# iRO (INTEGRATED REVERSE OSMOSIS) WATER PURIFIER

**iRO water purifier** uses the most advanced and effective energy saving RO separation technology. The purifier uses a semipermeable RO membrane, which only allows water molecules to pass and retains all other substances, thereby producing clean and purified drinking water. The purifier uses microfiltration, softening, UF, sterilization, reverse osmosis and an alkalization process. It is capable of removing harmful carcinogens, bacteria, viruses and other chemicals and organic compounds from drinking water source.

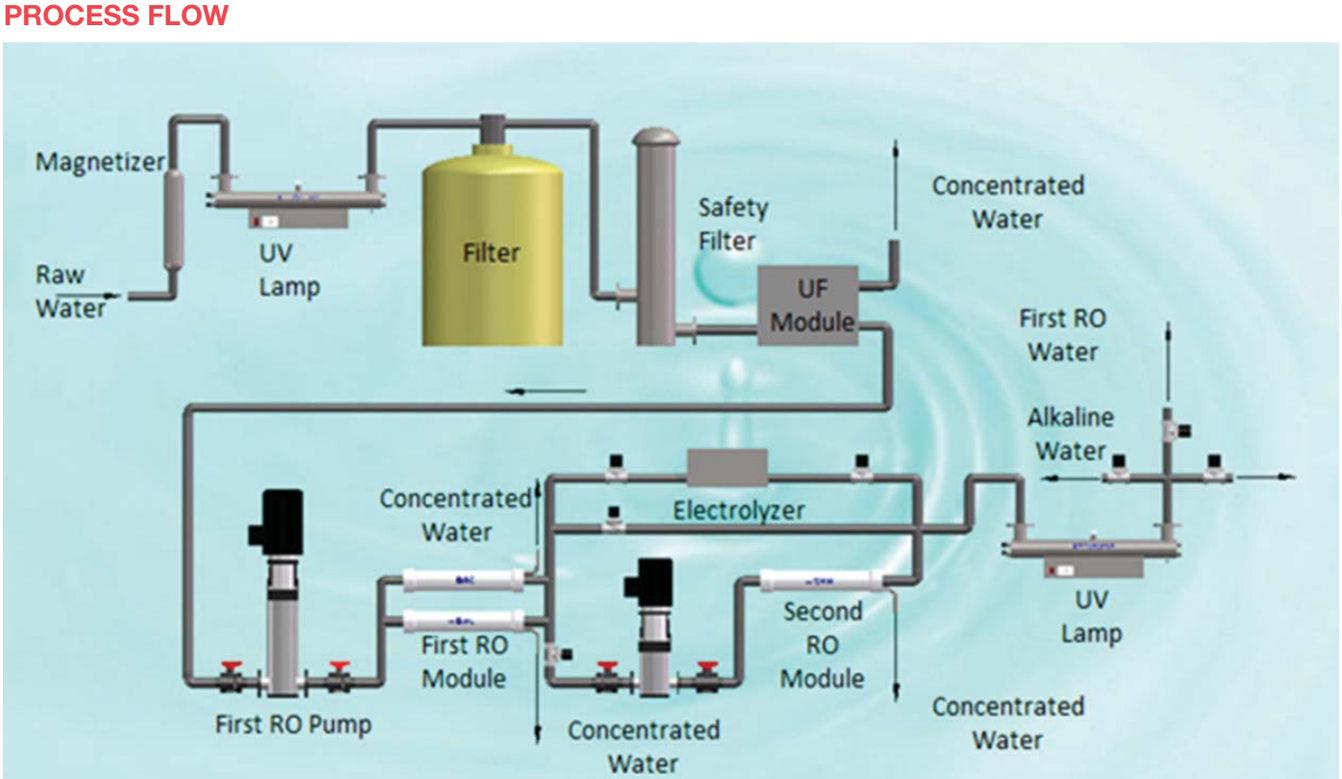
## iRO WATER PURIFIER CHARACTERISTICS

- RO desalination and separation. The salt rejection of a single RO membrane element is 98% or higher, while colloid, organic matter, bacteria and virus are completely removed from water.
- Using hydraulic pressure as driving force, the energy consumption is much lower compared to many other desalination methods.
- Capable of continuous water production, simple system, easy to operate, and stable and high quality product water.
- Small occupying area, compact structure, reliable operation, high quality water production
- Able to customise according to customers needs with options for integration with secondary RO or UF equipment
- Optional alkaline water equipment, electrolyzed water (pH from 7.0 to 10.0) has characteristics like alkalescency, small molecule and negative potential which fully matched the WHO's 6 standards of healthy water. Ideal choice for waterworks' upgrades.

