RALEX® EDI MPure™ MODULES

APPLICATION:

MPure™ electrodeionization (EDI) modules are 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.

DESCRIPTION:

MPure™ modules are building on MEGA´s ion-exchange membrane manufacturing capability and extensive electroseparation experience. All modules include RALEX® ion exchange membranes developed by MEGA.

The novel MPure™ module produces 16 to 18 MΩ·cm product water quality at very high recovery. These modules are designed to replace mixed bed ion exchange at flow rates from 0.8 to 500 m^3/h (3.7 to 2000 gpm) and beyond.

FEATURES:

- Module interconnection capability for low cost system construction
- High flow rate modules up to 15 m^3/h
- High deionization with recovery up to 97.5 %
- Robust design: no internal or external leaks
- Small footprint: ideal for operation inside containers
- Voltage stability
- Effective replacement for competing EDI technology
- Complete OEM engineering package

MPure™ 36, MPure™ 12, MPure™ 6

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PRODUCT DATA SHEET

ATS WATER TECHNOLOGY

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Physical Specifications		MPure36	MPure12	MPure6
Number of cell pairs		36	12	6
Dimensions (W×H×D)		582×802×697 mm (22.9×31.6×27.4 inch)	584×811×335 mm (22.9×31.9×13.2 inch)	584×811×251 mm (22.9×31.9×9.9 inch)
Shipping weight		330 kg (728 lbs)	157 kg (346 lbs)	121 kg (267 lbs)
Operating weight		350 kg (772 lbs)	163 kg (359 lbs)	124 kg (273 lbs)
Hydraulic Connections	D	2½" (73 mm) victaulic	2½" (73 mm) victaulic	2½" (73 mm) victaulic
	C	1¼" (42.4 mm) victaulic	1¼" (42.4 mm) victaulic	1¼" (42.4 mm) victaulic
	E	¾" (29.6 mm) victaulic	¾" (29.6 mm) victaulic	¾" (29.6 mm) victaulic

Typical Performance	MPure36	MPure12	MPure6
Flow nominal	10 m^3/h (44 gpm)	3.33 m^3/h (14.7 gpm)	1.67 m^3/h (7.4 gpm)
Flow maximum	15 m^3/h (66 gpm)	5 m^3/h (22 gpm)	2.5 m^3/h (11 gpm)
Flow minimum	5 m^3/h (22 gpm)	1.67 m^3/h (7.4 gpm)	0.83 m^3/h (3.7 gpm)
Concentrate flow	> 0.3 m^3/h (> 1.3 gpm)	> 0.1 m^3/h (> 0.4 gpm)	> 0.05m^3/h (> 0.2 gpm)
Electrode flow	> 0.1 m^3/h (> 0.4 gpm)	> 0.1 m^3/h (> 0.4 gpm)	> 0.1 m^3/h (> 0.4 gpm)
Recovery	< 97.4 %	< 96.2 %	< 94.3 %
Feed pressure	< 7 bar (< 102 psi)	< 5 bar (< 72.5 psi)	< 5 bar (< 72.5 psi)
Pressure drop D at nominal flow	1.3–2.3 bar (19–33 psi)	1.1–2.5 bar (16–36 psi)	1.1–2.5 bar (16–36 psi)
Pressure difference D>C	> 0.3 bar (> 4 psi)	> 0.3 bar (> 4 psi)	> 0.3 bar (> 4 psi)
Temperature	5–40 °C (41–104 °F)	5–40 °C (41–104 °F)	5–40 °C (41–104 °F)
Current	< 16 A	< 16 A	< 16 A
Voltage	< 300 V	< 100 V	< 50 V
Product water quality	> 16 MΩ·cm*	> 16 MΩ·cm*	> 16 MΩ·cm*
Silica removal	> 96 %	> 96 %	> 96 %

Feed Water Limitation	
TEA and TEC	< 25 ppm as $CaCO_3$
Feed water source	RO permeate or better
Free Cl_2	< 0.01 ppm Cl_2
Oxidizing agents	N.D.
Fe, Mn	< 0.01 ppm
Sulfide	< 0.01 ppm H_2S
Oil	N.D.
Turbidity	< 0.1 NTU
SDI	< 1
pH	4–10
Total hardness	< 1 ppm as $CaCO_3$
Total organics	< 0.5 ppm TOC
Silica	< 1.0 ppm SiO_2

Block of MPure™ 36 modules

* Actual performance will depend on site conditions.
Please use MEGA's software to determine actual performance.

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