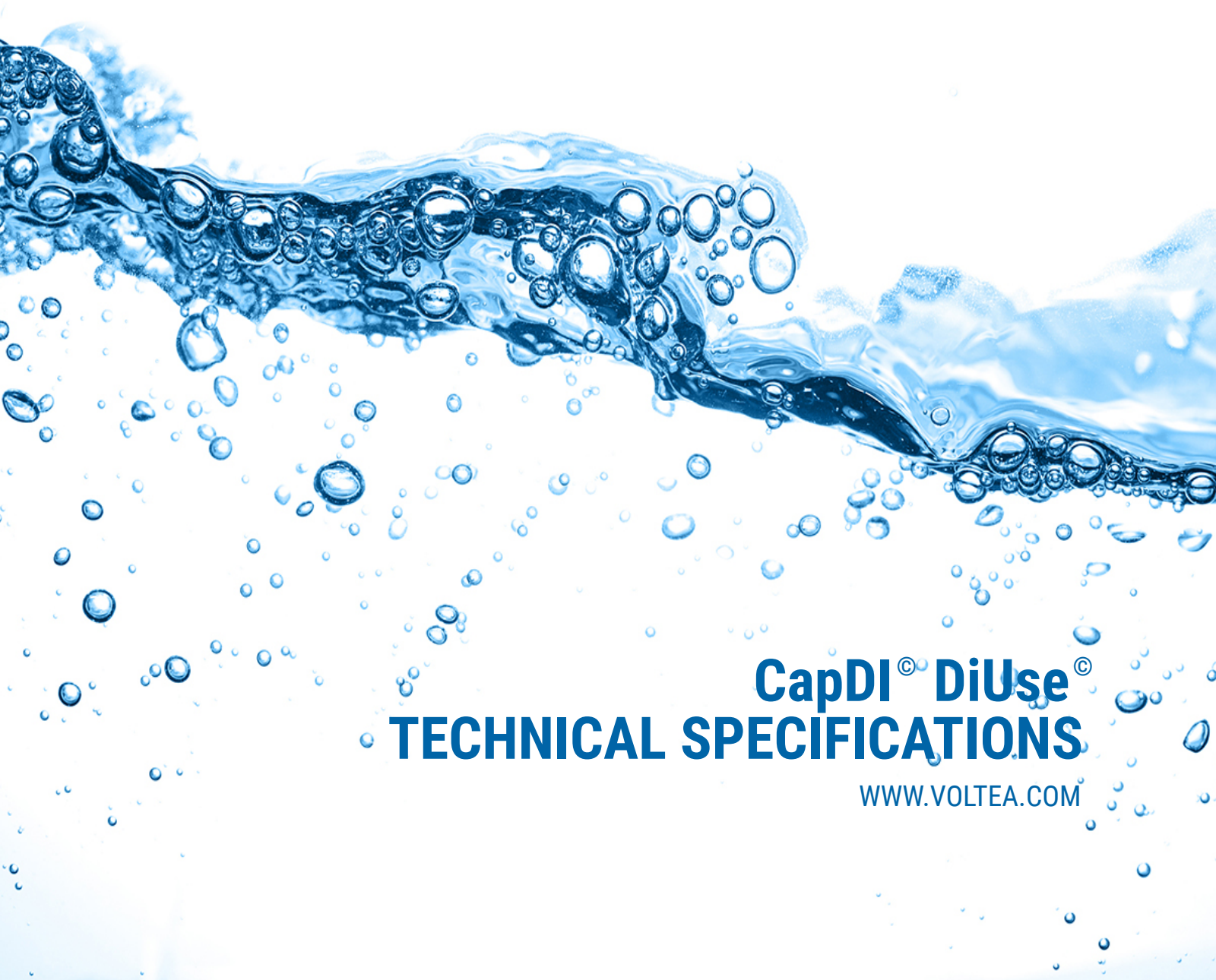


CapDI© DiUse©
TECHNICAL SPECIFICATIONS

WWW.VOLTEA.COM

DiUse©

Voltea CapDI
Membrane Capacitive Deionization

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 35 °C (95 °F)
- Low energy usage, 0,4 - 0,8 kWh/m^3 (1.5 - 3.0 kWh/kgal)
- Patented Membrane Capacitive Deionization Technology

Quality Assurance

- CE Certified
- UL Listed
- 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	≤ 1300	
Total Dissolved Solids (TDS)	ppm	≤ 2000	
Total Organic Carbon	ppm	< 10	
Chemical Oxygen Demand	ppm	< 20	< 100
Turbidity	NTU	< 4	< 100
Fats, Oils, Greases	ppm	< 0.5	
Total Suspended Solids (TSS)	ppm	< 4	< 20
Free Chlorine	ppm	< 2	< 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 - 35	
Chemicals	-	Contact Voltea	

* Limits depend on set TDS reduction and water recovery

DiUse©

CapDI DiUse
Point-of-Use (PoU)

