Technical Specification
Industrial Series - IS2 to IS48 Systems

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 cleaning and Dynamic Control allowing minimal operator intervention.

IS systems are used in commercial and industrial applications, from cooling towers and boiler feed to commercial laundries and any other application that benefits from low TDS, softened water.

CapDI Benefits

- Patented Membrane Capacitive Deionization (CapDI) technology
- Tuneable TDS reduction, up to 95 %
- High water recovery, up to 95 %
- Operation at high temperature, up to 60 °C (140 °F)
- Automated cleaning
- Dynamic Control - controlled output water quality
- Complete system monitoring and feedback
- Remote control monitoring available
- Customisable system sizing to reach client needs
- Low energy usage, 0.4 - 0.8 kWh/m^3

Design and Scope of Supply

- IS Systems include built in monitoring; flow, pressure, conductivity, module voltage
- Membrane Capacitive Deionization Modules, Ambient or High Temperature
- IS System User Manual
- Voltea Remote Control Monitoring Package

IS Features

Inlet and pure outlet conductivity meters:	0 - 10 mS/cm
Total flow meter:	0 - 580 L/min (0 - 153 gpm)
System pressure:	0 - 10 bar (0 - 145 psi)
Module pressure:	0 - 6 bar (0 - 90 psi)
Automatic module air scour and system CIP	
User Interface:	HMI Panel
Voltea Remote Monitoring and Control	

(Operational range of instrument)

Feed Water Quality

Parameter	Unit	Range	Intermittent
Removal Limit	Δppm	0 - 2000	
Total Dissolved Solids	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	ppm	<4	<20
Free Chlorine	ppm	<1	<25
pH	-	2 - 10	1 - 12
Iron Total	ppm	<0,5	
Total Hardness (as $CaCO_3$)	ppm	<1000*	
M Alkalinity (as $CaCO_3$)	ppm	<1000*	
Pre-filtration	µm	5	
Temperature	°C	5 - 60	
	°F	40 - 140	
Chemicals		Contact Voltea	

**Limits depend on set TDS reduction and water recovery*

Quality Assurance

- CE Certified
- Voltea Remote Monitoring and Control package
- Systems and Modules Quality Control Tested
- Factory Acceptance Test on request
- UL on request

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IS2 - IS6 System Specification

	System	IS2	IS4	IS6
Performance *	Instant Flow Rate	0,2 - 2,1 m^3/h (1 - 9 gpm)	0,4 - 4,1 m^3/h (1.6 - 18 gpm)	0,5 - 6,1 m^3/h (2.5 - 27 gpm)
	Net Produced Flow	0,2 - 1,2 m^3/h (1 - 5 gpm)	0,4 - 2,4 m^3/h (1.6 - 10 gpm)	2,4 - 3,5 m^3/h (2.5 - 15 gpm)
	Salt Removal	25 - 95 %		
	Water Recovery	40 - 95 %		
System Specification	System Power Requirement	Single - Phase (4 kW) Specify (110 V / 60 Hz OR 220 V / 50 Hz)		
	System Dimensions length x width x height	0,8 x 0,8 x 1,4 m (2'8" x 2'8" x 4'5")	0,8 x 1,3 x 2,4 m (2'5" x 4'2" x 7'10")	
	Service Space	0,8 m from edge of system (2'7" from edge of system)		
	Weight	360 kg (800 lb)	700 kg (1500 lb)	800 kg (1800 lb)
	Feed Inlet Coupling	3/4" - G 1¼" thread (25 mm)	1" - G 1½" thread (32 mm)	
	Product Outlet Coupling	3/4" - G 1¼" thread (25 mm)	1" - G 1½" thread (32 mm)	
	Concentrate/Waste Outlet Coupling	2x 1/2" - G 1" thread (20 mm)	3/4" - G 1¼" thread (25 mm)	
Operational Requirements	Water Feed Pressure	≥ 2,1 m^3/h @ 3 bar ≥ 8 gpm @ 40 psi	≥ 4,1 m^3/h @ 3 bar ≥ 16 gpm) @ 40 psi	≥ 6,1 m^3/h 3 bar @ ≥ 25 gpm @ 40 psi
	Water Temperature	5 - 60 °C (40 - 140 °F)		
	Compressed Air Line	170 l/min @ 6 bar, pneumatic, size 3/8" (6 CFM @ 90 psi, pneumatic)		
	Operating Ambient Air Temperature (w/o added cooling)	5 - 25 °C (40 - 77 °F)		
Inputs / Outputs	Start/Stop	Input - Potential free contact (0 - 30 V DC / 0 - 250 V AC / 0 - 5 A)		
	External Pump	Output - Potential free contact (24 V DC)		

