

E Pro Series

Water Purification System



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.

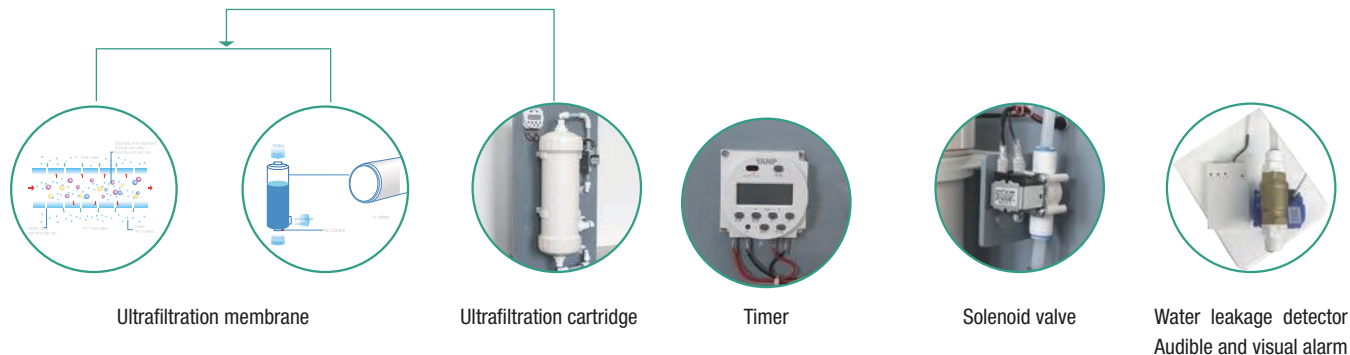
In the back of module are three ports: water inlet, filtered water outlet and waste water outlet

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.

Pre filter with high purity Polypropylene cartridge with micron rating 1/2/5 density graded wrapped filter with Voltage of 20 Watts DC Pump.



Module inside & Ultra filtration cartridge



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.

Stage II

RO Module stage membrane with thin flux layer of mol. wt cut off of RO membrane is 200 dalton to meet Type II analytical water system.

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

E Pro purified water $(100-20) \times 75\% \times 75\% = 45\text{L}$ Others:
Purified water $100 \times 50\% \times 50\% = 25\text{L}$

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.

System compatible with feed water quality of silt density index (SDI) levels upto 12 to 14 and total chlorine level of 3 ppm

Three main purification cartridges

Purification cartridges

Pre-guard cartridge A

Filled with high-quality coconut shell activated carbon with anti scaling and particulate filter of 1 micron to effectively remove residual chlorine, macromolecular organics, colloids and heavy metal ions, etc.

Pre-guard cartridge B

Filled with an appropriate amount of silicon phosphorus crystals to effectively reduce the hardness of feed water. Filled with wire wound filter elements to retain powder and floc impurities.

Ultra purification cartridge B

Filled with electronic grade ion exchange resin, the ions in the water are controlled at ultra-trace levels. Advanced vertical flow purification method is adopted to ensure the service life and purification effect of purification cartridge, and reduce the use cost.

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



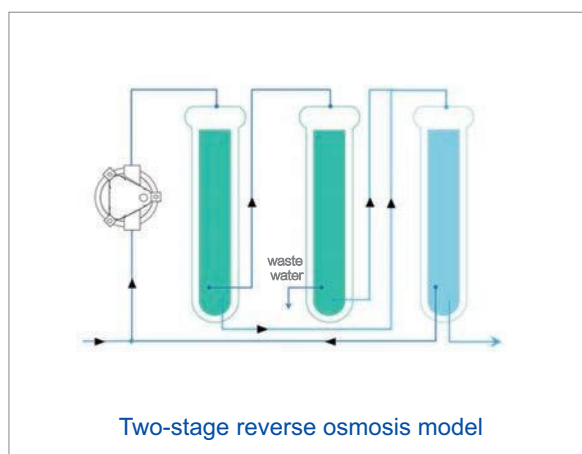
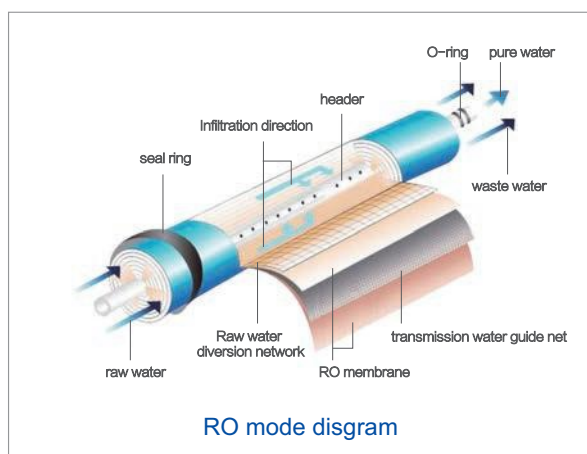
Two-stage RO module



