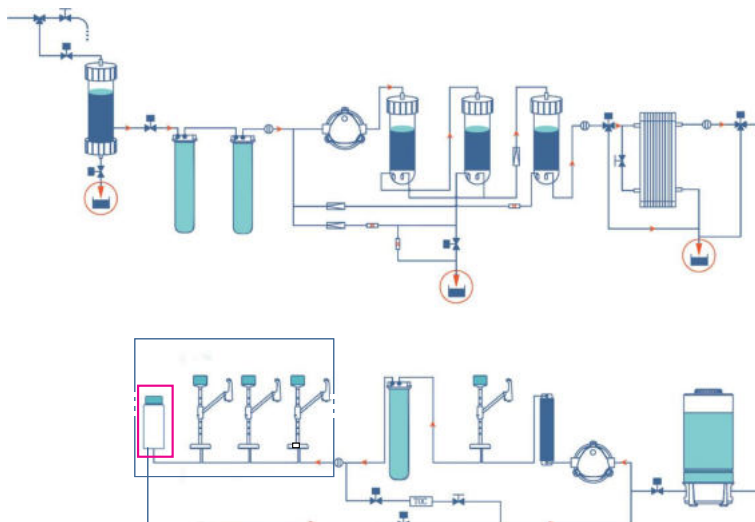
ppt or sub-ppt ultra purified water

Feed water*	
Resistivity at 25 °C	18.2MΩ.cm
Total Organic Carbon (TOC)	≤5ppb(μg/L)
Performance	
Resistivity at 25 °C	18.2MΩ.cm
Total Organic Carbon (TOC)	≤2ppb(μg/L)
Ion content**	<0.1ppt
Flow rate	Up to 2L/min, stepless control
Quantitative water dispense range	0.01L-60L
Size information	
Dimensions (W×D×H)	180×217×510mm
Net weight	6.9kg
Length of outlet pipe	Standard 2m, customized length for optional
Outlet pipe support dimensions (W×D×H)	80×201.5×400mm
Packing information	
Package dimensions (W×D×H)	220×451×563mm
Gross weight	8.5kg

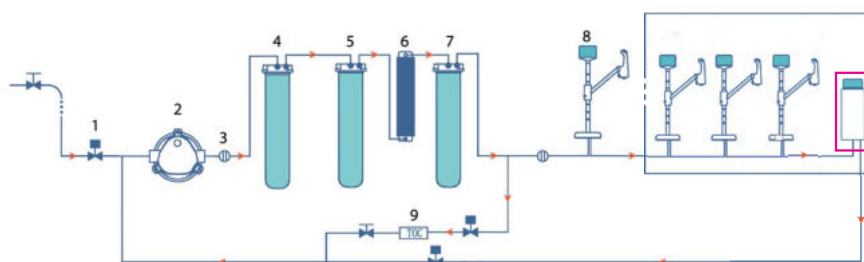
\*Ultra pure water/Type I water by Nova series

\*\*Verified by end user, analytical technique of trace elements

## Nova EU



## Nova U



### Elemental detection data

Element	Unit	Detection limit	Sample
Calcium (Ca)	µg/L	6.61	<6.61
Iron (Fe)	µg/L	0.82	<0.82
Chromium (Cr)	µg/L	0.11	<0.11
Barium (Ba)	µg/L	0.2	<0.2
Vanadium (V)	µg/L	0.08	<0.08
Cadmium (Cd)	µg/L	0.05	<0.05
Cobalt (Co)	µg/L	0.03	<0.03
Gallium (Ga)	µg/L	0.02	<0.02
Potassium(K)	µg/L	4.5	<4.5
Aluminium (Al)	µg/L	1.15	<1.15
Magnesium (Mg)	µg/L	1.94	<1.94
Manganese (Mn)	µg/L	0.12	<0.12
Molybdenum (Mo)	µg/L	0.06	<0.06
Sodium (Na)	µg/L	6.36	<6.36
Nickel (Ni)	µg/L	0.06	<0.06
Boron (Bi)	µg/L	1.25	<1.25
Beryllium (Be)	µg/L	0.04	<0.04
Lead (Pb)	µg/L	0.09	<0.09
Arsenic (As)	µg/L	0.12	<0.12
Strontium (Sr)	µg/L	0.29	<0.29
Thallium (Tl)	µg/L	0.02	<0.02
Titanium (Ti)	µg/L	0.46	<0.46
Antimony (Sb)	µg/L	0.15	<0.15
Copper (Cu)	µg/L	0.08	<0.08
Selenium (Se)	µg/L	0.41	<0.41
Tin (Sn)	µg/L	0.08	<0.08
Zinc (Zn)	µg/L	0.67	<0.67
Sliver (Ag)	µg/L	0.04	<0.04

Data obtained courtesy of SGS-CSTC Standards Technical Services (Qingdao) Co., Ltd

# —Performa



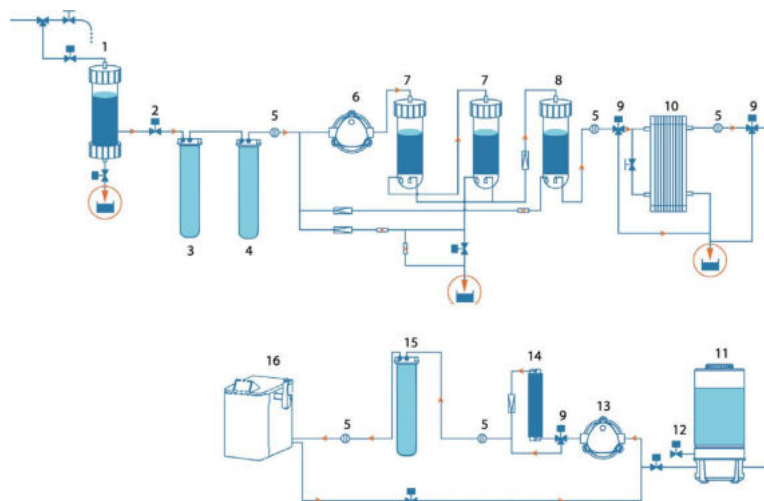
## Performa EU10 / Performa EU15 / Performa EU20

### Unique features

### All-in-one system

- All-in-one system for ASTM Type I & Type II water/Clinical laboratory reagent water (CLSI)
- Integrated water dispenser arm
- On line real time TOC monitoring
- Dual wavelength UV-lamp 254nm & 185nm
- China made EDI self-developed
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

### Water Flow Chart



- |                               |                          |                                 |
|-------------------------------|--------------------------|---------------------------------|
| 1 Pre-treatment module        | 2 Solenoid valve         | 3 Pre-guard cartridge A         |
| 4 Pre-guard cartridge B       | 5 Conductivity electrode | 6 Booster pump                  |
| 7 One-stage RO membrane       | 8 Two-stage RO membrane  | 9 TEE Solenoid valve            |
| 10 EDI module                 | 11 Water tank            | 12 Type II water outlet         |
| 13 Circulating pump           | 14 UV lamp 185 & 254 nm  | 15 Ultra purification cartridge |
| 16 Type I water dispenser arm |                          |                                 |



