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E-Cell-3X Stack

Industrial Electrodeionization (EDI) Stacks

E-Cell*-3X is designed to:

- Provide Ultrapure Water for industrial applications including Power, Semiconductor, and General Industry.
- Produce Mixed Bed quality water on a continuous basis.
- Require no caustic or acid for regeneration of ion exchange resin within the stack.
- Be leak free, guaranteed.
- Eliminate brine injection and concentrate recirculation, simplifying system design.

Description and Use

E-Cell-3X stacks are electrodeionization (EDI) stacks which use electrical current to deionize and polish reverse osmosis (RO) permeate water. The product water for the E-Cell-3X is at an Ultrapure level required in today's demanding applications.

Typical Applications

- Microelectronics
- Power Generation (NOx, Boiler Feed)
- General Industry

Quality Assurance

- CE, UL & CSA marked
- Manufactured in a ISO 9001:2000 facility

E-Cell-3X Stack Specifications		
Nominal Flow	5.0 m^3/hr	22.0 gpm
Flow Rate Range	2.27 – 6.36 m^3/hr	10 – 28 gpm
Shipping Weight	135 kg	298 lbs
Dimensions (width x height x depth)	31cm x 61cm x 66cm	12" x 24" x 26"

Typical Performance		
Product Quality		
Resistivity	> 16 MOhm-cm	
Sodium	< 3 ppb	
Silica (SiO2) Removal	Up to 99% or < 5 ppb	
Boron Removal	> 95%	
Operating Parameters		
Recovery	Up to 95%	
Concentrate Flow	Counter current to Product Flow[1]	
Voltage	0–400 VDC	
Amperage	0–5.2 ADC	
Inlet Pressure at Nominal Flow	4.1–6.9 bar	60–100 psi
Pressure Drop at Nominal Flow	1.4–2.8 bar	20–40 psi

Maximum Feed Water Specifications		
Feed Water - Total Exchangeable Anions (TEA as $CaCO_3$)	<25 mg/l	<25 ppm
Feed Water – Conductivity, $NaHCO_3$ equivalent	< 43 µS/cm	< 43 µS/cm
Temperature	5–40˚C	40–104˚F
Total Hardness (as $CaCO_3$)	< 1.0 mg/l	< 1.0 ppm
Silica (SiO_2)	< 1.0 mg/l	< 1.0 ppm
Total Organic Carbon (TOC as C)	< 0.5 mg/l	< 0.5 ppm
Total Chlorine	< 0.05 mg/l	< 0.05 ppm

Actual performance may vary depending on site conditions. Reference E-Calc projection software to verify actual performance. Patents pending.

[1] Co-flow operation is acceptable when feed hardness concentrations are <0.1 ppm as $CaCO_3$.

E-Cell Stacks						
Product Description	**Application**	**Nominal Flow**	**Flow Range**	**Resistivity**	**Nominal Recovery**	**Hardness**
E-Cell-3X	Industrial	22 gpm 5.0 m^3/hr	10 – 28 gpm 2.3 to 6.4 m^3/hr	> 16 MOhm-cm	87-95%	< 1.0 ppm
E-Cell MK-3	Industrial	15 gpm 3.4 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 16 MOhm-cm	87-95%	< 1.0 ppm
E-Cell MK-3Pharm	Pharmaceutical	15 gpm 3.4 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 10 MOhm-cm	87-95%	< 1.0 ppm
E-Cell MK-3PharmHT	Pharmaceutical Hot water Sanitizable	15 gpm 3.4 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 10 MOhm-cm	87-95%	< 1.0 ppm
E-Cell MK-3Mini	Industrial Pharmaceutical	5 gpm 1.1 m^3/hr	2.5 to 6.5 gpm 0.6 to 1.5 m^3/hr	> 16 MOhm-cm	78-93%	< 1.0 ppm
E-Cell MK-3MiniHT	Industrial / Pharm Hot water Sanitizable	5 gpm 1.1 m^3/hr	2.5 to 6.5 gpm 0.6 to 1.5 m^3/hr	> 10 MOhm-cm	78-93%	< 1.0 ppm
MK-2 Generation stacks are only provided as replacement stacks to support existing system installations.						
E-Cell MK-2E	Industrial	15 gpm 3.4 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 16 MOhm-cm	90-95%	< 0.5 ppm
E-Cell MK-2Pharm	Pharmaceutical	18 gpm 4.1 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 10 MOhm-cm	90-95%	< 0.5 ppm
E-Cell MK-2PharmHT	Pharmaceutical Hot water Sanitizable	18 gpm 4.1 m^3/hr	7.5 – 20 gpm 1.7 to 4.5 m^3/hr	> 10 MOhm-cm	90-95%	< 0.5 ppm
E-Cell MK-2Mini	Industrial Pharmaceutical	5 gpm 1.1 m^3/hr	2.5 to 6.5 gpm 0.6 to 1.5 m^3/hr	> 16 MOhm-cm	90-95%	< 0.5 ppm
E-Cell MK-2MiniHT	Industrial / Pharm Hot water Sanitizable	5 gpm 1.1 m^3/hr	2.5 to 6.5 gpm 0.6 to 1.5 m^3/hr	> 10 MOhm-cm	90-95%	< 0.5 ppm

Other stack details can be found on the stack specific Fact Sheets.