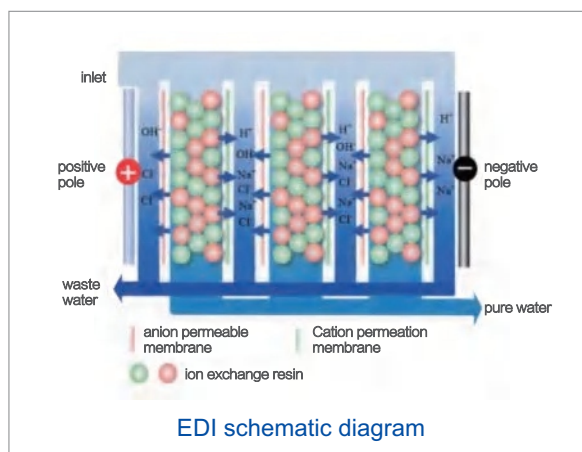
Depends on feed water quality, our two-stage RO module service life can reach 2-3 years, and the conductivity of RO water will be less than 5pS/cm which can protect the running of EDI module and prolong its service life. Ratio of waste water is only 25% with recycle technology.

RO membrane with conductivity cells pre and after function with 90-99% rejection of inorganic ions 99% rejection of pyrogens, Bacteria and dissolved organic materials.

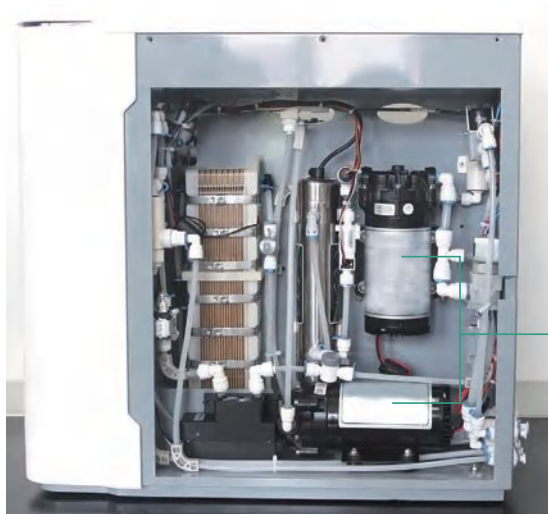
Ratio of waste water is only 25% with recycle technology when compared to most brand systems with high recovery and reduce the wastage of feed water to drain and rejection of 99% inorganic and dissolved organic material.



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.