Final RO Plant build


Final RO Plant build

## PROCESS FLOW



## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Raw water TDS | <1000 mg/l |
| Silting density index (SDI) | <3 |
| Primary RO flow | 0.5 to 10 m3/hr |
| Primary RO conductivity | <10 µS/cm |
| Secondary RO flow | 0.5 to 10 m3/hr |
| Secondary RO conductivity | <2 µS/cm |
| Output water temperature | 5-45°C |
| Electrical voltage | 380V AC, 50Hz |

## OUTPUT WATER STANDARD

- In accordance with the requirement of "The hygiene, safety and function evaluation criterion of drinking water process – RO treatment equipment (2001)";
- In accordance with national standards of beverage and alcohol industries;
- In accordance with national standards of drinking water (CJ94-1999);
- In accordance with national hygiene standards of bottled water (GB17324-2003);
- In accordance with Guidelines for drinking water quality (4th edition, WHO, 2011).

## MAIN APPLICATION FIELDS

- Production of pure drinking water, production of pure water used in beverage, beer, alcohol, milk and health supplements in food industry.
- Drinking water treatment for areas with high fluoride, high hardness or high salinity water.
- Pure water for use in car and household electronics lacquering, glass coating and cosmetics.
- Direct drinking water for communities and high-end residential areas
- Drinking water for large enterprises and institutions

## ADVANTAGES

- High quality product water with conductivity < 10 µs/cm
- Much higher salt removal efficiency
- Consistent and stable water quality, less fluctuation due to changes in raw water quality
- High recovery, up to 80%
- Fully automated

## MEMBRANE USED

**Tritech® PuroMax™ RO membrane module**


## APPLICATION

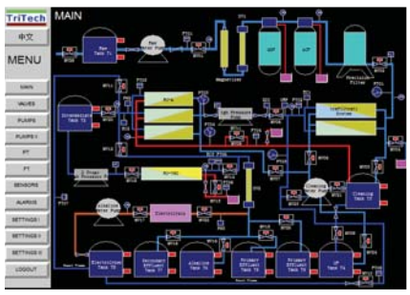
Broad range of application for the treatment of water including:

- Seawater RO desalination
- Drinking water purification
- Ultra-pure water purification
- Used water reuse
- Heat exchanger cooling water and boiler feed water

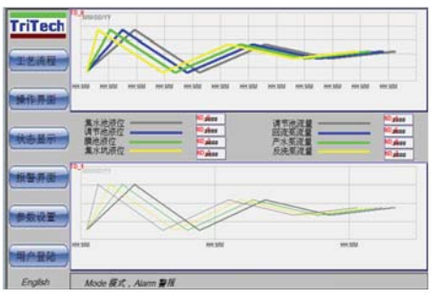
## PRODUCT FEATURES AND BENEFITS

- High water flux with high salt rejection
- High chemical stability
- Anti-fouling
- Long life span
- Wide operating range (pressure and temperature)
- Cost effective

