



Voltea's CapDI[®] Technology Product and Systems Catalog

Voltea's CapDI systems provide clean, pure water for an array of applications through tunable deionization.



TABLE OF CONTENTS

- 3** Voltea's Mission & Environmental Responsibility
- 4** Technology Overview & Patent Protection
- 5** How It Works : CapDI & Applications
- 6** CapDI Benefits
- 7 - 8** Commercial & Industrial Modules & Technical Specs
 - 9** VS - Series Modules & Technical Specs
 - 10** Development Kit & Technical Specs
- 11 - 12** DiUse - Point-of-Use System & Technical Specs
- 13 - 14** DiEntry - Point-of-Entry System & Technical Specs
- 15 - 16** Industrial Series (IS) Systems 2 - 48
- 17 - 18** Industrial Series (IS) Systems 2 - 48 Technical Specs
- 19 - 20** CapDI Innovation : Global Installation Footprint
- 21 - 22** Take Some Notes...



Unlocking The World's Water Potential



ENVIRONMENTAL RESPONSIBILITY

At Voltea, our mission revolves around providing a **superior solution** to water reuse and desalination, where we put our natural resources and environment first. The lasting effects that harsh salts and chemicals have on our water sources is brutally evident, and only regressing with each salt refill and discharge using current traditional desalination and reuse technologies.

Environmentally responsible solutions to water reuse and desalination are crucial to our generation - and our future - and Voltea surpasses these expectations by providing a tunable, salt-free, chemical-free purification technique that every home and business can adopt.

The tunability feature of Voltea's Membrane Capacitive Deionization (CapDI®) is what differentiates our technology from traditional desalination technologies; we allow treatment of brackish water sources where the customer can choose the level of salt and ion removal based on their treatment needs.

No longer is it necessary to replace removed salt with other salts, add chemicals for cleansing purposes, or cool then re-heat water for high-temperature reuse applications. CapDI accomplishes this all while reducing environmental impact, energy costs, and operational inefficiencies.



Voltea's CapDI[®] Technology

We specialize in **tunable water deionization** that is designed to remove total dissolved solids (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.

Uniquely, CapDI operates at temperatures ranging from 5 - 60 °C, or 40 - 140 °F, on challenging higher turbidity feed waters, with minimal operator intervention. Our technology is environmentally responsible by virtue of its low energy consumption and minimal to no chemical usage, thus allowing any unrecovered water to flow back into the ecosystem safely.

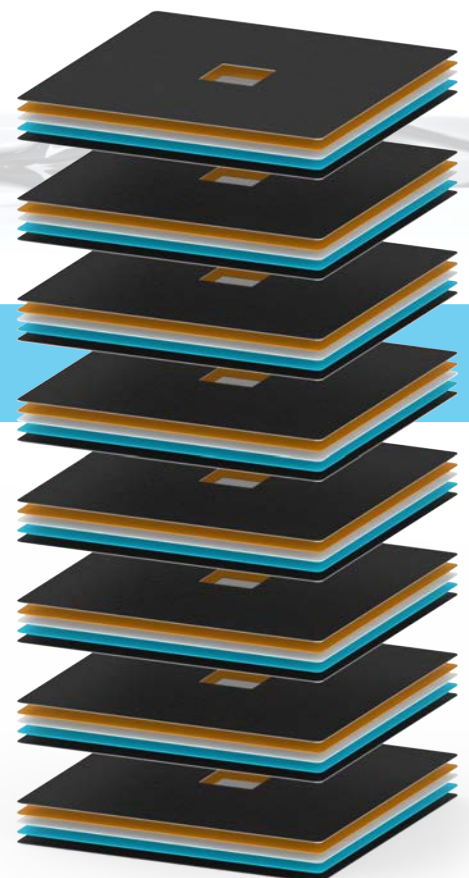
Voltea's technology treats water types ranging from residential consumer appliances to large-scale industrial plants. Our systems are modular, allowing easy expansion to meet any increased water demands.

