

**CapDI[®] SYSTEMS
TECHNICAL SPECIFICATIONS**

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We specialize in tunable water purification that is designed to remove total dissolved salts (TDS) from a variety of water sources, ranging from tap water and brackish groundwater to industrial process water. CapDI achieves this at a lower economic cost and reduced environmental impact than any other available technology.

Voltea's CapDI technology purifies water types ranging from residential consumer appliances to large-scale industrial plants. Our systems are modular, allowing easy expansion to meet any increased water demands.

CapDI Benefits

- Automated cleaning
- Remote monitoring available
- High water recovery, up to 90 %
- Tunable TDS reduction, up to 90 %
- Complete system monitoring and feedback
- Dynamic Control - controlled output water quality
- Customizable system sizing to reach client needs
- Operation at high temperatures, up to 60 °C (140 °F)
- Low energy usage, 0,4 - 0,8 kWh/m³ (1.5 - 3.0 kWh/kgal)
- Patented Membrane Capacitive Deionization Technology

Quality Assurance

- CE Certified
- UL on request
- Factory Acceptance Test on request
- Systems and modules quality control tested
- Voltea Remote Monitoring and Control package

Feed Water Quality

PARAMETER	UNIT	RANGE	INTERMITTENT
Removal Limit	Δppm	0 - 2000	
Total Dissolved Solids (TDS)	ppm	0 - 4000	
Total Organic Carbon	ppm	< 15	
Chemical Oxygen Demand	ppm	< 50	< 100
Turbidity	NTU	< 4	< 100
Fats, Oils, Greases	ppm	< 0.5	
Total Suspended Solids (TSS)	ppm	< 4	< 20
Free Chlorine	ppm	< 1	< 25
pH	-	2 - 10	1 - 12
Iron total	ppm	< 0.5	
Total Hardness (CaCO ₃)*	ppm	< 1000	
M Alkalinity (as CaCO ₃)*	ppm	< 1000	
Pre-filtration	µm	5	
Temperature	°C	1 - 60	
Chemicals	-	Contact Voltea	

* Limits depend on set TDS reduction and water recovery



IS-12H

CapDI IS-12H Industrial Series 7-12 Module Skid



Design and Scope of Supply

- IS System User Manual
- Capable of ambient or high temperature feed water
- Built-in monitoring; flow, pressure, conductivity, module voltage
- Skids can take up to full accompaniment of modules

IS Features

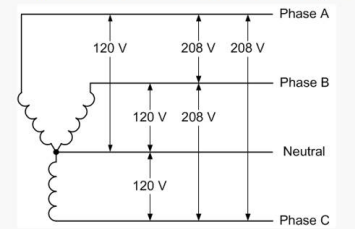
- Voltea Remote Monitoring and Control available
- Automated System CIP (Clean-In-Place); chemical and/or air

Inlet/Pure Outlet Conductivity Meters	0 - 10 mS/cm
Total Flow Meter	0 - 150 L/min (0 - 33 gpm)
System Pressure	0 - 10 bar (0 - 145 PSI)
Module Pressure	0 - 6 bar (0 - 87 PSI)
User Interface	HMI Panel

Performance	Net Produced Flow	1,1 - 7 m ³ /h (4.8 - 30.8 gpm)
	Salt Removal	25 - 90 %
	Water Recovery	40 - 90 %

System Specification	Input Power Requirements*	230 VAC, 50 Hz, 33A, 7.5 kW (Common in EU) OR 208 VAC, 60 Hz, 40A, 7.5 kW (Common in USA) Refer to phase diagram**
	System Dimensions (L x W x H)	1,5 x 0,9 x 2,2 m (4'11" x 3' x 7'2")
	Service Space	0,8 m (27") from edge of system
	Weight***	550 kg (1,210 lbs)
	Feed Inlet Coupling	1.5" union
	Product Outlet Coupling	1.5" union
	Concentrate/Waste Outlet Coupling	1.5" union

Three Phase Four Wire Wye



Operational Requirements	Water Feed Pressure	3 bar (44 PSI) at the flow rate required, max 6 bar (87 PSI)
	Water Temperature	1 - 60 °C (34 - 140 °F)
	Compressed Air Line	100 L/min (3.5 CFM) @ 6 bar (87 PSI), pneumatic, size 3/8"
	Operating Ambient Air Temperature****	< 25 °C (< 77 °F)

Inputs/Outputs	Start / Stop	Input - Potential free contact (0 - 30 VDC / 0 - 250 VAC, 0 - 5 A)
	External Pump	Output - Potential free contact (24 VDC)

*Actual power consumption will depend on module and settings used (typically 30-60% of input power requirement).
 **For alternatives, please contact a Voltea representative
 ***Weight without modules
 ****Without added cooling