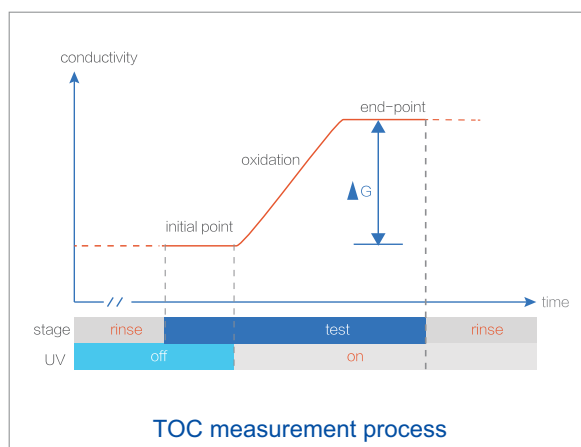
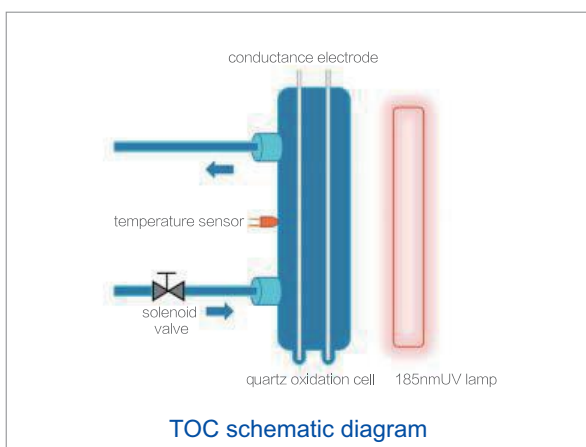
EDI Module with several cells separated by permeable membrane, each cell contains mixed bed resins with carbon beads that attracts both positive and negative ions from the water Ion exchange and avoids scaling and regeneration resins uses electricity.

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(pg/L).



Dual wavelength UV lamp



Single Moulded Polypropylene Reservoir

Available in 30/60/100 liters PE water tank

254nm UV lamp, works 10 minutes every 5 hours to prevent growth of bacteria.

0.2µm inlet air vent filter to prevent air pollution and allows clean air.

Filter consists of active carbon with 0.22 micron hydrophobic membrane with UV lamp for automatic sanitization facility,

Pressure sensor to indicate the amount of water.

Stepless water level adjustment on touch screen



UV lamp



Air vent 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"



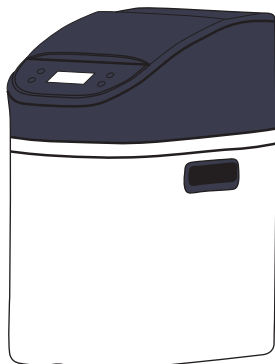
Foot pedal frees your hands, flow rate upto 2L/minutes need be setted in advance by rotating the button of dispenser arm (Standard)

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 screen 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 ow	≥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.



Water Purification System

Venchal
Scientific

E-Pro RO Series

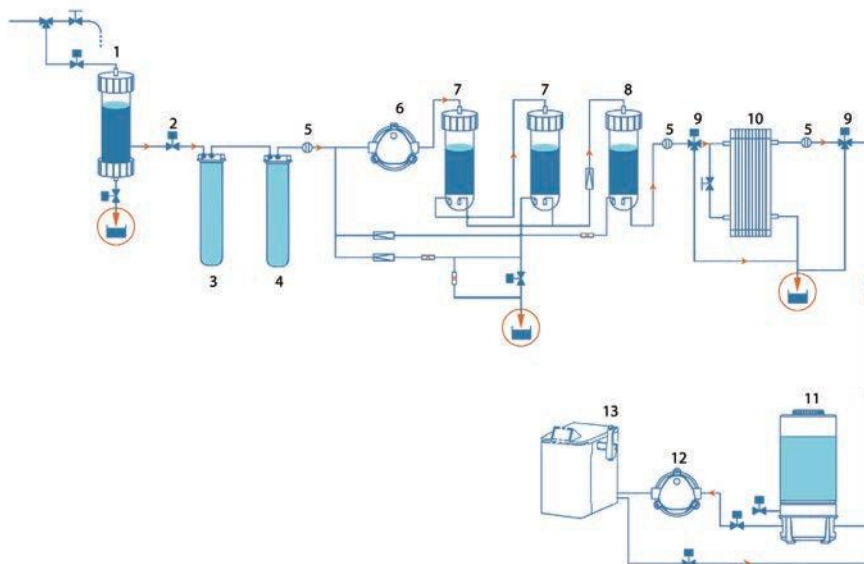
ASTM Type II high purified water system
Clinical laboratory reagent water (CLSI)



