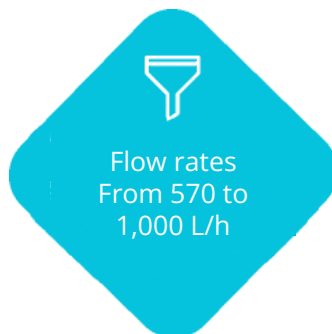


Ionpro™



Reverse Osmosis & EDI for pharmaceutical industry applications

Ionpro™ packaged systems produces Purified Water (PW) in line to current Pharmacopoeia (USP, Ph Eur and JP). The Ionpro™ systems are skid-mounted systems, Plug & play, FAT tested and chemically sanitisable.



✓ FEATURES & BENEFITS

- Skid-mounted, pre-assembled, pre-tested; space saving, short lead times, quick start-up
- Compact skid; small foot print
- **NEW** Aluminium frame
- **NEW** 7" color HMI and RO40 microcontroller for reliable and user friendly operation
- **NEW** Veolia unique design EDI including pharma certificates by default
- **NEW** Frequency controlled variable speed pump for smooth operation and power saving
- **NEW** Stainless steel calibratable conductivity probe on product outlet, sanitary as an option
- **NEW** Stainless steel sanitary sampling valve on product outlet
- **NEW** Activated carbon filtration and 1µ pleated filtration as a base

💧 APPLICATIONS

- Boiler feed
- Compendial validated water (PW only / not WFI)
- Process water
- Demineralized water
- Deionised water
- Healthcare
- Laboratories
- Microelectronic
- Turbine injection
- Type 2 and 3 compendial water

+ OPTIONS

- Dosing Set for pH control
- CO₂ membrane degasser (sweep mode)
- **NEW** Stainless steel pipe on Ionpro outlet (with hygienic instrumentation and valves)
- Control of PVC Product valve (off skid, valve out of scope)
- Control of SS Product valve (off skid, valve out of scope)
- **NEW** Off skid UV including UV meter
- **NEW** Hubgrade ready (modem)
- Witnessed FAT
- Validation Pack: DQ, IQ, OQ standard protocols and certificates
- Covers

HYDREX™ CHEMICALS

Hydrex™ 4000 water treatment chemicals from Veolia Water Technologies should be used for optimized plant operation.

ASSOCIATED SERVICES

Local aftermarket service and support teams offer preventative and corrective maintenance programs to ensure the long-term, efficient operation of installed plant.





System Operating Parameters

Model	Unit	570	750	1000
EDI Product Flowrate	m ³ /h	0.57	0.75	1.00
Nominal Feed Flowrate	m ³ /h	0.78	1.03	1.37
Global Recovery	%	70-75		
Typical Design Flux	l/h/m ²	26	32.4	31.5
Typical Salt Rejection	%	RO >96% EDI >99%		

System Dimensions⁽¹⁾

Model	Unit	570	750	1000
Total Installed Length	m	1.61		
Total Installed Width	m	0.87		
Total Installed Height	m	1.61		
Empty Weight	kg	600 approx		
Operating Weight	kg	1000 approx		

⁽¹⁾ Not utilities nor options included.

Pipes Connections

Model	Unit	570	750	1000
Feed	DN	20		
Treated water ⁽²⁾	DN	20 3/4"		
Drain	DN	32		

⁽²⁾ PVC Socket Union | Stainless steel tri-clamp

Materials of Construction

Softeners	Composite resin
Soft Water Tank	High Density Polyethylene
Skid	Aluminium
Control Cabinet	Painted Mild Steel
Low pressure Pipework	PVC PN16 as a base - Option for Stainless Steel product outlet (ASME BPE SF1)
High pressure Pipework	ISO 1127 (serie 1) 316 Stainless Steel

Power Requirements

Parameter	Unit	Value
Voltage	V	3 x 380/480 V + Earth
Frequency	Hz	50/60
Phases	-	3





Environmental Conditions

Parameter	Unit	Value
Minimum ambient temperature	°C	5
Maximum ambient temperature	°C	35
Maximum humidity	%	90

Feed water Requirements⁽³⁾

Surface water or well water - WHO drinking water specification

Parameter	Unit	Value
Minimum water temperature	°C	5 ⁽⁷⁾
Maximum water temperature	°C	25 ⁽⁸⁾
Minimum supply pressure	barg	3
Maximum supply pressure	barg	6
Max inlet Iron Fe ³⁺	mg/l	< 0.05
Max inlet Manganese Mn ²⁺	mg/l	< 0.05
Max Silt Density Index (SDI)	-	< 3
Maximum Inlet Turbidity	NTU	< 1
Maximum Inlet TDS	mg/l	up to 1000
Max inlet Total Hardness	mg/l CaCO ₃	< 400
Max inlet CO ₂	mg/l	< 30 ⁽⁴⁾
Max inlet Silica	mg/l	< 20
Max inlet TOC	mg/l	< 1
Max inlet Free Chlorine Cl ₂	mg/l	< 0.2

⁽³⁾ Process calculations for RO, degasser and EDI must be performed by BU based on specific water analysis and project data

⁽⁴⁾ For CO₂ membrane removal option

⁽⁷⁾ At low temperature, HP pump might need to be redesigned to comply with requirements

⁽⁸⁾ At high temperature, performance must be evaluated precisely to ensure quality of produced water

Typical Treated Water Quality

Parameter	Unit	Value
Average Conductivity	µS/cm	< 0.2 µS/cm ⁽⁵⁾
Maximum Conductivity	µS/cm	< 1.3 µS/cm @25°C
Bacteria	cfu/100 ml	100 10 ⁽⁶⁾

⁽⁵⁾ at design conditions (500 ppm feed TDS, 15°C and 1 bar outlet pressure)

⁽⁶⁾ without product outlet UV | with product outlet UV