* Actual performance will depend on module used and settings

IS8 - IS12 System Specification

	System	IS8	IS10	IS12
Performance *	Instant Flow Rate	0,7 - 8,2 m^3/h (3 - 36 gpm)	0,9 - 10,2 m^3/h (4 - 45 gpm)	1,1 - 12,2 m^3/h (6 - 54 gpm)
	Net Produced Flow	0,7 - 4,7 m^3/h (3 - 20 gpm)	0,9 - 5,9 m^3/h (4 - 26 gpm)	1,1 - 7,0 m^3/h (6 - 31 gpm)
	Salt Removal	25 - 95 %		
	Water Recovery	40 - 95 %		
System Specification	System Power Requirement	Single - Phase (110 - 240 V / 50 - 60 Hz / 4 kW) 3 - Phase (400 - 480 V / 50 - 60 Hz / 3,5 kW)		
	System Dimensions length x width x height	1,1 x 1,5 x 2,4 m (3'7" x 4'11" x 7'10")		
	Service Space	0,8 m from edge of system (2'7" from edge of system)		
	Weight	1100 kg (2400 lbs)	1200 kg (2600 lbs)	1300 kg (2900 lbs)
	Feed Inlet Coupling	1 ½" - G 2¼" thread (50 mm)		
	Product Outlet Coupling	1 ½" - G 2¼" thread (50 mm)		
	Concentrate/Waste Outlet Coupling	2x 1 ½" - G 2¼" thread (50 mm)		
Operational Requirements	Water Feed Pressure	≥ 8,2 m^3/h @ 3 bar ≥ 30 gpm @ 40 psi	≥ 10,2 L/min @ 3 bar ≥ 40 gpm @ 40 psi	≥ 12,2 L/min @ 3 bar ≥ 50 gpm @ 40 psi
	Water Temperature	5 - 60 °C (40 - 140 °F)		
	Compressed Air Line	170 l/min @ 6 bar, pneumatic, size 3/8" (6 CFM @ 90 psi, pneumatic)		
	Operating Ambient Air Temperature (w/o added cooling)	5 - 25 °C (40 - 77 °F)		
Inputs / Outputs	Start/Stop	Input - Potential free contact (0 - 30 V DC / 0 - 250 V AC / 0 - 5 A)		
	External Pump	Output - Potential free contact (24 V DC)		

* Actual performance will depend on module used and settings

IS24 - IS48 System Specification

	System	IS24	IS36	IS48
Performance *	Instant Flow Rate*	2,2 - 17,3 m^3/h (10 - 76 gpm)	3,2 - 25,9 m^3/h (14 - 114 gpm)	4,3 - 34,6 m^3/h (19 - 152 gpm)
	Net Produced Flow*	2,2 - 10,0 m^3/h (10 - 44 gpm)	3,2 - 15,0 m^3/h (14 - 65 gpm)	4,3 - 20,0 m^3/h (19 - 87 gpm)
	Salt Removal	25 - 95 %		
	Water Recovery	40 - 95 %		
System Specification	System Power Requirement	3 - Phase with neutral (400 - 500 V / 50 - 60 Hz)		
		15 kW	23 kW	30 kW
	System Dimensions length x width x height	3.1 x 1,0 x 2,3 m (10'1" x 3'3" x 7'7")	4.6 x 1,0 x 2,3 m (12'2" x 3'3" x 7'7")	5.3 x 1,0 x 2,3 m (17'4" x 3'3" x 7'7")
	Service Space	0,8 m from edge of system (2'7" from edge of system)		
	Weight	2300 kg (5000 lbs)	3200 kg (7000 lbs)	4000 kg (9000 lbs)
	Feed Inlet Coupling	2" - G 2 ¾" thread (63 mm)		
	Product Outlet Coupling	2" - G 2 ¾" thread (63 mm)	2 ½" (75 mm)	
	Concentrate/Waste Outlet Coupling	2" - G 2 ¾" thread (63 mm)	2 ½" (75 mm)	
Operational Requirements	Water Feed Pressure	≥ 17,3 m^3/h @ 3 bar ≥ 80 gpm @ 40 psi	≥ 25,9 m^3/h @ 3 bar ≥ 120 gpm @ 40 psi	≥ 34,6 m^3/h @ 3 bar ≥ 160 gpm @ 40 psi
	Water Temperature	5 - 60 °C (40 - 140 °F)		
	Compressed Air Line	340 L/min (12 CFM)	510 L/min (18 CFM)	680 L/min (24 CFM)
		@ 6 bar (90 psi), pneumatic, size ½"		
	Operating Ambient Air Temperature (w/o added cooling)	5 - 25 °C (40 - 77 °F)		
Inputs / Outputs	Start/Stop	Input - Potential free contact (0 - 30 V DC / 0 - 250 V AC / 0 - 5 A)		
	External Pump	Output - Potential free contact (24 V DC)		

* Actual performance will depend on module used and settings