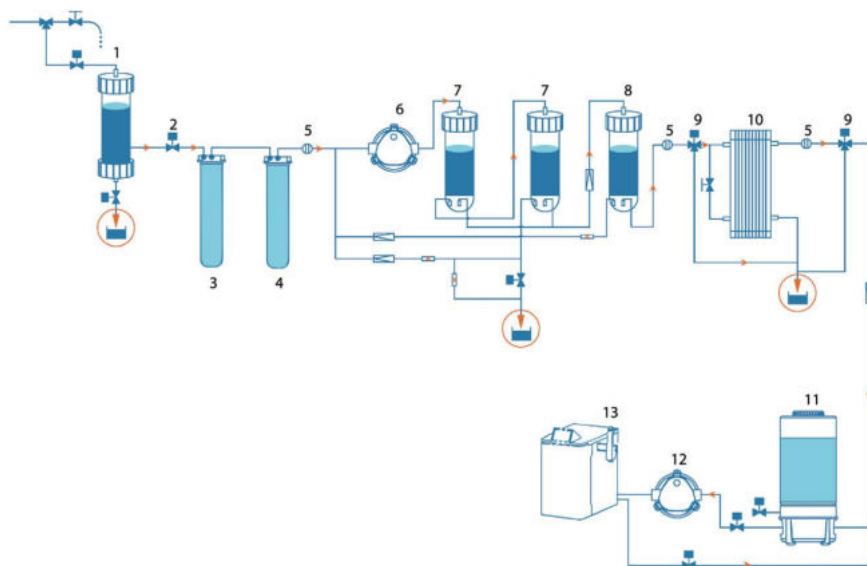
## Performa E10 / Performa E15 / Performa E20

### Unique features

- Integrated water dispenser arm
- China made EDI self-developed
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

ASTM Type II high purified water system  
Clinical laboratory reagent water (CLSI)

### Water Flow Chart



- |                                |                          |                         |
|--------------------------------|--------------------------|-------------------------|
| 1 Pre-treatment module         | 2 Solenoid valve         | 3 Pre-guard cartridge A |
| 4 Pre-guard cartridge B        | 5 Conductivity electrode | 6 Booster pump          |
| 7 One-stage RO membrane        | 8 Two-stage RO membrane  | 9 TEE Solenoid valve    |
| 10 EDI module                  | 11 Water tank            | 12 Circulating pump     |
| 13 Type II water dispenser arm |                          |                         |



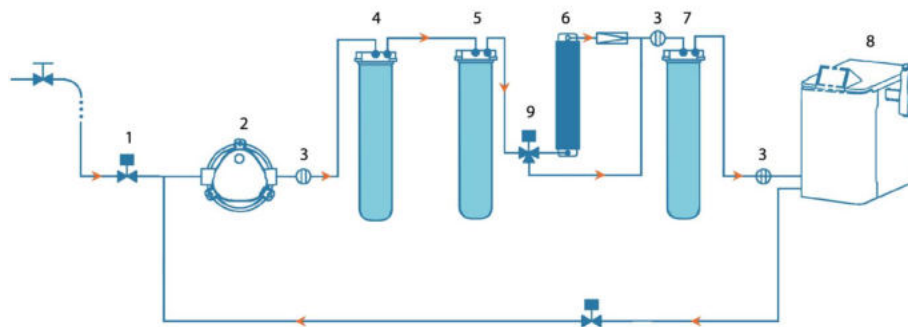
## Performa U

### Unique features

- Integrated water dispenser arm
- On line real time TOC monitoring
- Dual wavelength UV-lamp 254nm & 185nm
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

ASTM Type I Ultra purified water system

### Water Flow Chart



- 1 Solenoid valve
- 2 Circulating pump
- 3 Conductivity electrode
- 4 Pre purification cartridge A
- 5 Pre purification cartridge B
- 6 UV lamp 185 & 254 nm
- 7 Ultra purification cartridge
- 8 Type I water dispenser arm
- 9 TEE Solenoid valve

Main configurations	All-in-one system			Type II water			Type I water
	Performa EU10	Performa EU15	Performa EU20	Performa E10	Performa E15	Performa E20	Performa U
Pre-treatment module	YES	YES	YES	YES	YES	YES	NO
Main host	YES	YES	YES	YES	YES	YES	YES
Pre-guard cartridge A	YES	YES	YES	YES	YES	YES	NO
Pre-guard cartridge B	YES	YES	YES	YES	YES	YES	NO
Pre purification cartridge A	NO	NO	NO	NO	NO	NO	YES
Pre purification cartridge B	NO	NO	NO	NO	NO	NO	YES
Two-stage Reverse osmosis	YES	YES	YES	YES	YES	YES	NO
EDI module self-developed	YES	YES	YES	YES	YES	YES	NO
60L water tank; stepless water level sensor	YES	YES	YES	YES	YES	YES	NO
254nm UV light of water tank	YES	YES	YES	YES	YES	YES	NO
Inlet air filter of water tank 0.2µm	YES	YES	YES	YES	YES	YES	NO
Water leakage protection sensor	YES	YES	YES	YES	YES	YES	YES
Dual wavelength (254nm & 185nm) UV-lamp	YES	YES	YES	NO	NO	NO	YES
TOC monitoring	YES	YES	YES	NO	NO	NO	YES
Ultra purification cartridge A	YES	YES	YES	NO	NO	NO	YES
One integrated type I water dispenser arm	YES	YES	YES	YES	YES	YES	YES
1M water piping from main unit to water dispenser arm	YES	YES	YES	YES	YES	YES	YES
Point-of-use filter 0.22µm	YES	YES	YES	YES	YES	YES	YES

\* Optional ultra purification cartridge B special for semiconductor industry that has higher deionization requirements