## OPERATION INTERFACE




Process flow monitoring




Production Trend chart


Parameters setting page

## PUROMAX™ MEMBRANE SPECIFICATIONS

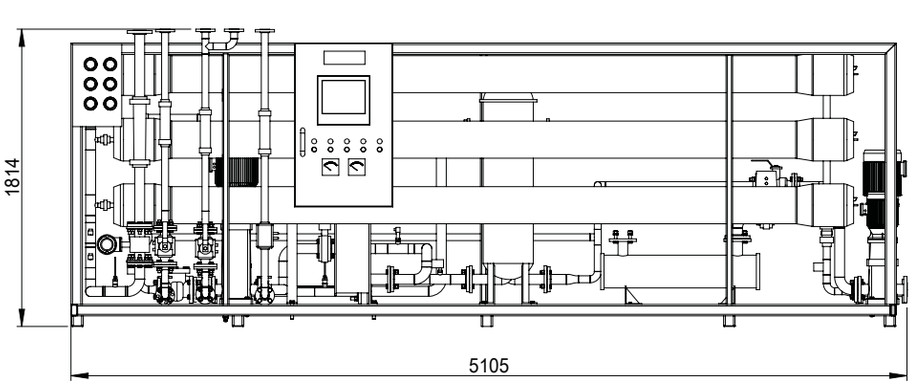
| | Type | | LP730-4040 | LP730-8040 | ULP720-4040 | ULP720-8040 |
|---|---|---|---|---|---|---|
| Parameters | Membrane Material | | Cross Linked Fully Aromatic Polyamide Composite | | | |
| | Membrane Area ft² (m²) | | 87 (8.0) | 400 (37.0) | 87 (8.0) | 400 (37.0) |
| | Product Flow Rate GPD (m³/d) | | 2400 (9.1) | 10200 (38.6) | 2400 (9.1) | 10200 (38.6) |
| | Salt Rejection | Average (%) | 99.5 | 99.5 | 99.5 | 99.5 |
| | | Min. (%) | 99.0 | 99.0 | 99.0 | 99.0 |
| Test Conditions | Feed Water Pressure psi (MPa) | | 225 (1.55) | | 110 (0.76) | |
| | Feed Water Temperature °C (°F) | | 25 (77) | | 25 (77) | |
| | Feed Water Concentration ppm(NaCl) | | 2000 | | 500 | |
| | Feed Water pH range | | 6.5 - 7.0 | | 6.5 - 7.0 | |
| | Single Element Recovery Rate % | | 15 | | 15 | |
| Operating Limits | Max. Operating Pressure psi (MPa) | | 600 (4.14) | | 365 (2.5) | |
| | Max. Operating Temperature °C (°F) | | 45 (113) | | 45 (113) | |
| | Max. Feed Flow gpm (m³/h) | | 16 (3.6) | 75 (17) | 16 (3.6) | 75 (17) |
| | Feed $SDI_{15}$ | | < 5.0 | | < 5.0 | |
| | Feed Water Chlorine ppm | | 0.1 | | Not Detectable | |
| | Feed Water Turbidity NTU | | < 1.0 | | < 1.0 | |
| | Feed Water pH Range, Cont.Operation | | 3-10 | | 2 - 11 | |
| | Feed Water pH Range, Chem.Cleaning | | 2-12 | | 1 - 12 | |
| | Max.Pressure Drop/Element psi (MPa) | | 15 (0.1) | | 20 (0.14) | |

## PRODUCT RANGE FOR TRITECH INTEGRATED RO SYSTEM

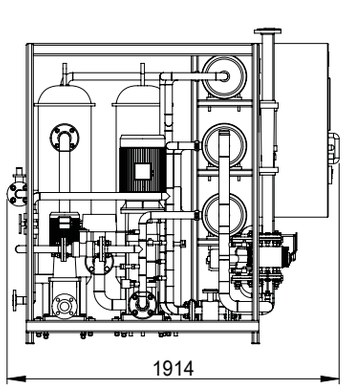
Pre-engineered Package Plants are cost effective and compact solutions for water treatment

| Model No | Dimension (cm x cm) | Power (kW) | Power source | Capacity (m³/hrs) |
|---|---|---|---|---|
| iRO-1 | 160 x 65 | 3.0 | AC380V | 1 |
| iRO-6 | 510 x 190 | 7.0 | AC380V | 6 |
| iRO-10 | 800 x 100 | 10.0 | AC380V | 10 |
| iRO-20 | 900 x 250 | 17.5 | AC380V | 20 |
| iRO-50 | 1200 x 300 | 35.0 | AC380V | 50 |
| iRO-100 | 1500 x 450 | 67.0 | AC380V | 100 |

## MECHANICAL DRAWINGS




Front view of iRO-6




Side view of iRO-6