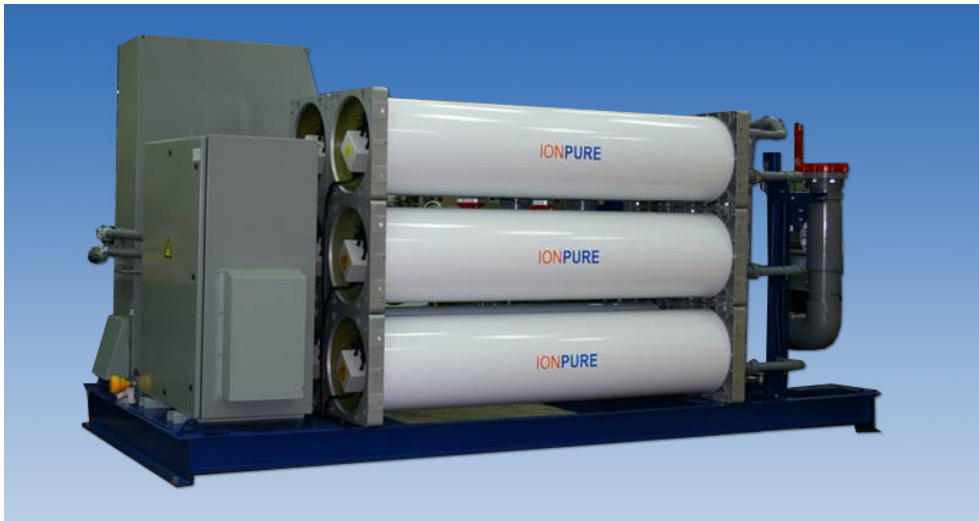


# ElectroFlex™ Electro-Deionization Systems



## Typical Applications:

- Power Generation: Steam makeup water
- Petrochemical: Steam makeup water
- All Industrial applications where demineralized or deionized water is needed for ultrapure processes

Graver's ElectroFlex EDI systems are factory assembled skids that are pre-engineered and designed to meet the purified water demands of the power, microelectronics, and general industry markets. These systems also provide continuous quality as well as 40-50% lower operating costs when compared to mixed bed DI. All this is accomplished using a combination of selective ion exchange membranes, ion exchange conductive resins, and electricity to remove ions from water rather than costly hazardous chemicals.

## Advantages Over Mixed Bed Demineralization

- Complete internal control over water system – nothing leaves or comes into plant
- No inconsistent performance due to poor regenerations
- Continuous, not batch operation
- No disruptive regenerations
- No bulk storage of regeneration chemicals
- No waste neutralization required for regeneration chemicals
- Smaller system floor space creates more facility space for other uses
- No risk of cross contamination with other customer resins
- Reduction of environmental, health and safety risks

## Savings

- Uses only electricity instead of chemicals to regenerate
- No need for bulk acid/caustic storage
- No need for regeneration system or neutralization system
- Recycle of EDI reject (quality is better than RO feed)
- Can be recycled upstream to the RO feed for 100% recovery, zero waste production
- Water savings on both the processing and waste ends
- Or reject can be discharged with no further treatment
- Reduction in labor
- 50-75% less floorspace than ion exchange based demineralization

## Typical Feedwater Specifications:

Type	RO permeate or equivalent
FCE	<40 $\mu\text{S}/\text{cm}$
Temperature	41–113°F (5–45°C)
Pressure	20-100 psig (1.4 – 7 bar)
Total $\text{Cl}_2$	< 0.02 ppm as $\text{Cl}_2$
Fe, Mn, S-	< 0.01 ppm
pH	4 - 10
Hardness	< 1 ppm as $\text{CaCO}_3$
Silica	< 1 ppm as $\text{SiO}_2$
TOC	< 0.5 ppm as C

## Typical Product Water Quality:

Product Resistivity	>16 $\text{M}\Omega\text{-cm}$ (<0.1 $\mu\text{S}$ )
Silica Removal	~99%

Note: Actual performance may be determined using projection software.