Model	All-in-one system			Type II water			Type I water			
	Performa EU10	Performa EU15	Performa EU20	Performa E10	Performa E15	Performa E20	Performa U			
<b>Feed water requirements</b>										
Source	Potable tap water						Type II water/RO			
Conductivity	<2000µS/cm						<100µS/cm			
TOC	<1ppm						< 50ppb			
Hardness*	<450ppm as CaCO <sub>3</sub>						0-1ppm			
Pressure	0.1~0.4Mpa (7-72psi)						0.1~0.4Mpa (7-72psi)			
Temperature	5~45 C						5~45 C			
PH	4-10						7/6-8			
<b>Type II high purified water</b>										
Resistivity at 25 C **	15MΩ.cm; typically 10-15MΩ.cm						N/A			
Conductivity at 25 C **	0.067µS/cm; typically 0.1µS/cm									
TOC	<30ppb(µg/L)									
Particulates with size > 0.22µm***	No particles									
Endotoxin (Pyrogens)***	<0.001EU/mL									
Bacteria***	<0.01cfu/mL (<10cfu/L)									
Rnase***	<1pg/mL									
Dnase***	<3pg/mL									
Proteases***	<0.15µg/mL									
RO rejection	≥99%									
EDI ion rejection	≥99%									
Production flow rate	10L/H	15L/H	20L/H	10L/H	15L/H	20L/H				
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate									
Quantitative water dispense range	10mL ~ 60L									
<b>Type I ultra purified water</b>										
Resistivity at 25 C	18.2MΩ.cm			N/A			18.2MΩ.cm			
Conductivity at 25 C	0.055µS/cm						0.055µS/cm			
TOC	≤2ppb(µg/L)						≤2ppb(µg/L)			
Particulates with size > 0.22µm	No particles						No particles			
Endotoxin (Pyrogens)	<0.001EU/mL						<0.001EU/mL			
Bacteria	<0.01cfu/mL (<10cfu/L)						<0.01cfu/mL (<10cfu/L)			
Rnase/Dnase	Free						Free			
Proteases	<0.15µg/mL						<0.15µg/mL			
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate						Maximum 2L/min, stepless control of flow rate			
Quantitative water dispense range	0.01L ~ 60L						0.01L ~ 60L			
<b>Electrical requirement</b>										
Electrical voltage	110V/220V ±10%									
Electrical frequency	50Hz/60Hz									
Power	<135W									
<b>Size information</b>										
<b>Net Weight</b>										
Pre-treatment module	8.5kg						N/A			
Main host with dispenser arm	29.6kg	30.3kg	30.8kg	27.7kg	28.4kg	28.9kg	20kg			
30L Water tank	9kg						N/A			
60L Water tank	10.66kg									
100L Water tank	12.2kg									
<b>External Dimension (WxDxH)</b>										
Pre-treatment module	270x280x566 (mm)						N/A			
Main host	328x540x600 (mm)						328x410x600 (mm)			
Integrated dispenser arm	42x85.5x231.5 (mm)						42x85.5x231.5 (mm)			
30L Water tank	390x390x690 (mm)						N/A			
60L Water tank	390x390x930 (mm)									
100L Water tank	390x390x1235 (mm)									
<b>Packing information</b>										
<b>Gross Weight</b>										
Pre-treatment module	9.8kg						34kg			
Main host with dispenser arm	40.4kg	41.1kg	41.6kg	39.7kg	40.4kg	40.9kg				
30L Water tank	12.4kg									
60L Water tank	14kg									
100L Water tank	15.6kg						N/A			
<b>Packing Dimension (WxDxH)</b>										
Pre-treatment module	350x360x670 (mm)						N/A			
Main host with dispenser arm	510x670x800 (mm)						510x670x800 (mm)			
30L Water tank	520x520x780 (mm)						N/A			
60L Water tank	520x520x1020 (mm)									
100L Water tank	520x520x1325 (mm)									

\*If the tap water contains a high rate of calcium ions and magnesium ion which do not meet the requirement, please use salty box to remove part of calcium ions and magnesium ion in advance

\*\*Resistivity typically 10-15MΩ.cm at 25 C, Conductivity typically 0.1µS/cm, at 25 C

\*\*\*Feed water quality should meet above requirements and purified water through the remote water dispenser with end 0.22µm filter

# —Classic



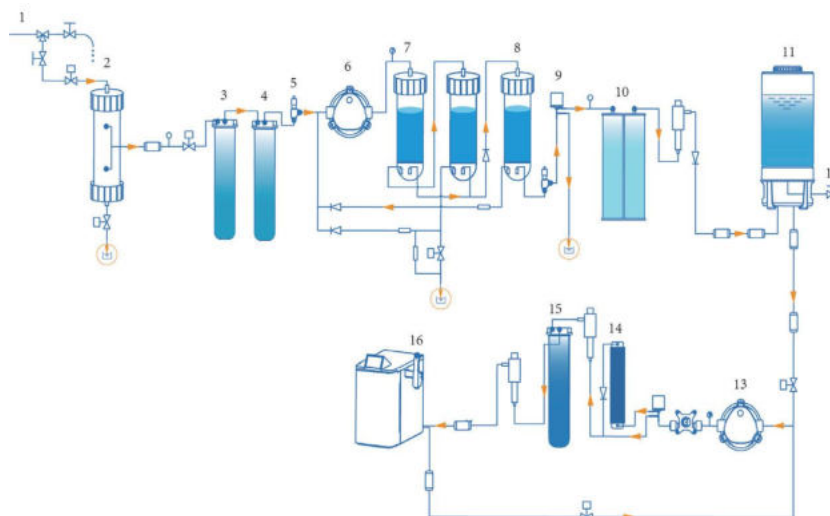
## Classic DU15 / Classic DU20 / Classic DU25

### Unique features

All-in-one system

- ASTM Type I & Type II water/Clinical laboratory reagent water (CLSI)
- On line real time TOC monitoring
- Dual wavelength UV-lamp 254nm & 185nm
- U-cloud platform for remote monitoring (Wifi module)
- DI resin module
- USB access port for data logging

### Water Flow Chart



- |                               |                          |                                 |
|-------------------------------|--------------------------|---------------------------------|
| 1 Pre-treatment module        | 2 Solenoid valve         | 3 Pre-guard cartridge A         |
| 4 Pre-guard cartridge B       | 5 Conductivity electrode | 6 Booster pump                  |
| 7 One-stage RO membrane       | 8 Two-stage RO membrane  | 9 TEE Solenoid valve            |
| 10 DI resin module            | 11 Water tank            | 12 Type II water outlet         |
| 13 Circulating pump           | 14 185 & 254 nm UV lamp  | 15 Ultra purification cartridge |
| 16 Type I water dispenser arm |                          |                                 |



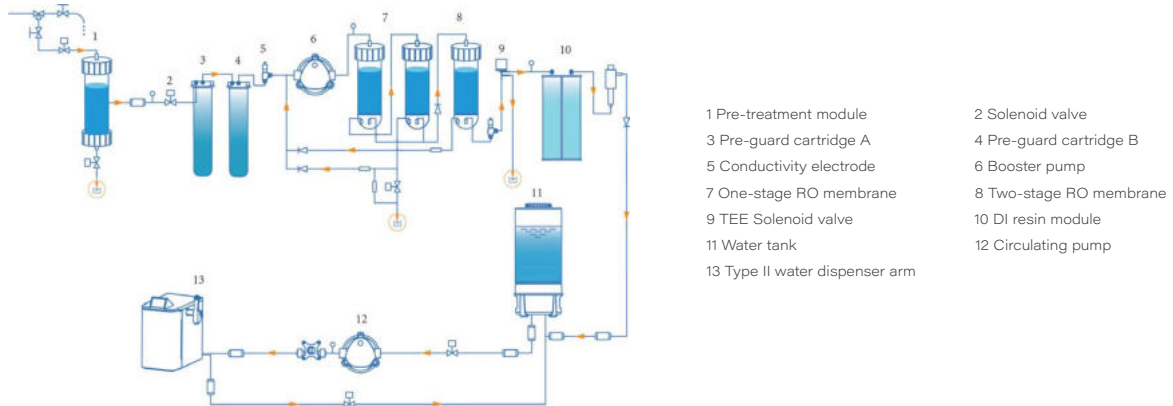
Classic D15 / Classic D20 / Classic D25

Unique features

- Integrated water dispenser arm
- U-cloud platform for remote monitoring (Wifi module)
- DI resin module
- USB access port for data logging

ASTM Type II high purified water system  
Clinical laboratory reagent water (CLSI)

Water Flow Chart



Main configurations	All-in-one system			Type II water		
	DU15	DU20	DU25	D15	D20	D25
Pre-treatment module		YES			YES	
Main host		YES			YES	
Pre-guard cartridge A		YES			YES	
Pre-guard cartridge B		YES			YES	
Two-stage Reverse Osmosis		YES			YES	
DI resin		YES			YES	
60L water tank; stepless water level sensor		YES			YES	
254nm UV light of water tank		YES			YES	
Inlet air filter of water tank		YES			YES	
Water leakage protection sensor		YES			YES	
TOC monitoring		YES			NO	
Dual wavelength (254nm & 185nm )UV-lamp		YES			NO	
Ultra purification cartridge A		YES			NO	
One integrated water dispenser arm		YES			YES	

\*Optional ultra purification cartridge B special for semiconductor industry that has higher deionization requirements

Model	All-in-one system			Type II water		
	DU15	DU20	DU25	D15	D20	D25
<b>Feed water requirement</b>						
Source	Potable tap water					
Conductivity	< 2000µS/cm					
TOC	< 1ppm					
Hardness*	< 450ppm as CaCO <sub>3</sub>					
Pressure	0.1~0.4Mpa (7-72psi)					
Temperature	5~45 C					
PH	4-10					
<b>Type II high purified water</b>						
Resistivity at 25 C**	> 8MΩ.cm; typically 10-15MΩ.cm					
Conductivity at 25 C**	Typically 0.1µS/cm					
TOC	<30ppb(µg/L)					
Particulates with size > 0.22µm***	<1pc/µL					
Endotoxin (Pyrogens)***	<0.001EU/mL					
Bacteria***	<0.01cfu/mL(<10cfu/L)					
Rnase***	<1pg/mL					
Dnase***	<5pg/mL					
Proteases***	<0.15µg/mL					
RO rejection	≥99%					
DI ion rejection	≥99%					
Production flow rate	15L/H	20L/H	25L/H	15L/H	20L/H	25L/H
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate					
Quantitative water dispense range	0.01L ~ 60L					
<b>Type I ultra purified water</b>						
Resistivity at 25 C	18.2MΩ.cm			N/A		
Conductivity at 25 C	0.055µS/cm					
TOC	≤2ppb(µg/L)					
Particulates with size > 0.22µm	No particles					
Endotoxin (Pyrogens)	<0.001EU/mL					
Bacteria	<0.01cfu/mL (<10cfu/L)					
Rnase/Dnase	Free					
Proteases	<0.15µg/mL					
Manual control water flow rate	Maximum 2L/min, stepless control of flow rate					
Quantitative water dispense range	0.01L ~ 60L					
<b>Electrical requirement</b>						
Electrical voltage	110V/220V ±10%					
Electrical frequency	50Hz/60Hz					
Power	135W					
<b>Size information</b>						
Net Weight						
Pre-treatment module	8.5kg					
Main host with dispenser arm	28.4kg	29.1kg	29.6kg	26.5kg	27.2kg	27.7kg
30L Water tank	9kg					
60L Water tank	10.66kg					
100L Water tank	12.2kg					
<b>External Dimension (WxDxH)</b>						
Pre-treatment module	270x280x566 (mm)					
Main host	328x540x600 (mm)					
Integrated dispenser arm	42x85.5x231.5 (mm)					
30L Water tank	390x390x690 (mm)					
60L Water tank	390x390x930 (mm)					
100L Water tank	390x390x1235 (mm)					
<b>Packing information</b>						
<b>Gross Weight</b>						
Pre-treatment module	9.8kg					
Main host with dispenser arm	39.2kg	39.9kg	40.4kg	38.5kg	39.2kg	39.7kg
30L Water tank	12.4kg					
60L Water tank	14kg					
100L Water tank	15.6kg					
<b>Packing Dimension (WxDxH)</b>						
Pre-treatment module	350x360x670 (mm)					
Main host with dispenser arm	510x670x800 (mm)					
30L Water tank	520x520x780 (mm)					
60L Water tank	520x520x1020 (mm)					
100L Water tank	520x520x1325 (mm)					

\* If the tap water contains a high rate of calcium ions and magnesium ion which do not meet the requirement, please use salty box to remove part of calcium ions and magnesium ion in advance

\*\* Resistivity typically 10-15MΩ.cm at 25 C , Conductivity typically 0.1µS/cm, at 25 C

\*\*\* Feed water quality should meet above requirements and purified water through the remote water dispenser with end 0.22µm filter



## Nova C300 / Nova C500 / Classic C300 / Classic C500

### Nova-Unique features

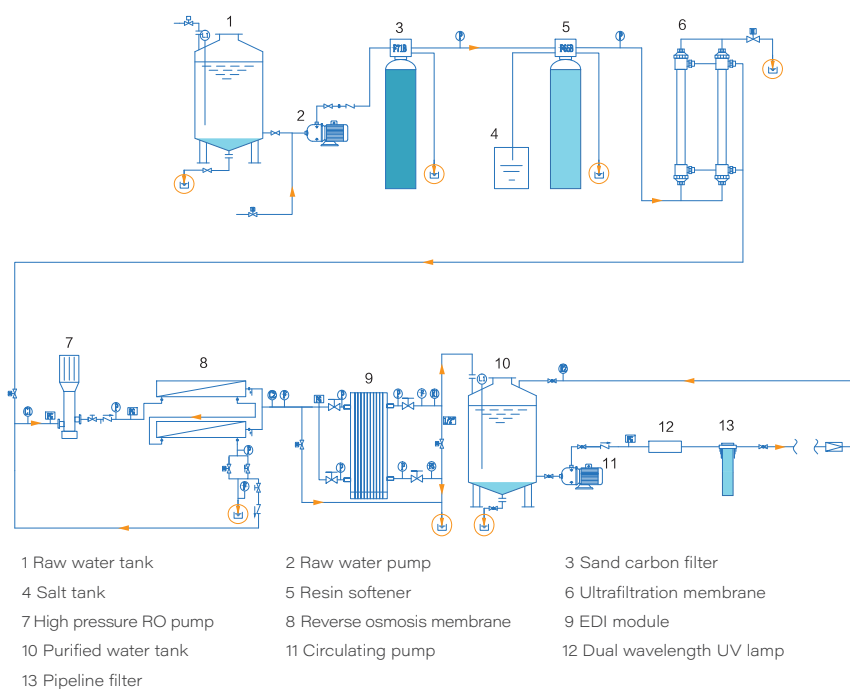
- EDI and water pumps original imported
- ASTM Type II / Type I purified water system
- Pre-treatment module
- 500L stainless steel water tank
- Productivity rate 300L/500L
- TFT touch screen controller
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

### Classic-Unique features

- China made high quality customized EDI and pumps
- ASTM Type II / Type I purified water system
- Pre-treatment module
- 500L stainless steel water tank
- Productivity rate 300L/500L
- TFT touch screen controller
- U-cloud platform for remote monitoring (Wifi module)
- USB access port for data logging

Central high purified water system

## Water Flow Chart



Main configurations		Central high purified water system			
		Nova C300	Nova C500	Classic C300	Classic C500
Raw water tank		<ul style="list-style-type: none"> <li>● All water pumps are original imported, qualified by CE and NSF</li> <li>● EDI imported</li> </ul>		<ul style="list-style-type: none"> <li>● China made high quality water pump</li> <li>● EDI self-developed</li> </ul>	
Pre-treatment module	Raw water pump				
	Sand carbon filter				
	Salt tank and Resin softener				
Main system	Ultrafiltration membrane				
	High pressure water pump				
	Reverse osmosis membrane				
	EDI module				
	Water distribution pump				
500L Stainless steel water tank	Microporous filter membrane pipeline filter				
	Dual wavelength (254nm & 185nm) UV- lamp				
	254nm UV light				
	0.2μm inlet air filter				

\*Please contact for more customized water tank: one ton, one and half tons, two tons, etc

\*\* If needed, we will help to design installation building pipeline

▲ *Upgraded Type I ultra purified water system equipped with ultrafiltration membrane and TOC module (optional)*

Model		Central high purified water system			
		Nova C300	Nova C500	Classic C300	Classic C500
Feed water requirement	Source	Potable tap water			
	Conductivity	<2000μS/cm			
	TOC	<1ppm			
	Hardness*	<450ppm as CaCO <sub>3</sub>			
	Pressure	0.1~0.4Mpa (7-72psi)			
	Temperature	5~45 C			
	PH	4-10			
Specifications	Resistivity at 25 C **	>8MΩ.cm; typically 10-15MΩ.cm			
	Conductivity at 25 C **	0.125μS/cm; typically 0.1μS/cm			
	TOC	< 30ppb(μg/L)			
	Particulates with size>0.22μm****	< 1pc/μL			
	Bacteria****	<0.01cfu/mL(<10cfu/L)			
	Rnase****	<1pg/mL			
	Dnase****	<5pg/mL			
	Proteases****	<0.15μg/mL			
	RO rejection	≥99%			
	EDI ion rejection	≥99%			
	Flow rate***	Instantaneous demand 500-1000L/H			
Production rate	300L/H	500L/H	300L/H	500L/H	
Electrical requirement	Electrical voltage	110V/220V ±10%			
	Electrical frequency	50Hz/60Hz			
	Power	220V			
Net weight	Pre-treatment module	200kgs			
	Main host	380kgs			
	500L Water tank	57kgs			
External dimension (HxWxL)	Pre-treatment module	1500x790x660(mm)			
	Main host	1750x1150x780(mm)			
	500L Water tank	2150x700x700(mm)			
	Pipeline connection	3/4 inch			
Packing gross weight	Pre-treatment module	240kgs			
	Main host	430kgs			
	500L water tank	57.5kgs			
Packing dimension (HxWxL)	Pre-treatment module	1650x840x710(mm)			
	Main host	1900x1200x830(mm)			
	500L water tank	2300x750x750(mm)			

\* If the tap water contains a high rate of calcium ions and magnesium ion which do not meet the requirement, please use salty box to remove part of calcium ions and magnesium ion in advance

\*\* Resistivity Typically 10-15MΩ.cm at 25 C, Conductivity typically 0.1μS/cm, at 25 C

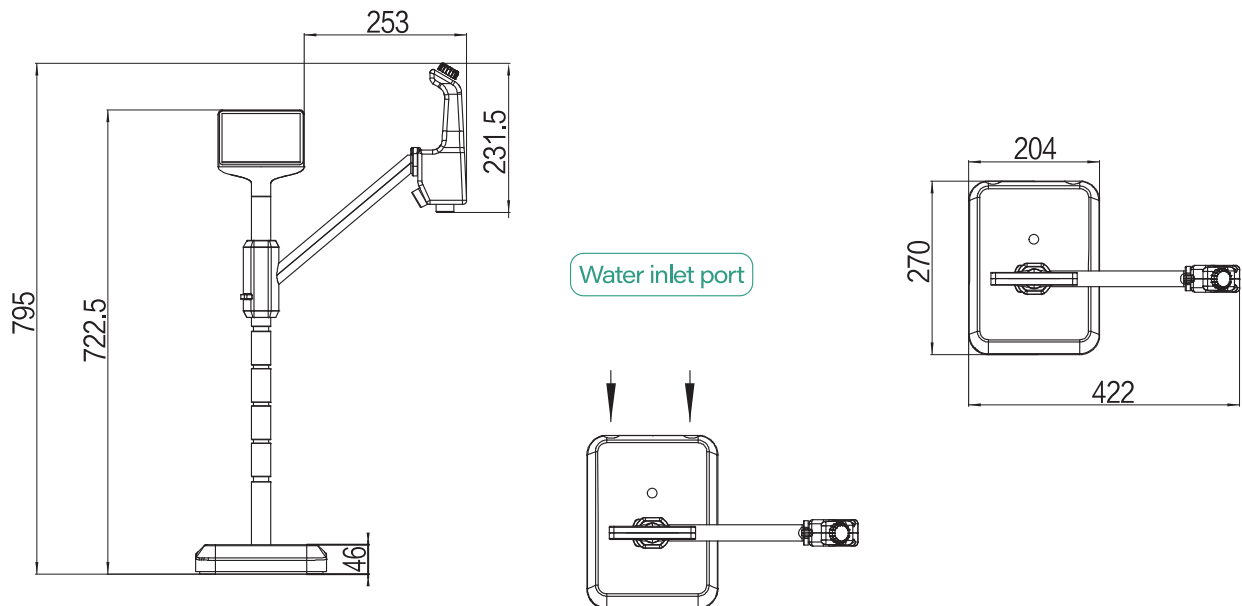
\*\*\* Instantaneous demand, water pressure 0.15-0.35MPa