Design and Scope of Supply

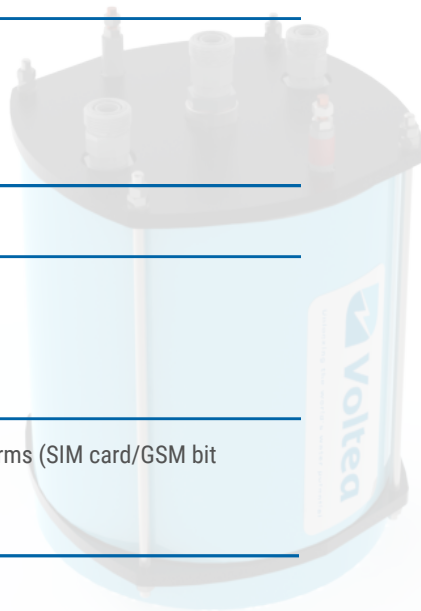
- DiUse User Manual
- Chemical container and containment tray
- Membrane Capacitive Deionization DiUse Module
- Built-in monitoring; flow, conductivity, module voltage
- Automated cleaning triggered by cycles

DiUse Features

- Automated System CIP (Clean-In-Place)
- Voltea remote monitoring and control available

Pure Outlet Conductivity Meters	0 - 10 mS/cm
Flow Meter	0 - 10 L/min (0 - 2.6 gpm)
User Interface	Built-in Display

Performance	Produced Flow Rate*	0,3 - 2,2 L/min (0.08 - 0.58 gpm)
	Instant Flow Rate*	0,5 - 4 L/min (0.13 - 1.06 gpm)
	Salt Removal	25 - 90 %
	Water Recovery	50 - 90 %
System Specification	Average Power Requirements	0.13 kW, Single - Phase (110 - 240 V AC / 50 - 60 Hz)
	System Dimensions (L x W x H)	0,32 x 0,43 x 0,64 m (1’0” x 1’5” x 2’1”)
	Power Output to Modules	0 - 65 A / 0 - 2 V DC
	Weight**	17 kg (37 lbs)
	Feed Inlet Coupling	3/8” push fit
	Product Outlet Coupling	3/8” push fit
	Concentrate/Waste Outlet Coupling	3/8” push fit
Operational Requirements	Water Feed Pressure	3 - 20 bar (43 - 290 PSI)
	Water Pressure Produced***	≤ 3,5 bar (≤ 51 PSI)
	Operating Ambient Air Temperature	< 35 °C (< 95 °F)
In/Out Puts	Start / Stop	Pressure switch (standard) or external 24 V DC signal
Cleaning	Procedure	Automated chemical cleaning
	Control (Auto/Manual)	Automatic: on cycles of operation
	Storage	1 L chemical container
Controls	Remote Control / Data Monitoring	Total flow, conductivity, average voltage, cycles count, alarms (SIM card/GSM bit internet or local)
	Parameter Change	Local



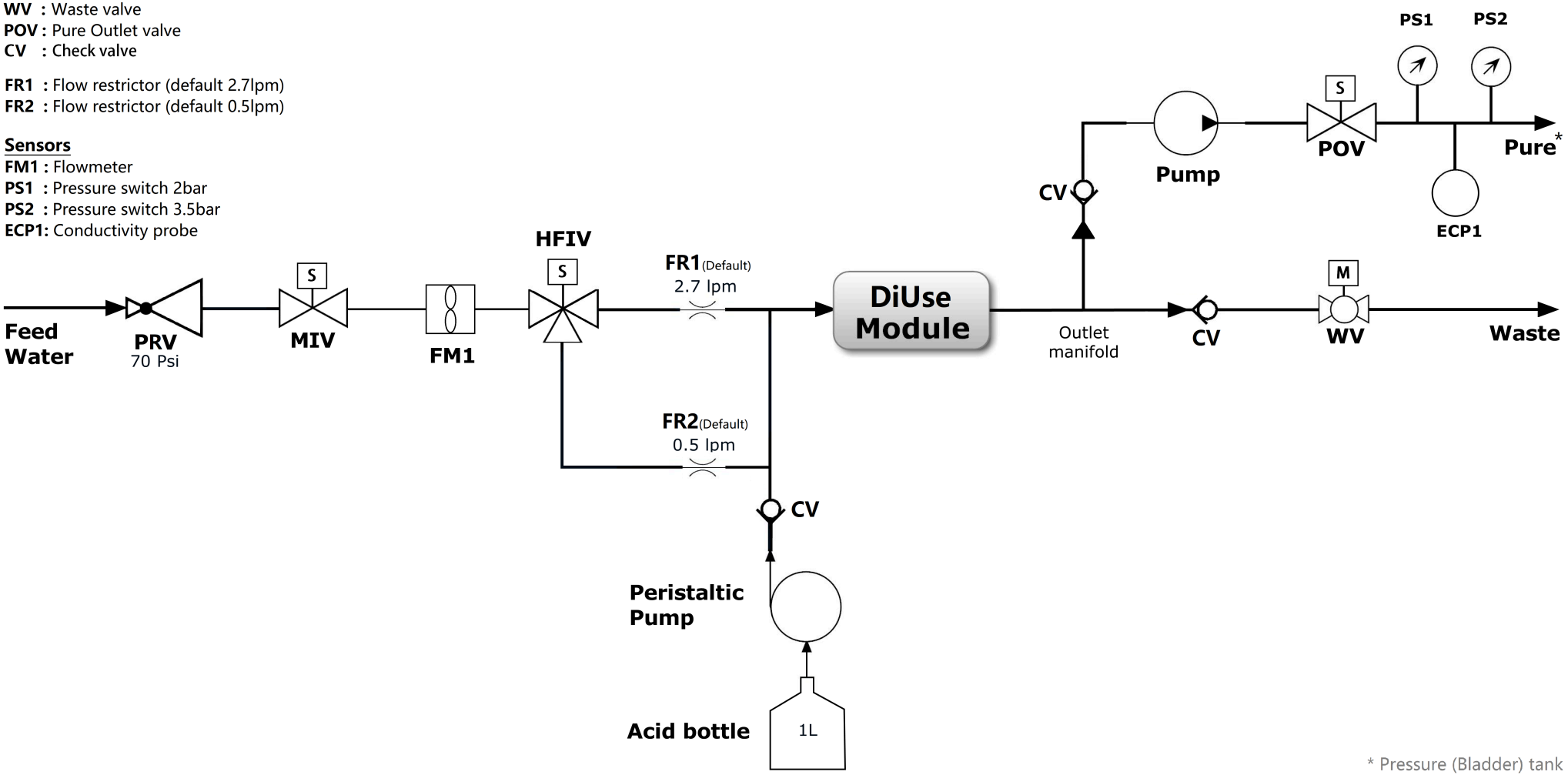
*Depends on TDS reduction and water recovery
**Weight without module
***Depends on flow target