Tunable Deionization At Your Fingertips

CapDI is tunable, allowing adjustable TDS reduction between 25 - 90% depending upon customer needs, eliminating the requirement for blending to achieve a specific water quality. The **customer sets their desired reduction rate** and CapDI maintains this level, continually adjusting itself to account for any fluctuations in feed water characteristics.

Patented Protection

Voltea owns over **100 global patents** pertaining to CapDI and how the technology is implemented into modules and systems. Voltea's patent portfolio ensures that the use of ion-selective membranes or coatings in any capacitive deionization device requires a legally binding supply and license agreement with Voltea.

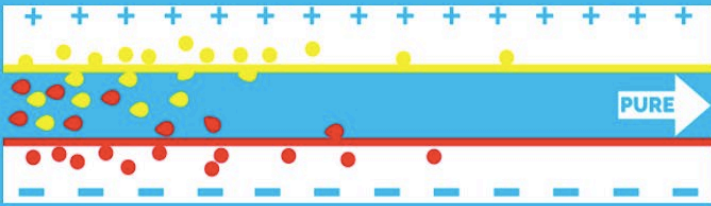


How It Works : CapDI

2 - STEP PROCESS

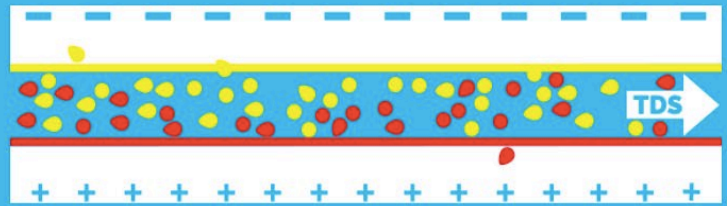
CapDI is a simple 2-step process wherein water flows between electrodes, where the electrode surfaces are separated from the water by ion-selective membranes that allow positive or negative ions to pass.

PURIFICATION



Feed water passes between oppositely charged electrodes which electrostatically remove dissolved ions, leaving pure water flowing out of the cell.

REGENERATION



Feed water flushes through the cell at a lower flow rate, while electrode polarity is reversed. Ions are rejected from the electrode surface, concentrated in the flow channel and flushed from the cell before the cycle is repeated.

Applications That Require Hardness and TDS Removal

HoReCa

Horticulture

Cooling Towers

Wastewater Reuse

Bottling Companies

Commercial Laundry

General Deionization

Automotive Paint Line

Consumer Appliances

Residential Water Treatment

Replace Traditional Softeners



CapDI Benefits:

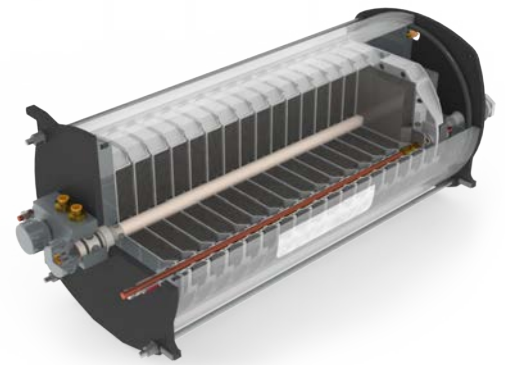
- ⚡ Unaffected by silica
- ⚡ Low fouling potential
- ⚡ No required chemicals
- ⚡ Salt-free water purification
- ⚡ High water recovery - up to 90%
- ⚡ Built-in remote monitoring and control
- ⚡ Tunable deionization - CHOOSE your desired removal
- ⚡ Removal at high and low temps (1 - 60 °C / 34 - 140 °F)
- ⚡ Automated Clean-In-Place (CIP) - minimum maintenance
- ⚡ Low energy consumption : 1.89 kWh/kgal (< 0.5 kWh/m³)
- ⚡ Environmentally responsible - no additional discharge permits

From the Inside-Out

The composition of Voltea’s CapDI Modules is the **game-changing** piece of our patented technology. Our modules are comprised of electrode stacks, where ion removal takes place by means of an electric field.

Our modules operate on a range of flows and feed water salinities, allowing implementation into a host of applications. Simple electrical terminals and water connections allow easy installation and service.

