

# Continuous Electro Deionization Unit: Hot Water Sanitizable

## Technology

The hot water sanitizable continuous electro deionization unit (CEDI) is designed to further purify reverse osmosis product water into Purified Water (0,055 – 0,5  $\mu\text{S}/\text{cm}$ ).

The CEDI technology is a continuous process using ion exchange membranes, ion exchange resins and electricity. DC electric current is the driving force for removing ions from the feed stream while continuously regenerating the resin pack.

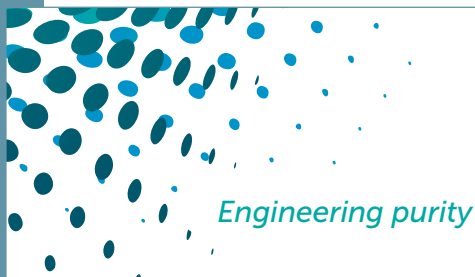
## Construction of CEDI-module

CEDI-modules consist of two different functional type of compartments within a single stack.

The product as well as the reject compartments are filled with ion exchange resin and are located side by side, with cation and anion selective membranes in between.

Feed water entering the CEDI stack flows parallel to the membrane surface. The resin capture the dissolved ions.

Electric current drives captured cations through cation membranes and captured anions through anion membranes. The cation-permeable membranes prevent anions from leaving concentrating compartments and anion-permeable membranes prevent cations from leaving the concentrating compartments.



*Engineering purity*



PURE WATER GROUP

# Compact Electro Deionization Unit: Hot Water Sanitizable

## Specific features

### NO chemicals needed for regeneration

Unlike traditional DI systems, CEDI unit does NOT need acid or caustic chemicals for regeneration. This results in safe operation and no need for hazardous waste or neutralization equipment.

### Consistent ultra pure water

Due to continuous electrical regeneration the resin never gets exhausted. The product quality is consistent, week after week, month after month, without the necessity to take the system out of operation.

### Low operational costs

The CEDI unit can operate in continuous mode with low energy consumption and does not need preventive maintenance.

## Typical markets for Pharma CEDI

- Pharmaceutical - Cosmetics
- Hemo Dialysis
- Hospital Pharmacy

*The hot water sanitizable CEDI unit is manufactured according the guidelines of the FDA / ISPE Baseline Pharmaceutical Engineering Guide for Water and Steam Systems.*

PERFORMANCE				
Reference Number	Capacity l/h Nom. -max.	Recovery %	Pressure Bar	P KW
CEDIHX041	440 - 660	90 - 95	2 - 7	0,15
CEDIHX101	1.100 - 1.650	90 - 95	2 - 7	0,35
CEDIHX181	2.000 - 3.100	90 - 95	2 - 7	0,6
CEDIHX241	2.800 - 4.200	90 - 95	2 - 7	0,9
CEDIHX301	3.300 - 5.000	90 - 95	2 - 7	1,0
CEDIHX451	5.100 - 7.650	90 - 95	2 - 7	1,5
CEDIHX302	6.600 - 10.000	90 - 95	2 - 7	2,0
CEDIHX452	10.200 - 15.300	90 - 95	2 - 7	3,0
CEDIHX453	15.300 - 22.950	90 - 95	2 - 7	4,5

DIMENSION AND WEIGHT				
Reference Number	Operation Weight kg	Width mm	Depth mm	Height mm
CEDIHX041	95	1.000	1.000	1.400
CEDIHX101	120	1.000	1.000	1.400
CEDIHX181	130	1.000	1.000	1.400
CEDIHX241	140	1.000	1.000	1.400
CEDIHX301	150	1.000	1.000	1.400
CEDIHX451	175	1.200	1.000	1.400
CEDIHX302	250	1.000	1.500	1.400
CEDIHX452	300	1.200	1.500	1.400
CEDIHX453	425	1.200	2.000	1.400

ELECTRICAL CONNECTIONS	
Fixed connection	3 x 400V / 50 Hz / 2 - 14 kW

FEED WATER SPECIFICATIONS (RO PRODUCT WATER)						
Temperature	pH	Conductivity equivalent	Total hardness	Free chlorine CL2	TOC	Silica SiO2
5 - 45 °C	4 - 11	< 40 µS/cm	< 1 mg/l CaCO3	< 0,02 mg/l	< 0,5 mg/l	< 1,0 mg/l

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