DiUse Process Flow Diagram

Valves
PRV : Pressure reducer valve
MIV : Main Inlet valve
HFIV: High flow Inlet valve
WV : Waste valve
POV : Pure Outlet valve
CV : Check valve

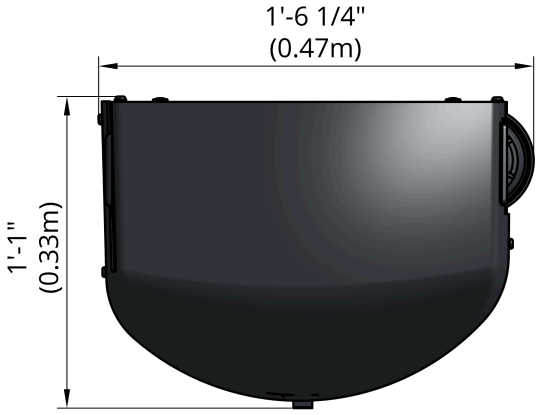
FR1 : Flow restrictor (default 2.7lpm)
FR2 : Flow restrictor (default 0.5lpm)

Sensors
FM1 : Flowmeter
PS1 : Pressure switch 2bar
PS2 : Pressure switch 3.5bar
ECP1: Conductivity probe



* Pressure (Bladder) tank

DiUse Overview



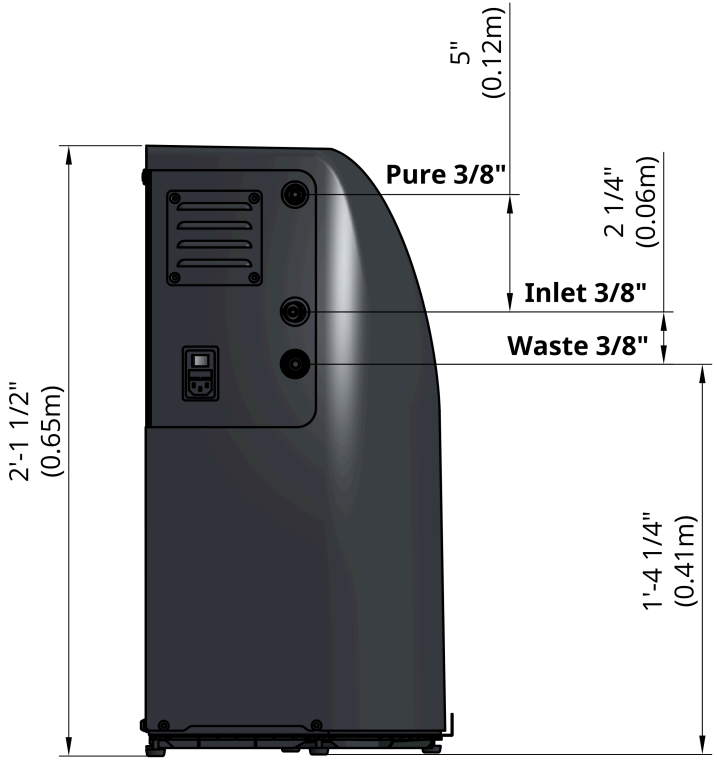
Top view

Right side view

1'-1"
(0.33m)

Front view

1'-6 1/4"
(0.47m)



Left side view