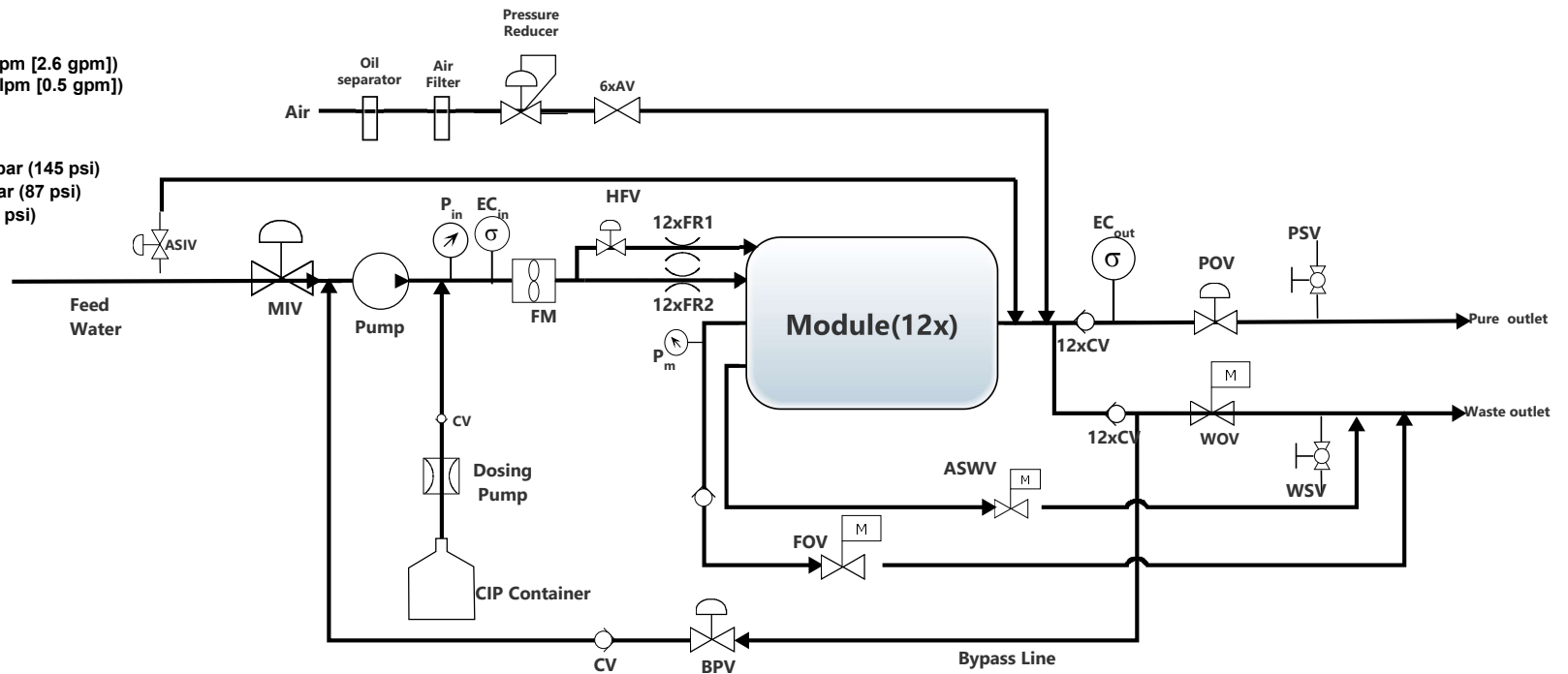
IS-12H Process Flow Diagram

Valves

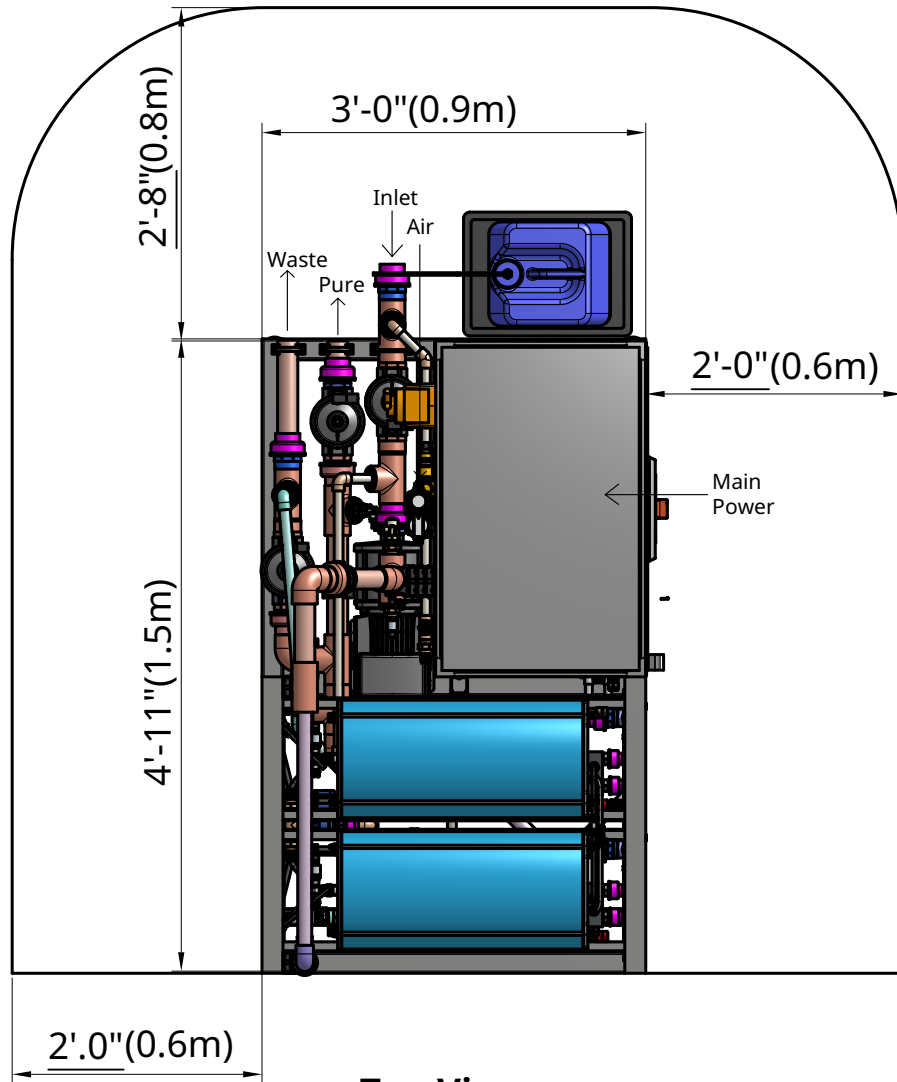
- ASIV : Air Scour Inlet Valve
- ASWV: Air Scour Waste Valve
- AV: Air Valve
- BPV: Bypass (CIP Recirculation) Valve
- CV : Check Valve
- FOV: Fill out Valve
- WSV: Waste Sample Valve
- MIV : Main Inlet valve
- PSV: Pure Sample Valve
- POV : Pure Outlet valve
- WOV: Waste Outlet valve
- FR1 : Flow restrictor (default 10 lpm [2.6 gpm])
- FR2 : Flow restrictor (default 2.0 lpm [0.5 gpm])

