

EDR-Q™

ELECTRODIALYSIS REVERSAL



EDR-Q™ is an innovative electro dialysis reversal solution for water and process applications across food & beverage, wineries, dairy, pharma, semiconductor and steel & aluminum industries.

EDR-Q operates by applying an electric potential across stacks of ion-exchange membranes to remove dissolved contaminants such as salts, hardness ions, and nitrates.

For water and wastewater treatment, EDR-Q can function as a standalone polishing step for MF/UF permeate, or as a final water recovery step with RO reject upstream of a zero liquid discharge system. Its high impurity rejection also makes EDR-Q well suited to lithium concentration and recovery.

EDR-Q is available in three variants:

- 100X (1.5-3.0 m³/hr)
- 200X (3.0-6.0 m³/hr)
- 300X (4.5-9.0 m³/hr)

APPLICATIONS

- Whey de-ashing
- High-grade protein separation
- Acid-alkali recovery
- Lithium concentration and recovery
- Tartrate stabilization
- MF/UF permeate polishing
- Water recovery from RO reject

FEATURES

- High tolerance of silica and sulfates, reducing scaling potential.
- High turbidity tolerance (<1.0 NTU) eliminates need for RO pretreatment.
- Up to 95% water recovery.
- Compact footprint.
- Low-chemical CIP procedure.
- In-situ cleaning driven by frequent polarity reversal to control scaling and fouling.
- Multi-stack assembly for parallel operation to meet high-flow applications.



EDR-Q 100X
1.5-3.0 m³/hr
6.6-13.2 gpm



EDR-Q 200X
3.0-6.0 m³/hr
13.2-26.4 gpm



EDR-Q 300X
4.5-9.0 m³/hr
19.8-39.6 gpm

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STACK & OPERATING PARAMETERS

Parameter	Unit	EDR-Q 100X	EDR-Q 200X	EDR-Q 300X
Number of Cell Pairs	-	100	200	300
Total Membrane Area (Effective)	m ²	72	144	216
Min Flow (Dilute & Concentrate)	m ³ /hr gpm	1.5 6.6	3.0 13.2	4.5 19.8
Typical Flow (Dilute & Concentrate)	m ³ /hr gpm	2.0 8.8	4.0 17.6	6.0 26.4
Max Flow (Dilute & Concentrate)	m ³ /hr gpm	3.0 13.2	6.0 26.4	9.0 39.6
Desalination Rate	%	20-70	20-70	20-70
Max Feed Pressure	kg/cm ² psi	2.1 30.0	2.1 30.0	2.1 30.0
Max Pressure Diff. (Inlet-Outlet)	kg/cm ² psi	1.05 15.0	1.05 15.0	1.05 15.0
Max Pressure Diff. (Dilute-Concentrate)	kg/cm ² psi	0.07 1.0	0.07 1.0	0.07 1.0
Water Recovery	%	Up to 95	Up to 95	Up to 95
Membrane Type		Anion & Cation IX		
Electrode Rinse Flow Rate	m ³ /hr gpm	2 × 0.2 2 × 0.88		

FEED WATER SPECIFICATIONS

Parameter	Unit	Specification
pH	-	2 - 10
CIP pH	-	1 - 14
Temperature	°C °F	5 - 40 41 - 104
Feed Turbidity	NTU	< 1.0
Feed TDS (Typical)	mg/L	3,000
Feed Water TDS (Maximum)	mg/L	10,000
COD	ppm	< 50
TOC	ppm	< 10
Heavy Metals (Fe, Mn, Al)	ppm	< 0.5
Free Chlorine as Cl ₂	ppm	< 0.2
Feed SDI (5-minute test)	-	< 10
Oil & Grease	ppm	< 1

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STACK SPECIFICATIONS

Parameter	Unit	EDR-Q 100X	EDR-Q 200X	EDR-Q 300X
Port Connections (Dilute & Concentrate)	inch	2" Victaulic	2" Victaulic	2" Victaulic
Port Connections (Electrode Rinse)	mm	12 mm push fit	12 mm push fit	12 mm push fit
Membrane Type	-	Anion & Cation IX	Anion & Cation IX	Anion & Cation IX
Electrode Rinse Flow Rate	m ³ /hr gpm	2 × 0.2 2 × 0.88	2 × 0.2 2 × 0.88	2 × 0.2 2 × 0.88
DC Voltage*	VDC	0-200	0-400	0-500
DC Current*	ADC	0-50	0-50	0-50
Stack Weight	kg lbs	500 1102	660 1455	820 1808
Shipping Weight (Net)	kg lbs	700 1543	860 1896	1120 2469
Configuration		Vertical	Horizontal	Horizontal
Dimensions (L × W × H)	mm	699 × 630 × 1506	1506 × 630 × 1330	1506 × 630 × 1660
	inch	27.5 × 24.8 × 59.3	59.3 × 24.8 × 52.4	59.3 × 24.8 × 65.4
Stack Electrical Connection	-	2 x M-12 Lug 16 sq.mm		
Electrical Cable Details	-	16 sq.mm cable		

* Consult EDR-Q software for actual operating voltage & current.

