

**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-48H

CapDI IS-48H Industrial Series 37-48 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

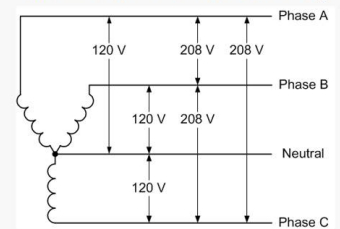
- Voltea Remote Monitoring and Control available
- Automated System CIP (Clean-In-Place); chemical and/or air

Inlet/Pure Outlet Conductivity Meters	0 - 10 mS/cm
Total Flow Meter	31-501 L/min (8 -133 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	2,6 - 20 m ³ /h (11.5 - 88 gpm)
	Salt Removal	25 - 90 %
	Water Recovery	40 - 90 %

System Specification	Input Power Requirements*	400 VAC (WYE), 50 Hz, 45A, 30 kW (Common in EU) OR 480 VAC (DELTA), 60 Hz, 13A, 10 kW AND 208 VAC, 60 Hz, 66A, 15 kW (Common in USA) Refer to phase diagram**
	System Dimensions (L x W x H)	5,6 x 1,1 x 2,3 m (18'5" x 3'7" x 7'7")
	Service Space	0,8 m (27") from edge of system
	Weight***	1,500 kg (3,307 lbs)
	Feed Inlet Coupling	2.5" union
	Product Outlet Coupling	2.5"
	Concentrate/Waste Outlet Coupling	2.5"

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	400 L/min (14 CFM) @ 6 bar (87 PSI), pneumatic, size 1/2"
	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

