

## ELECTRODEIONIZATION UNIT MPure6

### APPLICATION

MPure electrodeionization (EDI) unit is used for the production of high purity water for the power, semiconductor and chemical industry. EDI produces high purity water continuously without the use of hazardous regeneration chemicals required for a mixed bed process.

### MPure UNIT DESCRIPTION

MPure6 is a manual EDI unit equipped by one EDI module. Processing medium is RO permeate. The unit assumes connections for a tank of RO permeate.

The unit is able to automatically turn on or off according to the tank level of RO permeate. However, it can be managed only manually (electric current, flows, pressures etc.). There is possibility to manually subtract the flow on the rotameter, pressures gauges, electric current and voltage on the panels to the DC source and the conductivity of the product at the appropriate converter.

All parts of the device are placed on a common carrier frame. The device is compact and therefore easy to handle. Pipelines are made of PVC.

### MPure STACK DESCRIPTION

MPure stacks are building on MEGA's ion-exchange membrane manufacturing capability and extensive electroseparation experience. All stacks include RALEX® ion exchange membranes developed by MemBrain. The novel MPure stack produces 0,055 - 0,2  $\mu\text{S}/\text{cm}$  product water quality at high recovery.

### FEATURES

- High deionization with recovery up to 94 %
- Robust design: no internal or external leaks
- Small footprint: ideal for operation inside containers
- Voltage stability
- Effective replacement for competing EDI technology
- therefore easy to handle. Pipelines are made of PVC.



EDI Module

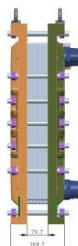


Illustration photo: unit EDI

**FEED WATER SPECIFICATIONS**

| Parameter                                    | Value                 |
|--|-----------------------|
| TEA and TEC [mg/l CaCO <sub>3</sub> ]        | < 25                  |
| Feed water source                            | RO permeate or better |
| pH   | 4 – 10                |
| Temperature [°C]                             | 5 – 40                |
| Free Cl <sub>2</sub> [mg/l Cl <sub>2</sub> ] | < 0.01                |
| Oxidizing agents                             | #ND*                  |
| Metals (Fe, Mn) [mg/l]                       | < 0.01                |
| (Hydrogen)sulfides [mg/l]                    | < 0.01                |
| Oils, greasy substances, 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 CaCO <sub>3</sub> ]           | < 1                   |
| Organic substances [mg/l TOC]                | < 0.5                 |
| Silica (dissolved) [mg/l SiO <sub>2</sub> ]  | < 1                   |

\*below the detection limit

**ELECTRODEIONIZATION UNIT MPure6**

|                         |                            |
|-------------------------|----------------------------|
| Number of modules       | 1                          |
| Electrical Requirements | 3x 400 VAC 50 Hz TN-S      |
| Dimensions (W×H×D)      | Approx. 140 x 120 x 200 cm |
| Weight                  | Approx. 150 kg             |

**RALEX® EDI STACK MPure6 - PHYSICAL SPECIFICATIONS**

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

**RALEX® EDI STACK MPure6 - PERFORMANCE**

|                                     |                       |
|-------------------------------------|-----------------------|
| Product flow min. – max. (nominal ) | 835 – 2505 (1670) l/h |
| Concentrate flow                    | > 50 l/h              |
| Electrode flow                      | > 100 l/h             |
| Recovery                            | 80 – 94 %             |
| Feed pressure                       | < 500 kPa             |
| Pressure drop D at nominal flow     | 110 – 250 kPa         |
| Temperature                         | 5–40 °C               |
| Current                             | < 16 A                |
| Voltage                             | < 50 V DC             |
| Product water quality               | 0,055 - 0,2 µS/cm*    |

\*Actual performance will depend on site conditions. It is necessary to determine actual performance.