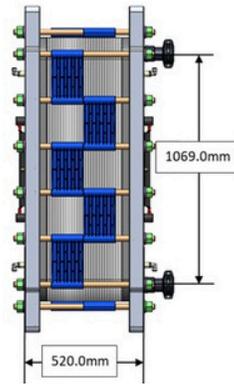
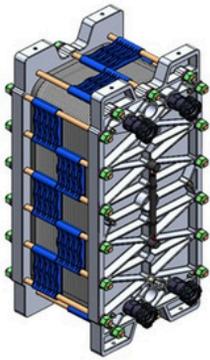
EDR-Q™

ELECTRODIALYSIS REVERSAL

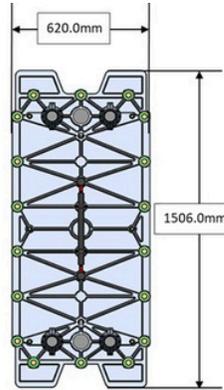


EDR-Q STACK GENERAL ARRANGEMENT (GA)

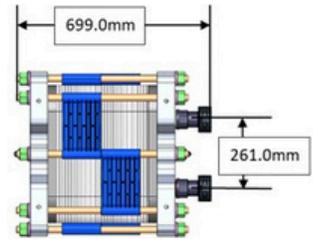
EDR-Q 100X



Front view

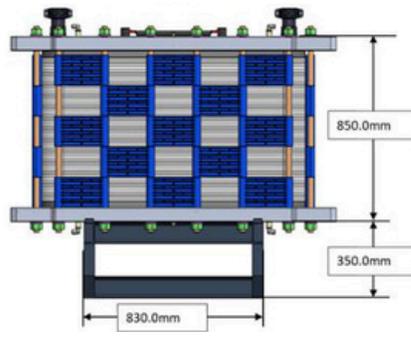
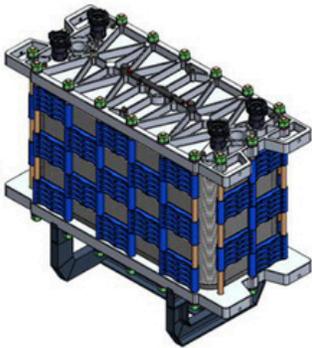


Side view

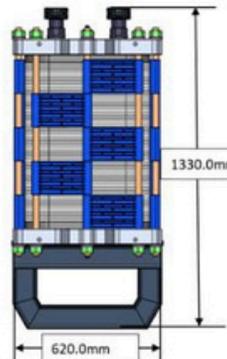


Top view

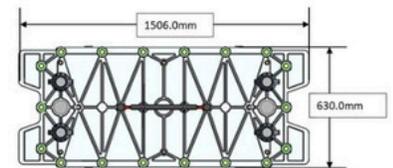
EDR-Q 200X



Front view

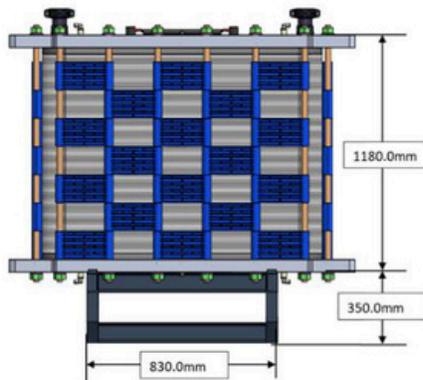
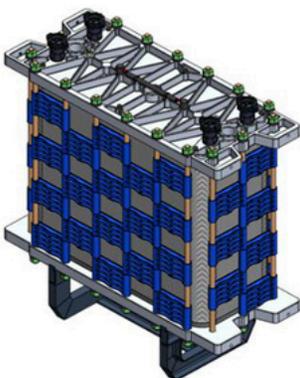


Side view

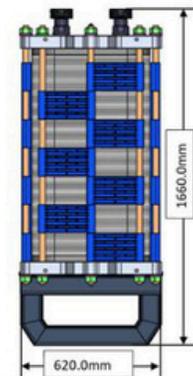


Top view

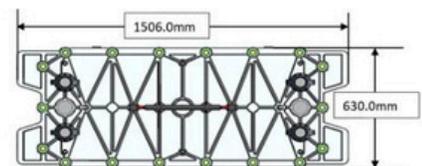
EDR-Q 300X



Front view



Side view



Top view