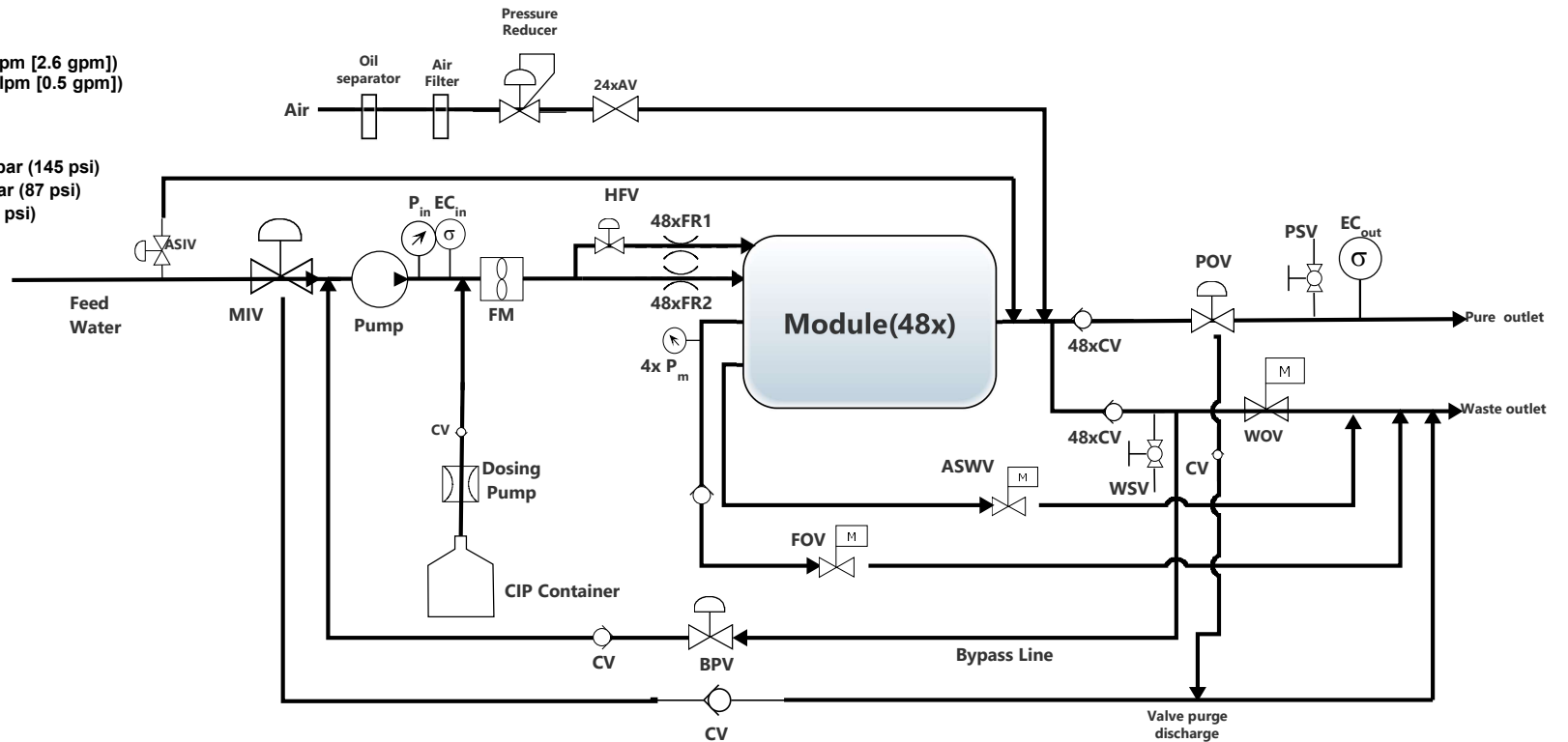
IS-48H Process Flow Diagram

Valves

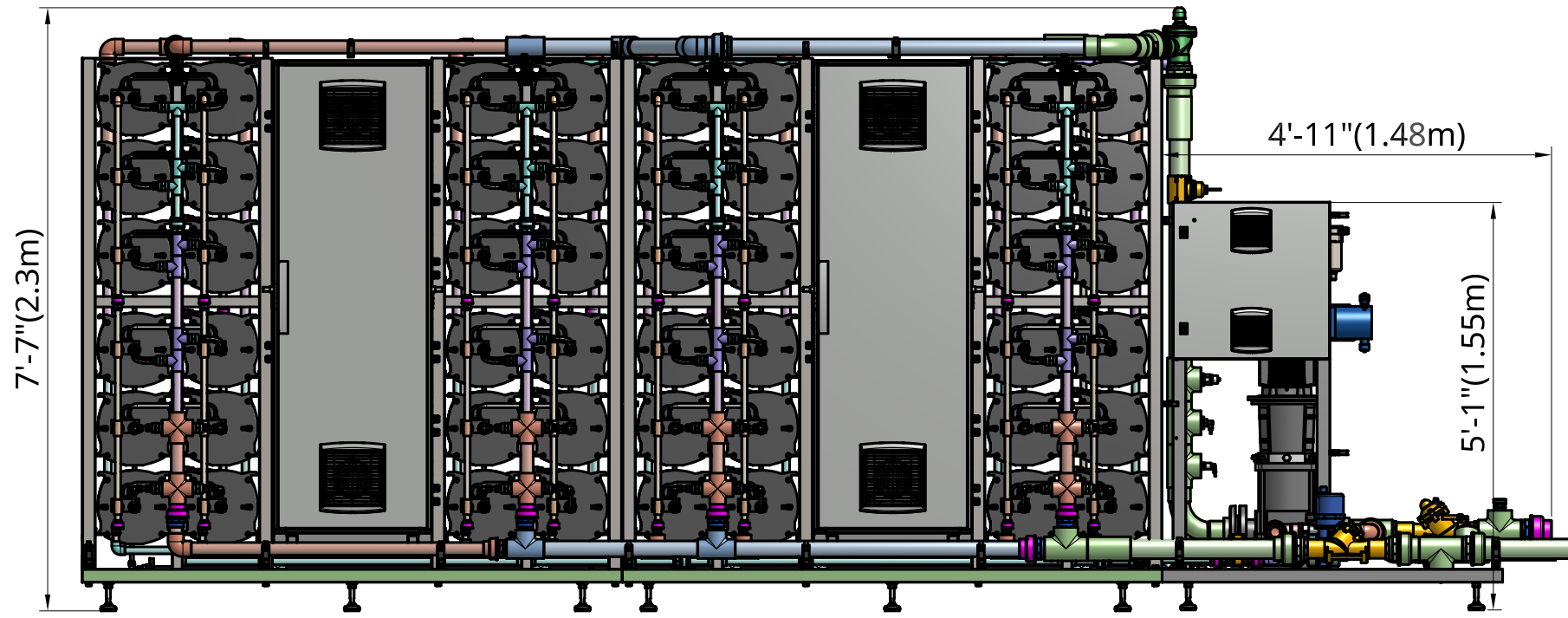
- ASIV : Air Scour Inlet Valve
- ASWV: Air Scour Waste Valve
- AV : Air Valve
- BPV: Bypass (CIP Recirculation) Valve
- CV : Check Valve
- FOV: Fill out Valve
- MIV : Main Inlet valve
- PSV: Pure Sample Valve
- POV : Pure Outlet valve
- WOV: Waste Outlet valve
- WSV: Waste sample valve
- FR1 : Flow restrictor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

Sensors

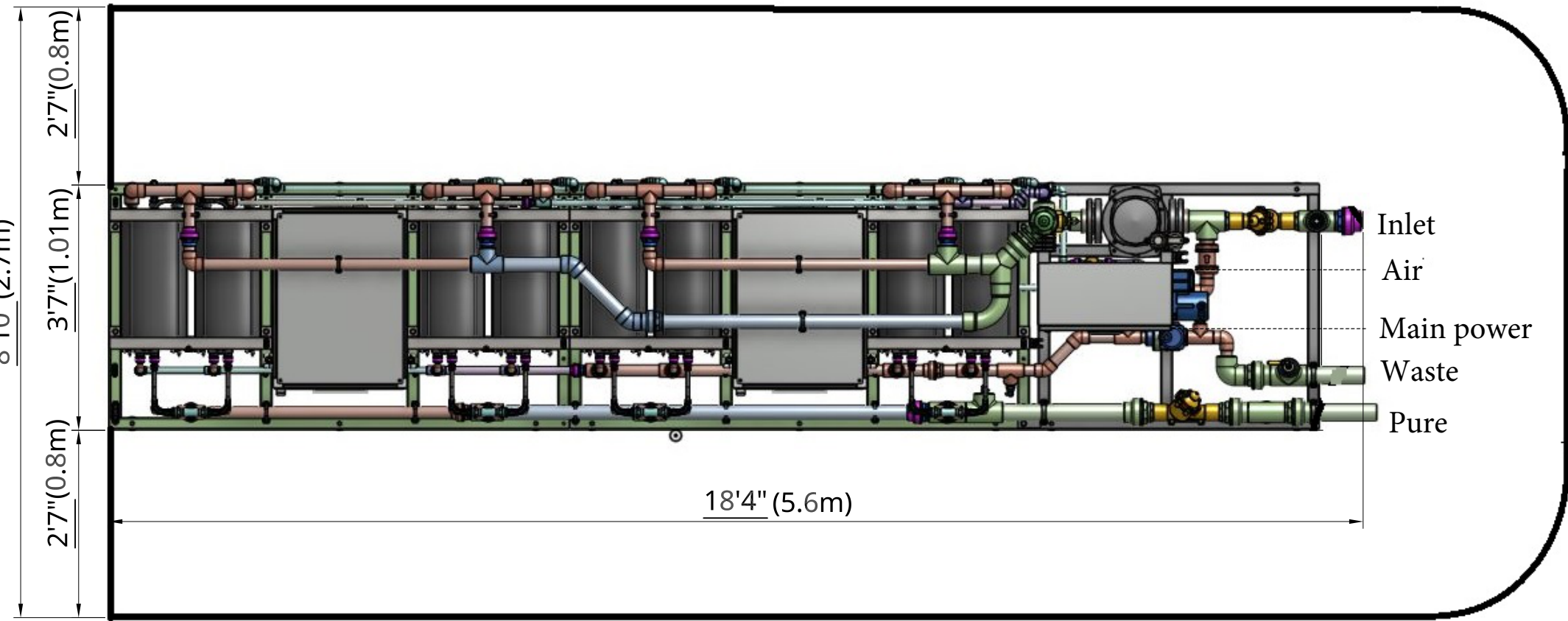
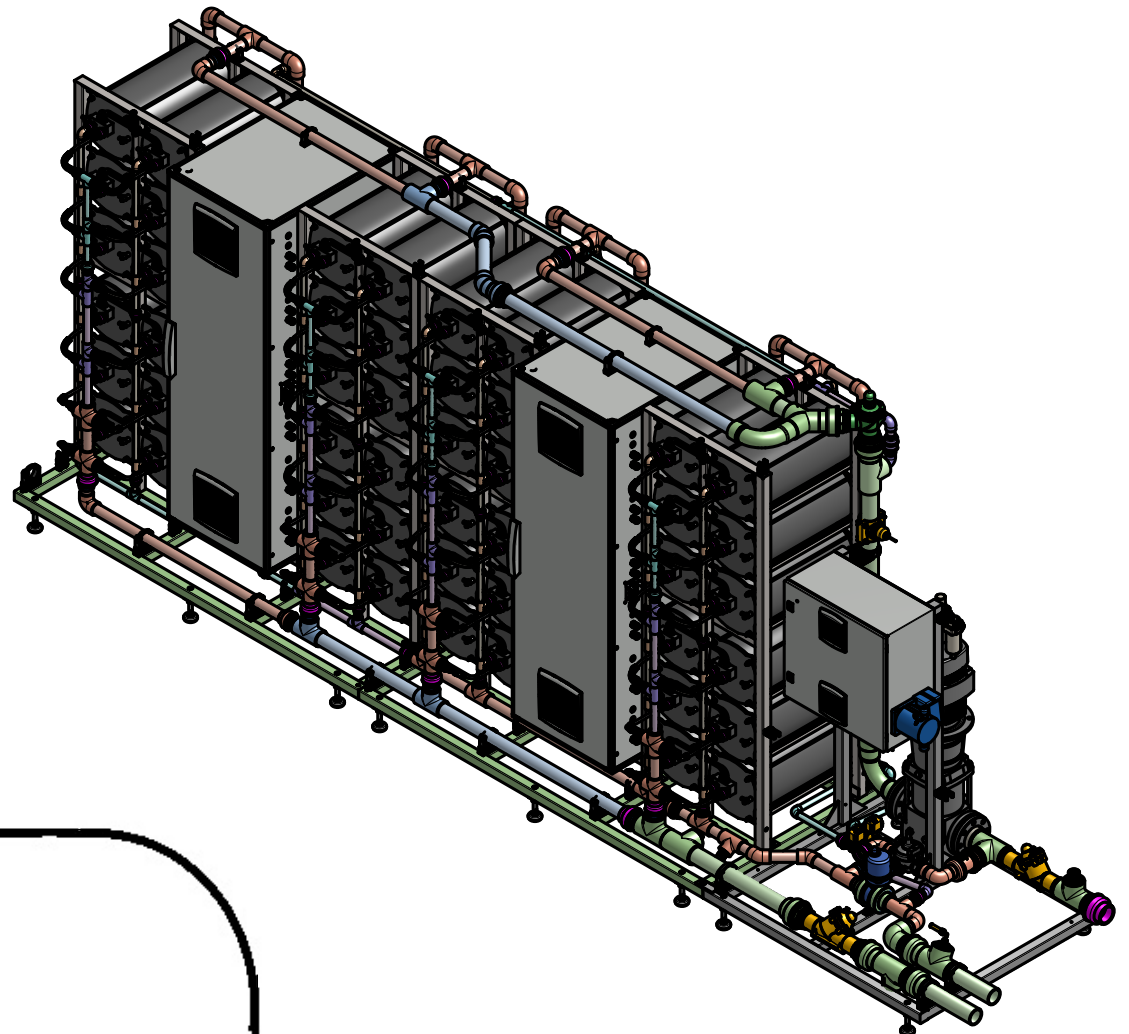
- FM : Flowmeter
- P_{in} : System Pressure Sensor 10 bar (145 psi)
- P_m : Module Pressure Sensor 6 bar (87 psi)
- PS3 : Pressure Switch 2.0 bar (29 psi)
- EC_{in} : Inlet Conductivity probe
- EC_{out} : Out let Conductivity probe



IS-48H



Front view



Top view

Recommended installation clearance