\*\*\*\*Feed water quality should meet above requirements

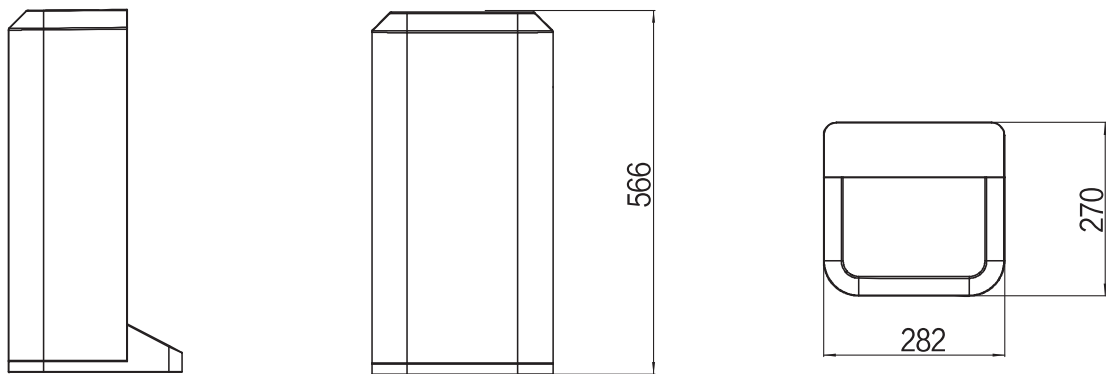
# Installation information

(In mm)

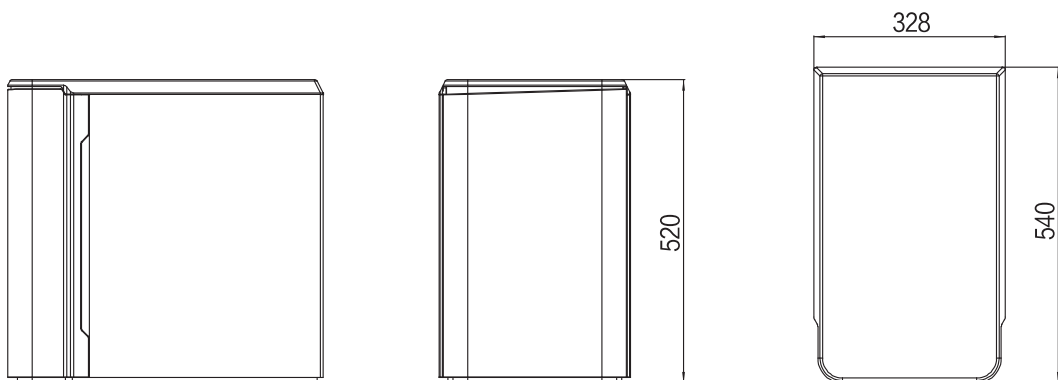
## Dispenser Arm-Nova-Smart



## Pretreatment module-All models



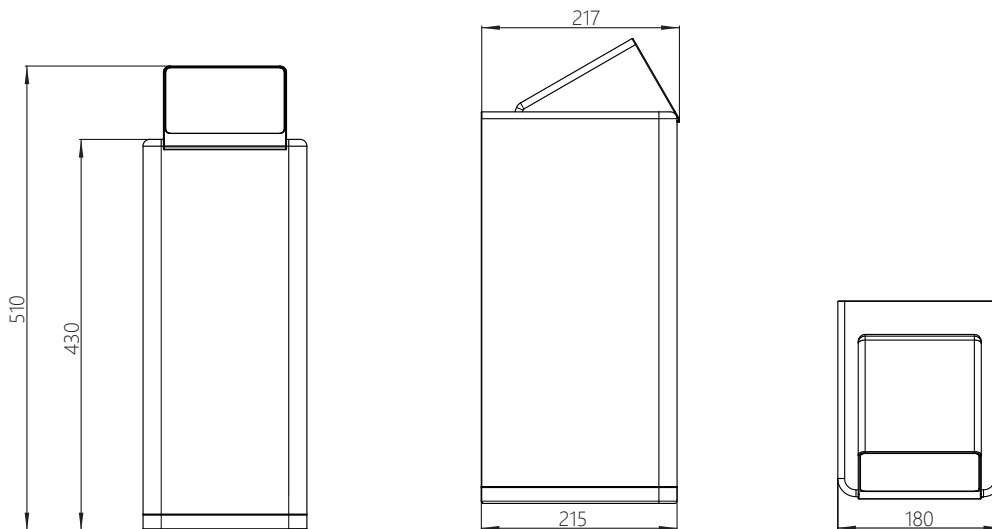
## Nova series all-in-one machine



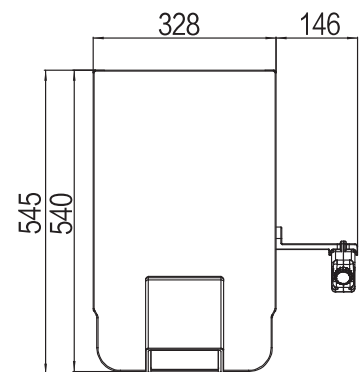
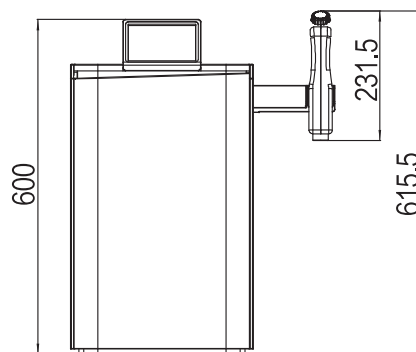
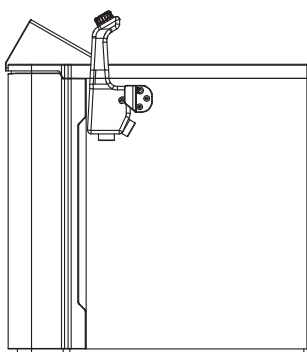
# Installation information

(In mm)

