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E-Cell* MK-3PharmHT Stack

Hot Water Sanitizable E-Cell for Pharmaceutical Applications

E-Cell MK-3PharmHT is the only pharmaceutical electrodeionization (EDI) stack designed to:

- Provide ultrapure water for pharmaceutical applications
- Hot Water Sanitizable up to 185°F (85°C) for 160 cycles
- Operate with no concentrate recirculation and no brine injection
- Require no stack bolt tightening
- Be leak free, guaranteed
- Operate at low power, <300VDC

Description and Use

E-Cell MK-3PharmHT Stacks are hot water sanitizable EDI stacks, which use electrical current to deionize and polish reverse osmosis (RO) permeate water. The product water quality for the system is at greater than USP quality levels required in today's pharmaceutical applications.

Typical Application

- Pharmaceutical
- Laboratory

Quality Assurance

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

MK-3PharmHT Stack Specifications		
Nominal flow	4.1 m^3/h	18.0 gpm
Flow rate range	1.6 to 4.6 m^3/h	7.0 to 20.0 gpm
Shipping weights	92 kg	202 lbs
Dimension (width x height x depth)	30cm x 61cm x 48cm	12" x 24" x 19"

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

Typical Performance		
Product Quality		
Resistivity	> 10 MOhm-cm	
TOC (as C)	< 500 ppb	
Hot Water Sanitization		
No. of 1hr sanitization cycles	160 cycles	
Sanitization temperature	176 to 185°F	80 to 85°C
Max. sanitization inlet pressure	2.1 bar	30 psi
Operating Parameters		
Recovery	Up to 95%	
Concentrate flow	Counter current - Standard Co-current – <0.1ppm (as $CaCO_3$) feed hardness	
Voltage	0 to 300 VDC	
Amperage	0 to 5.2 ADC	
Inlet Pressure (Counter current) (Co-current)	4.1 to 6.2 bar 3.1 to 6.2 bar	60 to 90 psi 45 to 90 psi
Pressure drop at nominal flow	1.4 to 2.4 bar	20 to 35 psi

Maximum Feedwater Specifications		
Feedwater - Total Exchangeable Anions (TEA as $CaCO_3$)	<25 mg/l	<25 ppm
Feedwater – Conductivity, $NaHCO_3$ equivalent	< 43 µS/cm	< 43 µS/cm
Temperature	4.4 to 40°C	40 to 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

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