MemBrain®

MEMBRANE INNOVATION CENTRE

ELECTRODEIONIZATION STACK RALEX® MPure™ 6

APPLICATION:

MPure™ electrodeionization (EDI) stacks are used for the production of high purity water for the power generation, semiconductor, chemical and other industries.

DESCRIPTION:

EDI produces high purity water continuously without the use of hazardous regeneration chemicals required for the conventional mixed-bed process. The novel MPure™ stacks are capable of producing up to 18 MΩ·cm quality at a high recovery.

MPure™ stacks rely on MEGA´s ion-exchange membrane manufacturing capability and extensive experience in the field of electromembrane separation processes. All stacks include RALEX® ion-exchange membranes developed by MemBrain.

FEATURES:

- Excellent demineralisation performance
- Robust design without internal and external leaks
- Small footprint
- Voltage stability
- Effective replacement for competing EDI technology

FEED WATER SPECIFICATIONS

Parameter	Value
Feed water source	RO permeate
Temperature [°C]	5 – 40
TEA [mg/L as $CaCO_3$]	< 25
TEC [mg/L as $CaCO_3$]	< 25
Oxidizers (chlorine or chloramine, ozone) [mg/L Cl_2]	< 0.05
Heavy metals (Fe, Mn) [mg/L]	< 0.01
(Hydrogen)sulfides [mg/L]	< 0.01
Oils, greasy substances [mg/L]	#ND*
Detergents [mg/L]	#ND*
Suspended and colloidal matter [mg/L]	#ND*
Turbidity [NTU]	< 0.1
Silt density index SDI15	< 1
Microorganisms [cfu]	#ND*
Hardness [mg/L as $CaCO_3$]	< 1
Organic substances [mg/L TOC]	< 0.5
Silica (dissolved) [mg/L SiO_2]	< 1

*below the detection limit

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RALEX® MPure™ 6 stack

Physical Specifications

Number of cell pairs	6
Dimensions (W×H×D) [mm]	584 x 811 x 251
Weight [kg]	121

Performance

Product flow min. – max. (nominal) [L/h]	833 – 2500 (1670)
Concentrate flow [L/h]	50 – 330
Electrode flow [L/h]	100 – 200
Typical recovery [%]	80 – 94
Feed water pressure [bar]	< 5
Product pressure drop at nominal flow [bar]	1.1 – 2.5
Current [A]	< 16
Voltage [V DC]	< 50
Product water quality [µS/cm]	0.055 – 0.2*

**Actual performance depends on site conditions. Use the MPure™ Design projection software to predict the product quality and operating conditions.*

Stack dimensions: