Product Data Sheet

DuPont™ Electrodeionization Module

Model EDI-310

Description

DuPont™ EDI-310 Modules are made using a patented spiral-wound design containing membrane and ion exchange resins sealed in a high-strength fiberglassed reinforced plastic (FRP) pressure vessel. The modules can be used in place of conventional mixed bed ion exchange for polishing of reverse osmosis (RO) permeate, eliminating the need to store and handle hazardous chemicals. DuPont™ EDI-310 modules optimize performance, maintain continuous product quality, and can produce up to 18 megaohm-cm product water for high-purity and ultrapure industrial water applications.

- Once through concentrate flow path eliminates brine injection and recirculation, greatly simplifying system designs.
- Distinct spiral design prevents internal and external leaks common with compression-style plate & frame stacks.
- Easy to clean, non-resin filled concentrate chambers.
- Lightweight modules require no special lifting equipment, allowing for easy-access, modular designs.
- Built-in sample port for dilute product water sampling.
- Cost-effective, spiral-wound DuPont™ EDI-310 modules allow system integrators to build systems that have both lower capital and operating costs when compared to conventional mixed bed ion exchange.

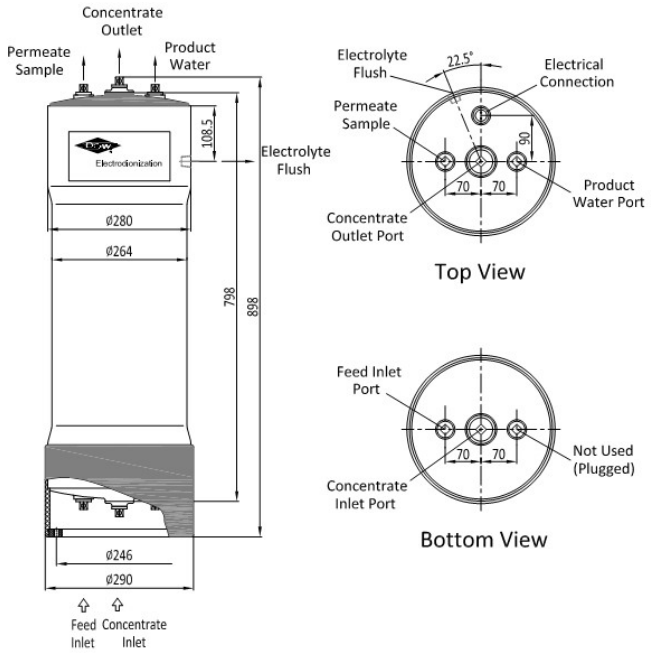
Typical Properties

Product Water Resistivity	≥ 5 MΩ·cm	≥ 15 MΩ·cm
Total Exchangeable Anions (TEA)	≤ 25 ppm ($CaCO_3$)	≤ 8 ppm ($CaCO_3$)

Based on standard test solution, actual module performance is based on specific feedwater conditions.

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Dimensions



Model	Part Number	Dilute & Product Water Connections		Electrolyte Connection		Module Size		Net Module Weight	
						Length	Base Diameter		
		Size	Material	Size	Material	in / mm	in / mm	kg	lb
EDI-310	10406238	Dn 15	PVC-U	Rc1/4"	Nylon	35.9 / 898	11.6 / 290	43	95

Module Feed Water Requirements

Based on RO Permeate Feedwater

Parameter	SI units	US units
Hardness	0.01 meq/L	≤ 0.5 ppm ($CaCO_3$)
Dissolved Silica	≤ 0.5 ppm	
TOC	≤ 0.5 ppm	
pH, Operating Range	5.0 – 9.0	
Free Cl_2	≤ 0.05 ppm	
Fe, Mn	≤ 0.01 ppm	
Turbidity, NTU	≤ 0.1 ppm	
Oxidizer, mg/L	Not detectable	

Module Operating Conditions

Dilute Water Flowrate	1.5 – 2.2 m^3/h	6.6 – 10 gpm
Recovery Rate	up to 95%	
Inlet Temperature	10 – 38°C	50 – 100°F
Inlet Pressure, max.	6.9 bar	100 psig
Continuous Operating Pressure, max.	5.5 bar	80 psig
Dilute Pressure Drop	1.5 – 2.5 bar	22 – 36 psig
Concentrate Outlet Pressure	0.5 – 0.7 bar less than dilute pressure	7– 10 psig bar less than dilute pressure
Electrolyte Flush	40 – 60 L/h	0.18 – 0.26 gpm
Electrical Current, max.	9A	
Working Voltage, max.	160V DC	

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Important Information

Proper start-up of an EDI system is essential to prepare modules for operating service and to prevent module damage. Before initiating EDI system start-up, ensure that all instrument calibration and other system checks are completed and that RO permeate quality meets EDI operational requirements. Ensure break tank (if any) and all lines and manifolds leading to the EDI modules are properly flushed prior to start-up. Single Pass RO pretreatment installations must have a hardness switch/monitor prior to the EDI to avoid invalidating warranty coverage. Please refer to the DuPont™ EDI product manual for more information.

Operation Guidelines

Gases (hydrogen, oxygen, chlorine) from water electrolysis are produced at the electrodes and carried away in the electrode flush and concentrate bleed. These gases must be vented to avoid buildup. EDI devices are vulnerable to particulate fouling. Plugging of resin interstices increases pressure drop across the module and immediately interferes with the desalination performance. Oxidizers such as chlorine will attack ion exchange membrane and resin beads and will cause irreversible module damage.

General Information

DuPont™ EDI Modules are designed to deionize RO permeate and are subject to specific feed water requirements as listed above. If operating limits and guidelines given in this bulletin are not strictly followed, the limited warranty will be null and void—refer to DuPont™ EDI product warranty sheet for further details.

Product Stewardship

DuPont has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

DuPont strongly encourages its customers to review both their manufacturing processes and their applications of DuPont products from the standpoint of human health and environmental quality to ensure that DuPont products are not used in ways for which they are not intended or tested. DuPont personnel are available to answer your questions and to provide reasonable technical support. DuPont product literature, including safety data sheets, should be consulted prior to use of DuPont products. Current safety data sheets are available from DuPont.

Please be aware of the following:

- This product is not intended for use in potable water applications.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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