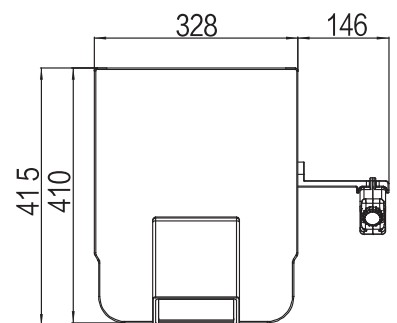
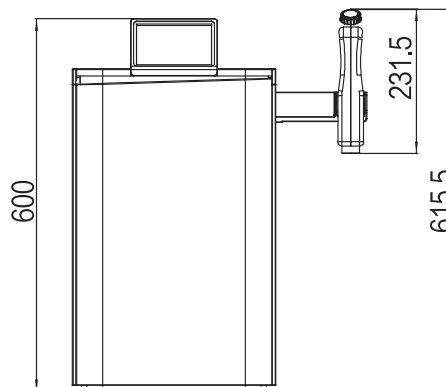
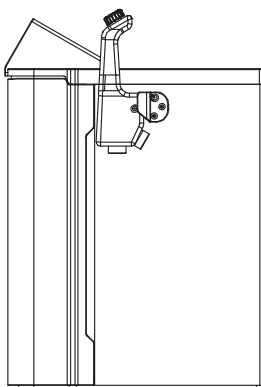
## Nova Zero-ion



## Performa serie All-in-one system Classic serie All-in-one system Classic serie Type II water system



## Performa U

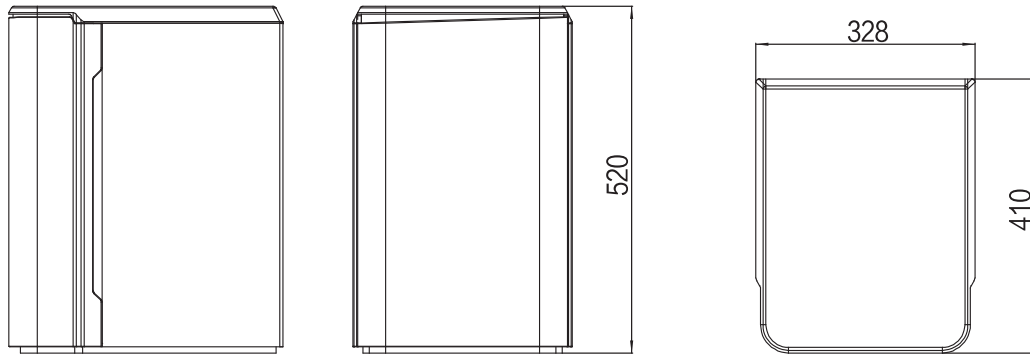




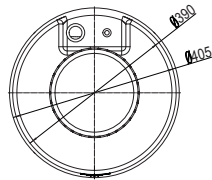
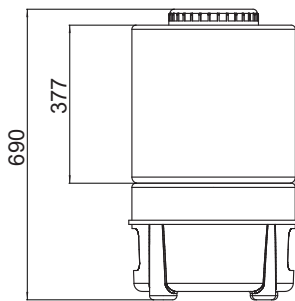
# Installation information

(In mm)

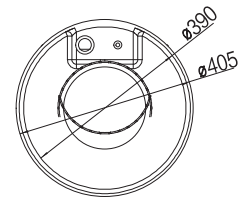
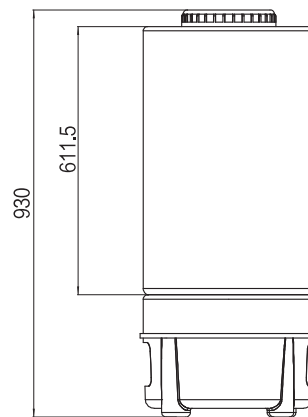
## Nova U



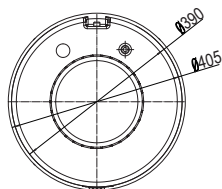
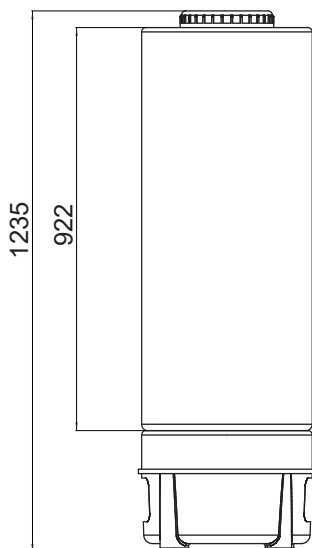
## Water tank



30L



60L



100L

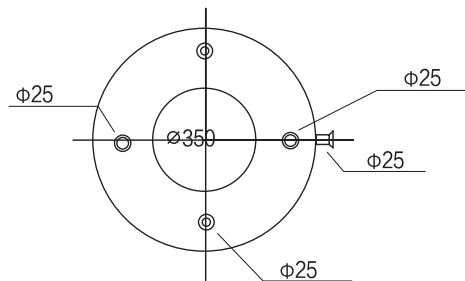
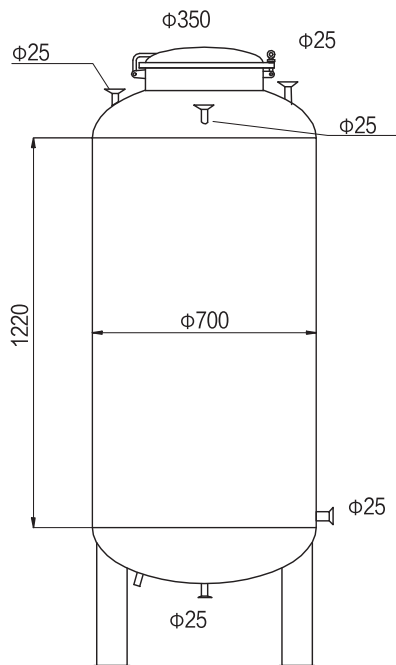
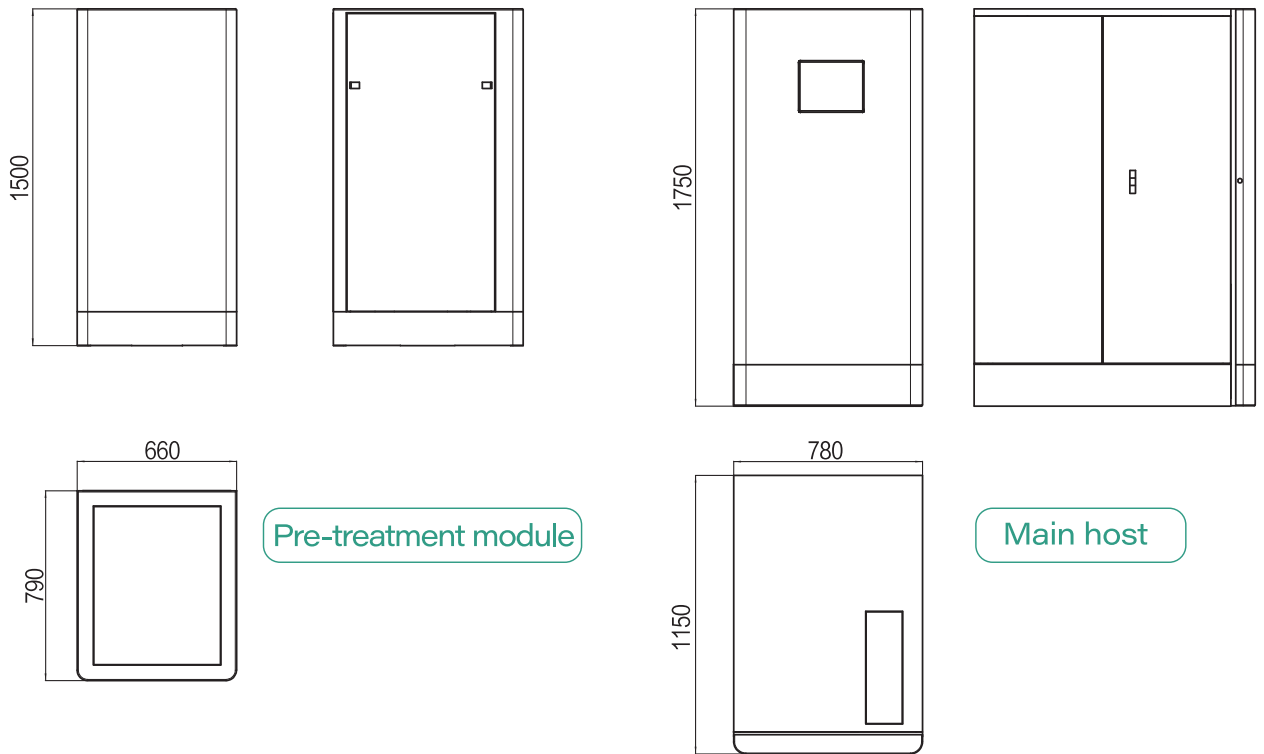
## Universal salt softener for all laboratory use models



