

E-Cell-3X Stack

Industrial Electrodeionization (EDI) Stacks



Figure 1: E-Cell-3X Stack

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 (Figure 1). The product water for the E-Cell-3X is at an Ultrapure level required in today's most demanding applications.

Typical Applications

- Microelectronics
- Power Generation (NO_x, 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	2.3 – 6.4 m ³ /hr	10 – 28 gpm
Shipping Weight	135 kg	298 lbs
Dimensions (width x height x depth)	31cm x 61cm x 64cm	12" x 24" x 26"

Typical Performance

Product Quality		
Resistivity	> 16 MOhm-cm	
Sodium	< 3 ppb	
Silica (SiO ₂) Removal	Up to 99% or < 5 ppb	
Boron Removal	> 95%	
Operating Parameters		
Recovery	Up to 97%	
Concentrate Flow (vs. Product Flow)	Countercurrent, hardness ≥0.10 ppm as CaCO ₃ Cocurrent, hardness <0.10 ppm as CaCO ₃	
Voltage	0–400 VDC	
Amperage	0–5.2 ADC	
Inlet Pressure	3.1–6.9 bar	45–100 psi
Pressure Drop	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	4.4–40°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.