The composition of our smallest and pilot-testing Development Kit (DK) Systems include a Custom Module or VS-Series Module, while our largest Industrial Series (IS) Systems include our Industrial Series (IS) Modules, shown here. Our DiUse PoU Systems couple with the DiUse Module, and the DiEntry Module is used in our DiEntry PoE Systems.

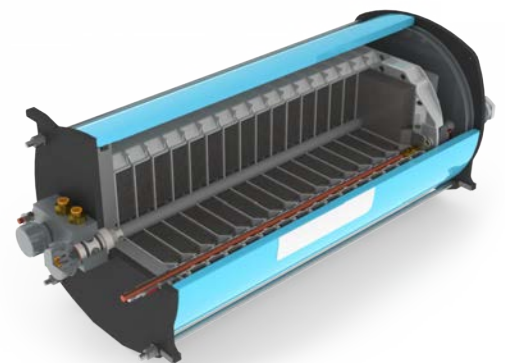


IS Module (Internal Views)

Voltea’s Innovative Modules

There are four module sizes for Voltea’s Systems, all depending on flow rate, feed salinity and targeted purified water quality. These modules have a different number of electrode “stacks” in each configuration.

CapDI System Modules are configured for both high temperature and ambient temperature applications.



IS Module (Internal View)



Custom Module

DiUse Module

DiEntry Module

IS Module

CapDI MODULE TECH SPECS

Module	Custom	DiUse	DiEntry	IS
Length	28 cm (11")			
Width	28 cm (11")			
Height	32 cm (13")	35 cm (14")	53 cm (21")	70 cm (28")
Weight	20 kg (44 lbs)	25 kg (55 lbs)	50 kg (110 lbs)	60 kg (132 lbs)
Feed Inlet Coupling	1/2" union	3/8" push fit	1/2" push fit	1/2" union
Product Outlet Coupling	1/2" union	3/8" push fit	1/2" push fit	1/2" union
Electrical Connections	2 x M8 fine threaded copper rods			
Operational Requirements				
Instant Flow Rate*	0,2 - 5 L/min (0.05 - 1.3 gpm)	0,4 - 6,3 L/min (0.1 - 1.7 gpm)	1,2 - 15 L/min (0.3 - 4 gpm)	0,1 - 1,3 m ³ /hr (0.4 - 5.8 gpm)
Net Produced Flow*	0,1 - 3 L/min (0.03 - 0.8 gpm)	0,2 - 4 L/min (0.05 - 1.1 gpm)	0,8 - 12 L/min (0.2 - 3.2 gpm)	0,1 - 0,8 m ³ /hr (0.4 - 3.5 gpm)
Maximum Pressure	10 bar (145 PSI)			
Water Temperature	5 - 60 °C (40 - 140 °F)			

*Flows are unimpeded and may be limited by system specs. Ranges modeled on 320 ppm TDS at 50% removal.

The VS-Series : Consumer Appliance Modules

MODULES : VS-SERIES

Voltea has leveraged the same robust industrial technology for smaller scale consumer appliances. These systems are the first to offer consumers the benefits of no-salt purification combined with low TDS for **increased appliance lifetime**. Design freedom and flexibility allows customization of module size, shape and geometry to fit your specific application. From washing machines to coffee makers, appliances benefit from tunable output water quality and hardness reduction.

In a single pass, at very low energy consumption and extremely high water recovery, CapDI delivers purified water to your appliances. This means higher quality water and appliance longevity for your business and home.



VS-1 Module



VS-2 Module

VS-SERIES MODULE

TECH SPECS

Module	VS-1	VS-2
Length	26,5 cm (10.4")	
Width	22,5 cm (8.9")	
Height	4 cm (1.6")	6 cm (2.4")
Weight	2,5 kg (5.5 lbs)	3,6 kg (8 lbs)
Feed Inlet Coupling	Size 10 push-in connection - female (3/8")	
Product Outlet Coupling	Size 10 push-in connection - male (3/8")	
Electrical Connections	M5 copper rod with M5 bolts	
Recommended Power Input	0 - 40 A / 0 - 2 V	0 - 80 A / 0 - 2 V
Instant Flow Rate*	0,1 - 1,5 L/min (0.03 - 0.4 gpm)	0,2 - 2,8 L/min (0.05 - 0.75 gpm)
Net Produced Flow*	0,06 - 0,9 L/min (0.02 - 0.25 gpm)	0,09 - 1,7 L/min (0.02 - 0.45 gpm)
Maximum Pressure	2 bar (29 PSI)	
Water Temperature**	5 - 30 °C (40 - 86 °F)	

* Flows are unimpeded and may be limited by system specs. Ranges modeled on 320 ppm TDS at 50% removal.

** If you wish to operate VS Modules on temperatures higher than 30°C, please contact Voltea.

EXPLORATORY CapDI

DEVELOPMENT KIT

The Development Kit (DK) System is a **versatile evaluation tool** coupled with technical support from Voltea experts. This allows for fast and simplistic exploration of the potential of CapDI for your application. Our DK System is a great way to start your purification project with Voltea, where we both get a full insight into what our CapDI technology can do for your business or home.

Our DK System couples with our VS-Series Modules or a Custom Module. By operating the reduced sized modules you can establish a baseline representation of a full size system. Included with every DK System purchase is a tailored testing program to ensure clients experience the full capabilities of CapDI technology in relation to their specific application.



DEVELOPMENT KIT TECH SPECS

	System	DK Low Range (LR)	DK High Range (HR)
Performance	Flow Rate Capacity*	0,2 - 2,5 L/min (0.1 - 0.7 gpm)	
	Salt Removal	25 - 90%	
	Water Recovery	40 - 90%	
System Specification	System Power Req.	Single - Phase (110 - 240 VAC / 50 - 60 Hz)	
	Power Output to Modules	1 - 60 A / 0 - 10 VDC	5 - 240 A / 0 - 3 VDC
	System Dimensions (L x W x H)	75 x 50 x 60 cm (2'6" x 1'8" x 1'11")	
	Service Space	0,8 m around system (2'7" around system)	
	Weight**	52 kg (114 lbs)	
	Feed Inlet Coupling	10 mm tubing push-in connection	
	Product Outlet Coupling	10 mm tubing push-in connection	
	Compatible Modules	VS-1, VS-2, Custom	Custom
System Requirements	Water Feed***	Test barrel	
	Water Temperature***	1 - 60 °C (34 - 140 °F)	
	Operating Ambient Air Temperature****	< 35 °C (< 95 °F)	
Inputs and Outputs	Control	Voltea laptop control program	
	Data Output	txt. file format for Voltea analysis template	

* Actual performance will depend on module used and settings.

** Weight without modules

*** Please contact Voltea if unavailable.

**** If higher than this, additional cooling may be required

DiUse[®] : Voltea's Point-of-Use System

SYSTEMS : DiUse

DiUse is a miniaturized version of our industrial and commercial CapDI Systems, specifically made for point-of-use (PoU) applications. DiUse purifies brackish water sources such as municipal, tap and fresh water for commercial businesses at an advantage to traditional desalination technologies due to it being a **salt-free, chemical-free alternative**. DiUse is taking the HoReCa (Hotel/Restaurant/Cafe) and Coffee industries by storm!

Connection View



Control View



DiUse Module



LISTED
WATER
PURIFIER
E480861

This product is Listed by UL. Representative samples of this product have been evaluated by UL and meet applicable safety standards.

DiUse SYSTEM TECH SPECS

	System	DiUse - Point of Use
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 Req.	0.13 kW, Single - Phase (110 - 240 VAC / 50 - 60 Hz)
	Power Output to Modules	0 - 65 A / 0 - 2 VDC
	System Dimensions (L x W x H)	0,32 x 0,43 x 0,64 m (1'0" x 1'5" x 2'1")
	Weight**	17 kg (37 lbs)
	Product Outlet Coupling	3/8" push fit
	Feed Inlet 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 / Outputs	Start / Stop	Pressure switch (standard) or external 24 VDC 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

DiEntry[®] : Voltea's Point-of-Entry System

SYSTEMS : DiEntry

DiEntry is the **next generation** of home water purification systems and addresses the most pressing water issues in the market: quality, taste and waste. DiEntry does more than purify water, it allows a home's water to be customized to the needs of the homeowner and community, all while wasting less water and improving the homeowner's environmental footprint.

DiEntry is simple to install, use and maintain, requiring no salt and a smaller overall footprint than other home water treatment systems, resulting in a lower total cost of ownership. The core technology within DiEntry, CapDI, has already been proven effective in hundreds of installations across the globe.

Our DiEntry System is coupled with our CapDI DiEntry Module. Both the module and the system have been rigorously tested and certified by NSF International against NSF/ANSI Standard 42 for materials and structural integrity requirements. This product is also Listed by UL. Representative samples of this product have been evaluated by UL and meet applicable safety standards.

Connection View



Front View



DiEntry Module



This DiEntry is Tested and Certified by NSF International against NSF/ANSI Standard 42 for materials and structural integrity requirements.



LISTED WATER PURIFIER E480861

DiEntry has unlimited benefits for homeowners, home builders, resellers and distributors of water treatment technologies! Our innovative CapDI technology allows you unprecedented control over the quality and taste of your home's water, all while reducing your environmental footprint.

DiEntry uses and wastes less water, achieving environmental responsibility and making it easy to comply with current and future sodium chloride discharge regulations. This system sets you apart from other water treatment consultants and resellers while positioning you as a more forward-thinking, smarter water professional. Pure water is just the beginning!

DiEntry SYSTEM TECH SPECS

	System	DiEntry - Point of Entry
Performance	Produced Flow Rate*	2 - 12 L/min (0.5 - 3.2 gpm)
	Instant Flow Rate*	0,6 - 15,1 L/min (0.2 - 4 gpm)
	Salt Removal	25 - 90%
	Water Recovery	40 - 90%
System Specification	Average Power Req.	0.31 kW, Single - Phase (110 - 240 VAC / 50 - 60 Hz)
	Power Output to Modules	0 - 125 A / 0 - 1.2 VDC
	System Dimensions (L x W x H)	0,4 x 0,53 x 1,05 m (1'4" x 1'9" x 3'6")
	Weight**	30 kg (67 lbs)
	Feed Inlet Coupling	3/8" push fit (1/2" adapter included)
	Product Outlet Coupling	1/2" push fit
	Concentrate/Waste Outlet Coupling	1/2" push fit
	Automatic Bypass Line	1/2" push fit
Operational Requirements	Water Feed Pressure	3 - 20 bar (43 - 290 PSI)
	Water Pressure Produced***	≤ 4,8 bar (≤ 70 PSI)
	Operating Ambient Air Temperature	< 35 °C (< 95 °F)
In / Outputs	Start / Stop	Pressure switch (standard) or external 24 VDC signal
Cleaning	Procedure	Automated chemical cleaning
	Control (Auto/Manual)	Automatic
	Storage	3 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

Modular Growth : The Industrial Series (IS) Systems

SYSTEMS : INDUSTRIAL SERIES

Voltea's Industrial Series (IS) Systems employ a simple, cost effective modular design providing **flexibility to align with both current and future water demands**. The IS Systems feature real-time, remote monitoring and control capability, as well as optional automated clean-in-place (CIP) and Dynamic Control, allowing minimal operator intervention.

Our IS Systems are used in commercial and industrial applications, from cooling towers and boiler feed to commercial laundries, for water reuse and any other application that benefits from low TDS, purified water.

The modular build of our IS Systems allows for easy expansion upon customer needs. The systems are assigned by the number of modules required, with system framing allowing for growth. Our systems are designed for operational and spatial efficiency, where our modules are situated in a horizontal manner, allowing for a smaller footprint and improved operational process.

Dynamic Control

Our Dynamic Control feature enables automated continuous control of your product water quality to account for any variations in feed water. Voltea's CapDI Systems are equipped with remote monitoring and control capabilities and once subscribed, customers enjoy peace of mind that the monitoring of their CapDI Systems is by qualified Voltea personnel to ensure optimized system performance.