# Installation information

(In mm)

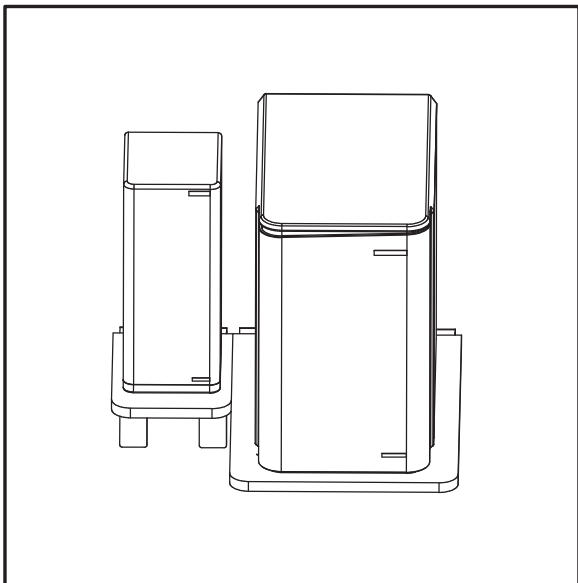
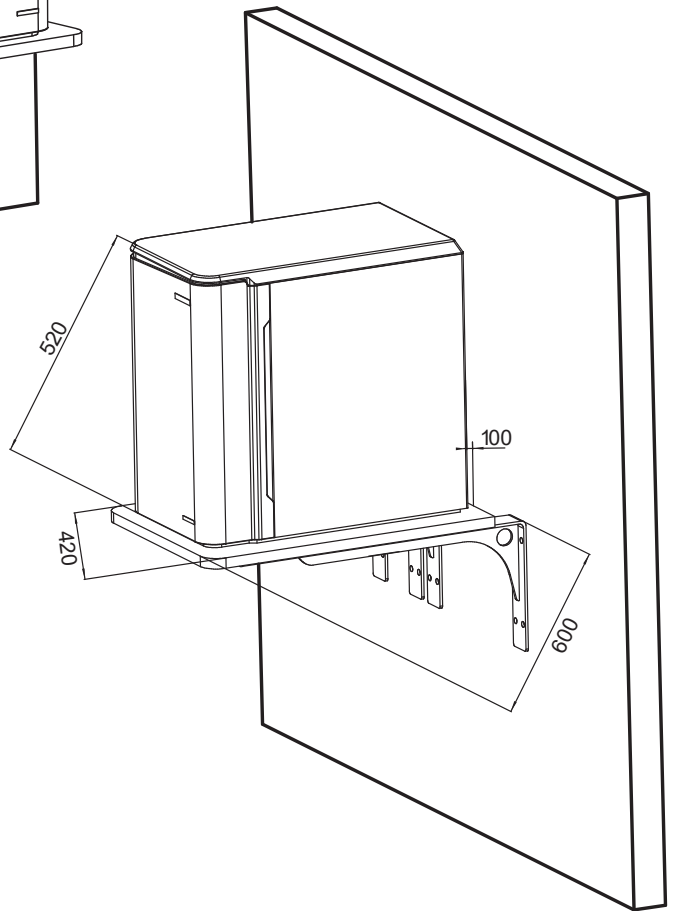
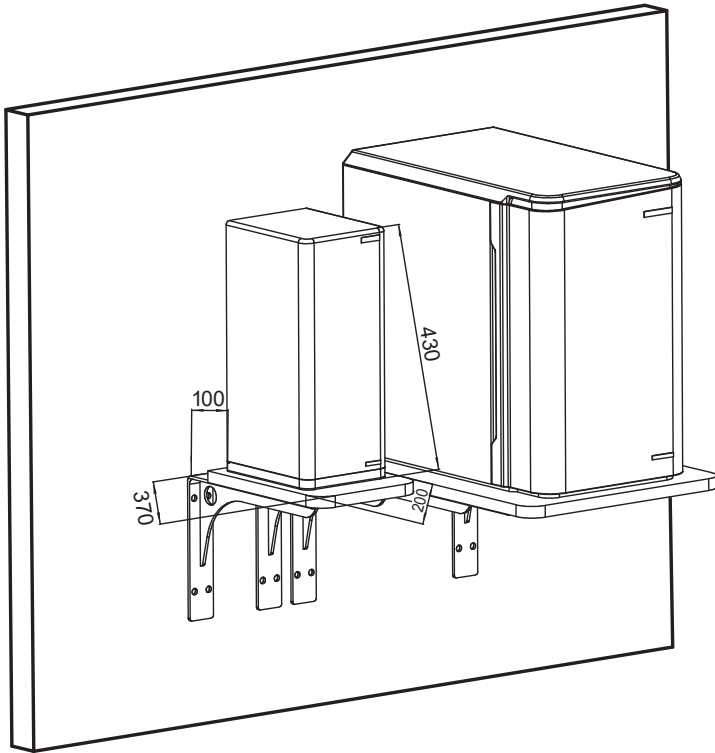
## Central high purified water system



Stainless steel water tank

# Wall-mounted installation

(In mm)





Proseers

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