



## IONPURE® VNX55-HH HIGH HARDNESS CONTINUOUS ELECTRODEIONIZATION (CEDI) MODULES

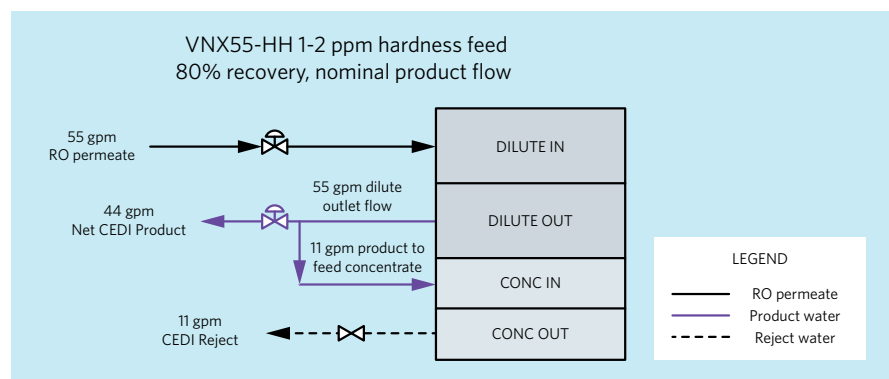
### IONPURE® VNX MODULE-VNX55-HH CONTINUOUS ELECTRODEIONIZATION MODULE

The VNX55-HH module is designed with proven Ionpure® continuous electrodeionization (CEDI) technology to produce high purity water. The internal design has been optimized to handle a high feed water hardness while still able to provide ultrapure water quality water at high flow rate required for many applications, specifically within the power industry

Each VNX55-HH industrial module has a nominal flow rate of 44 gpm (10m<sup>3</sup>/hr). Combining multiple VNX55-HH Modules provides for simplified systems design for high flow rate systems up to and greater than 1,000 gpm.

### VNX55-HH Series Features

- Typically > 16 MΩ-cm product water resistivity
- 2 ppm (as CaCO<sub>3</sub>) max feed water hardness
- In most cases can operate on single-pass RO permeate
- Resin, membrane and module construction optimized for feed water hardness tolerance
- No need for acid/caustic, neutralization systems or tank exchanges
- Significantly lower operating cost compared to conventional ion exchange systems
- Robust leak-free sealing with through-port gasket
- Continuous production of consistent quality
- Junction box for convenient and safe power connections



## IONPURE® VNX55-HH HIGH HARDNESS CONTINUOUS ELECTRODEIONIZATION (CEDI)

### Operating Environment

Installation should be indoors with no direct sunlight and it should have a maximum ambient room temperature of 113°F (45°C).

### Material Construction

- Wetted components of the VNX module consist of: PVC (adapters), nylon/aBS, polypropylene, silicone, ion-selective membranes, ion exchange resins and thermoplastic elastomer.
- Housing is fiberglass reinforced plastic (FRP). Standard color is white with a glossy finish. Custom colors and labeling are available.
- The proprietary Flexmount™ bracket/end-block assembly is an epoxy painted aluminum casting suitable for securing modules to the frames and/or each other in Ionpure® system approved configurations.

### Quality Assurance Standards

CE marked. Each module is factory tested to meet strict industry standards and is manufactured in an ISO 9001 and ISO 14000 quality and environmental management system.

### Ordering Information

- Part number to use when ordering for vertical or horizontal installation use IP-VNX55-HH-2 (W3T324118).
- Each VNX module has four process connections; feed, concentrate feed, product and reject. PVC adapters (with dust covers) and plugs are provided with the module.
  - High purity 50 mm butt weld connection kits adapter (4)/plug (4) Natural polypropylene — Model #IP-VNX-CK-PP-2
  - Standard 1.5" female socket connection kits (4)/plug (4): PVC — Model #IP-VNX-CK-PVC-2
- Module electrical power connections are made through an on-board junction box.

### Physical Specifications

| Diameter            | Width              | Height             | Length              | Shipping Weight       | Operating Weight      |
|---------------------|--------------------|--------------------|---------------------|-----------------------|-----------------------|
| 17.5"<br>(44.45 cm) | 20.0"<br>(50.8 cm) | 20.0"<br>(50.8 cm) | 84.0"<br>(213.3 cm) | 610 lbs<br>(276.7 kg) | 825 lbs<br>(374.2 kg) |

### Maximum Feed Water Specifications

|                                                                          |                            |
|--------------------------------------------------------------------------|----------------------------|
| Feed Water Conductivity Equivalent, including CO <sub>2</sub> and Silica | <40 µS/cm                  |
| Feed Water Source                                                        | RO permeate                |
| Temperature                                                              | 41 - 113°F (5 - 45°C)      |
| Inlet Pressure                                                           | 20 - 100 psi (1.4 - 7 bar) |
| Maximum Total Chlorine (as Cl <sub>2</sub> )                             | <0.02 ppm                  |
| Iron (as Fe)                                                             | < 0.01 ppm                 |
| Manganese (as Mn)                                                        | < 0.01 ppm                 |
| Sulfide (S <sup>-</sup> )                                                | < 0.01 ppm                 |
| pH                                                                       | 4 - 11                     |
| Total Hardness (as CaCO <sub>3</sub> )                                   | ≤ 2.0 ppm                  |
| Dissolved Organics (TOC as C)                                            | < 0.5 ppm                  |
| Silica (SiO <sub>2</sub> )                                               | ≤ 1.0 ppm                  |

### Typical Module Performance

#### Operating Parameters

| RECOVERY                  | 80%                             | 90%                             |
|---------------------------|---------------------------------|---------------------------------|
| Net Product Flow, Minimum | 20 gpm (4.5 m <sup>3</sup> /h)  | 23 gpm (5.2 m <sup>3</sup> /h)  |
| Net Product Flow, Nominal | 44 gpm (10 m <sup>3</sup> /h)   | 50 gpm (11.4 m <sup>3</sup> /h) |
| Net Product Flow, Maximum | 56 gpm (12.6 m <sup>3</sup> /h) | 62 gpm (14.1 m <sup>3</sup> /h) |
| DC Voltage                | 0 - 600                         | 0 - 600                         |
| DC Amperage               | 0 - 13.2**                      | 0 - 13.2**                      |

#### Product Water Quality

|                                    |             |
|------------------------------------|-------------|
| Sodium (Na) Removal                | ≥ 99.5%     |
| Chloride (Cl) Removal              | ≥ 99.8%     |
| Product Resistivity                | > 16 MΩ-cm* |
| Silica (SiO <sub>2</sub> ) Removal | > 90%       |

\*Actual performance may be determined using the IP-Pro projection software available from Ionpure.

\*\*Typical DC Amperage 0-8.



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