Customized Solutions

Voltea's Customized Solutions afford CapDI Systems that are tailored to your specific needs. Multiple systems, as well as pre-piped and pre-wired containerized systems, are available. Our modular design allows easy expansion as your operation grows and process flow requirements increase, or alternately, integrate with pre-existing water treatment technology.



IS-2



IS-6



IS-12

Voltea's IS System design into a horizontal configuration has allowed our systems to expand into fully **24, 36, and 48 module single-systems**. This is great news for our clients with higher flow and larger volume needs! These systems can be containerized and multiple systems may be combined for even greater flows.

All technical specifications for the Industrial Series Systems are listed on the next pages.

IS-24



The Industrial Series (IS-2 - IS-48) Systems Tech Specs

SYSTEMS : INDUSTRIAL SERIES

	System	IS-2	IS-6	IS-12
Performance	Net Produced Flow	0,2 - 1 m ³ /h (0.9 - 4.4 gpm)	0,5 - 3 m ³ /h (2.2 - 13.2 gpm)	1,1 - 7 m ³ /h (4.8 - 30.8 gpm)
	Salt Removal	25 - 90 %		
	Water Recovery	40 - 90 %		
System Specification	Input Power Requirements*	1.8 kW	5.7 kW	7.2 kW
		1-ph, 110 (or 230, please specify) VAC, 50-60 Hz		
	System Dimensions L x W x H	0,86 x 0,7 x 1,3 m (2'10" x 2'4" x 4'3")	1,15 x 0,9 x 1,66 m (3'9" x 2'11" 5'6")	1,5 x 0,9 x 2,2 m (4'11" x 3' x 7'2")
	Service Space	0,8 m (2'7") from edge of system		
	Weight**	250 kg (550 lbs)	400 kg (880 lbs)	550 kg (1,210 lbs)
	Feed Inlet Coupling	.5" union	1" union	1.5" union
	Product Outlet Coupling	.5" union	1" union	1.5" union
	Concentrate/Waste Outlet Coupling	.5" union	1" union	1.5" union
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***	50 L/min (1.8 CFM)	100 L/min (3.5 CFM)	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)		
Cost	Estimated Annual Electricity Cost*	\$118	\$284	\$457

* Actual power consumption will depend on module and settings used (typically 30-60% of input power requirement).

** Weight without modules

*** Compressed air optional for IS-2

**** Without added cooling

IS-SYSTEMS TECH SPECS

IS-24	IS-36	IS-48
2 - 10 m ³ /h (8.8 - 44 gpm)	2 - 15 m ³ /h (8.8 - 66 gpm)	2,6 - 20 m ³ /h (11.5 - 88 gpm)
25 - 90 %		
40 - 90 %		
13.5 kW	18 kW	30 kW
3-ph 400 VAC or 3-ph 480 VAC and 2-ph 240 VAC	3-ph, 400 - 480 VAC / 50 - 60 Hz	
2,9 x 1,1 x 2,2 m (9'8" x 3'7" x 7'2")	4,4 x 1,1 x 2,2 m (14'3" x 3'7" x 7'1")	5,6 x 1,1 x 2,3 m (18'5" x 3'7" x 7'7")
0,8 m (2'7") from edge of system		
950 kg (2,094 lbs)	1,200 kg (2,645 lbs)	1,500 kg (3,307 lbs)
2" union		2.5" union
2" union		2.5"
2" union		2.5"
3 bar (44 PSI) at the flow rate required, max 6 bar (87 PSI)		
1 - 60 °C (34 - 140 °F)		
200 L/min (7 CFM)	300 L/min (10.5 CFM)	400 L/min (14 CFM)
@ 6 bar (87 PSI), pneumatic, size 1/2"		
< 25 °C (< 77 °F)		
Input - Potential free contact (0 - 30 VDC / 0 - 250 VAC / 0 - 5 A)		
Output - Potential free contact (24 VDC)		
\$818	\$1,338	\$1,893

CapDI GLOBAL FOO



With CapDI Systems deployed on six continents, Voltea assures customer satisfaction wherever your water innovation needs may be. From vast industrial plants to small consumer appliances, Voltea's tunable, salt-free, chemical-free, environmentally responsible CapDI technology will exceed your water purification demands.

TPRINT





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