Sensors

- FM : Flowmeter
- P_{in} : System Pressure Sensor 10 bar (145 psi)
- P_m : Module Pressure Sensor 6 bar (87 psi)
- PS3 : Pressure Switch 2.0 bar (29 psi)
- EC_{in} : Inlet Conductivity probe
- EC_{out} : Out let Conductivity probe

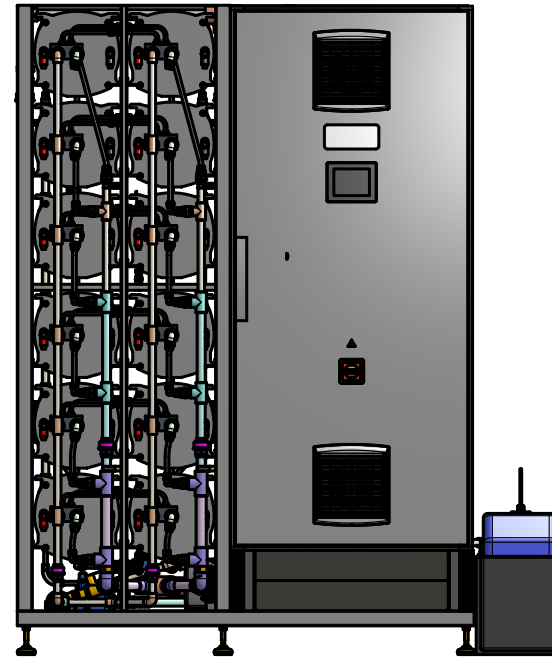


IS-12H

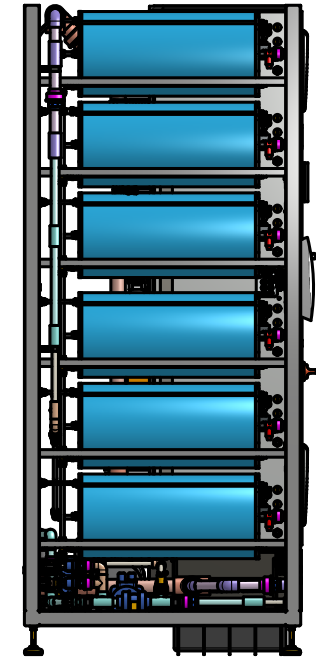


Top View

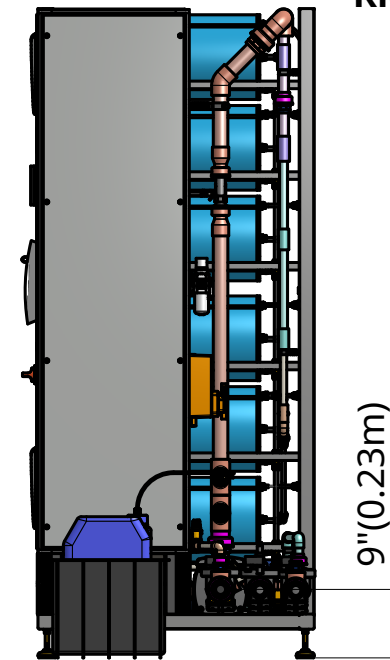
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Front View



Right side View



Left side View