# ElectroFlex™ Electro-Deionization Systems



## Specifications

Model	Product Flow			Typical % Recovery	No. of Modules	Pipe Size (in)			Max Power Req.	
	GPM	GPD	M <sup>3</sup> /D			Feed	Product	Reject	DC V	DC Amps
ElectroFlex-15	15	21,600	82	up to 95%	1	1"	1"	3/8"	400	6.0
ElectroFlex-22	22	31,680	120	up to 95%	1	1 1/2"	1 1/2"	3/8"	600	6.0
ElectroFlex-55	55	79,200	300	up to 95%	1	2"	2"	3/4"	600	13.2
ElectroFlex-110	110	158,400	600	up to 95%	2	3"	3"	1"	600	26.4
ElectroFlex-165	165	237,600	899	up to 95%	3	4"	4"	1 1/2"	600	39.6
ElectroFlex-220	220	316,800	1,199	up to 95%	4	4"	4"	1 1/2"	600	52.8
ElectroFlex-275	275	396,000	1,499	up to 95%	5	4"	4"	1 1/2"	600	66.0
ElectroFlex-330	330	475,200	1,799	up to 95%	6	6"	6"	1 1/2"	600	79.2
ElectroFlex-385	385	554,400	2,098	up to 95%	7	6"	6"	2"	600	92.4
ElectroFlex-440	440	633,600	2,398	up to 95%	8	6"	6"	2"	600	105.6

Feedwater Conductivity Equivalent (FCE) <40 uS/cm, Silica < 1 ppm - Fe, Mn, H<sub>2</sub>S < 0.1 ppm - Temperature 41-113°F (5-45°C)  
FCE is the the total of dissolved ions, silica and carbon dioxide.

## Dimensions

Model	Estimated Machine Dimensions and Weights								Estimated Shipping Dimensions and Weights							
	Length		Width		Height		Weight		Length		Width		Height		Weight	
	in	cm	in	cm	in	cm	lb	kg	in	cm	in	cm	in	cm	lb	kg
ElectroFlex-15	40	102	35	89	35	89	450	203	60	152	55	140	65	165	700	315
ElectroFlex-22	50	127	35	89	40	102	550	248	70	178	55	140	70	178	850	383
ElectroFlex-55	125	318	35	89	50	127	760	342	145	368	55	140	80	203	1,060	477
ElectroFlex-110	125	318	35	89	55	140	1,500	675	145	368	55	140	85	216	1,850	833
ElectroFlex-165	140	356	35	89	65	165	2,760	1,242	160	406	55	140	95	241	3,110	1,400
ElectroFlex-220	140	356	35	89	80	203	3,460	1,557	160	406	55	140	110	279	3,860	1,737
ElectroFlex-275	140	356	60	152	65	165	4,160	1,872	160	406	80	203	95	241	4,560	2,052
ElectroFlex-330	140	356	60	152	65	165	4,860	2,187	160	406	80	203	95	241	5,260	2,367
ElectroFlex-385	140	356	60	152	80	203	5,560	2,502	160	406	80	203	110	279	5,960	2,682
ElectroFlex-440	140	356	60	152	80	203	6,260	2,817	160	406	80	203	110	279	6,680	3,006

Optional features may change the above dimensions and weights.

## Standard Design Features

- Industry-leading EDI modules
- Product resistivity meter
- Digital display flow meters (Product & Reject)
- Liquid filled, 316 stainless steel pressure gauges
- PVC Schedule 80 piping and valves
- Cleaning ports
- Feed flow switch
- NEMA-4 electric enclosure
- Automatic inlet shut-off valve
- Frame: Welded steel, powder coated
- Sample valves

## Optional Design Features

- pH meter
- 50 HZ system
- High resistivity diversion
- Stainless steel piping

## Contact Us

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