Features

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

Water Flow Chart



- 1 Pre-treatment module
- 4 Pre-guard cartridge B
- 7 One-stage RO membrane
- 10 EDI module
- 13 Type II water dispenser arm

- 2 Solenoid valve
- 5 Conductivity electrode
- 8 Two-stage RO membrane
- 11 Water tank

- 3 Pre-guard cartridge A
- 6 Booster pump
- 9 TEE Solenoid valve
- 12 Circulating pump

Water Purification System

E-Pro UP Series

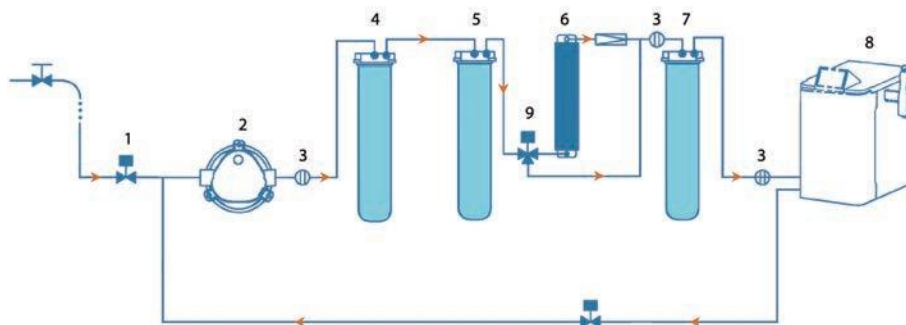
ASTM Type I Ultra purified water system



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

Water Flow Chart



- 1 Solenoid valve
4 Pre purification cartridge A
7 Ultra purification cartridge

- 2 Circulating pump
5 Pre purification cartridge B
8 Type I water dispenser arm

- 3 Conductivity electrode
6 UV lamp 185 & 254 nm
9 TEE Solenoid valve

Main Configurations	Type II Water		Type I Water
	E Pro RO10	E Pro RO15	E Pro UP 20
Pre-treatment module	YES	YES	NO
Main host	YES	YES	YES
Pre-guard cartridge A	YES	YES	NO
Pre-guard cartridge B	YES	YES	NO
Pre purification cartridge A	NO	YES	YES
Pre purification cartridge B	NO	YES	YES
Two-stage Reverse osmosis	YES	YES	NO
EDI module self-developed	YES	YES	NO
60L water tank; stepless water level sensor	YES	YES	NO
254nm UV light of water tank	YES	YES	NO
Inlet air filter of water tank 0.2µm	YES	YES	NO
Water leakage protection sensor	YES	YES	YES
Dual wavelength (254nm & 185nm) UV-lamp	NO	YES	YES
TOC monitoring	NO	YES	YES
Ultra purification cartridge A	NO	YES	YES
One integrated type I water dispenser arm	YES	YES	YES
1M water piping from main unit to water dispenser arm	YES	YES	YES
0.22 µm end filter	YES	YES	YES

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

Water Purification System

Model	Type II Water						Type I Water
	E Pro RO 10		E Pro RO 15		E Pro RO 20		E Pro UP 20
Feed water Requirements							
Source	Potable tap water						Type II water/RO
Conductivity	<2000µS/cm						<100µS/cm
TOC	<1ppm						< 50ppb
Total Chlorine level	3ppm						1ppm
Hardness*	<450ppm as CaCO ₃						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
Type II high purified water							
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						
Temp. Compensation	± 0.1°C (at any temperature changes)						
Noise Level	≤ 45 dB						
Type I high purified water							
Resistivity at 25°C	N/A						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
Electrical requirement							
Electrical voltage	220V ±10%						
Electrical frequency	50Hz/60Hz						
Power	<135W						
Size Information							
Net Weight							
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						
External Dimension (WxDxH)							
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)						
Packing Information							
Gross Weight							
Pre-treatment module	9.8kg						N/A
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						
Packing Dimension (WxDxH)							
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