

Powering One of India's Largest Semiconductor Manufacturers with Ionpure® CEDI

A compact and sustainable ultrapure water solution engineered to meet the demanding requirements of semiconductor manufacturing.

The semiconductor industry demands some of the highest water-quality standards in the world. From wafer processing to advanced packaging and testing, consistent ultrapure water is essential to maintaining product quality, process reliability, and manufacturing yield.

When one of India's largest semiconductor manufacturers sought a reliable ultrapure water solution for its facility in Sanand, the objective was clear: secure a solution capable of delivering consistent, high-purity water while supporting operational efficiency, sustainability, and long-term reliability. To meet these requirements, Xylem partnered with the project's EPC contractor to deliver Ionpure® CEDI solution designed specifically for demanding semiconductor applications.

The challenge

Semiconductor manufacturing requires ultrapure water of the highest quality and consistency. The customer needed a reliable, high-capacity solution that could support critical production processes while minimizing footprint, simplifying operations, and eliminating the need for chemical regeneration. Xylem was tasked with demonstrating a solution capable of meeting these demanding performance and reliability requirements.



Customer Value Delivered

- Stable Ultrapure Water Production
- 45% Reduced Footprint
- Chemical-Free Operation

The objectives

- Ensure Consistent Ultrapure Water Quality
- Optimize Plant Footprint
- Improve Operational Sustainability

"Water quality consistency is critical to our manufacturing processes. The Ionpure® CEDI solution met our stringent ultrapure water requirements while providing a compact, efficient, and chemical-free approach that aligned with our operational objectives."

The Solution

To meet the customer's stringent ultrapure water requirements, Xylem supplied Ionpure® VNX-EP Continuous Electrodeionization (CEDI) solution designed for high-purity semiconductor applications.

The Ionpure® VNX-EP platform delivers stable and consistent product-water resistivity, helping ensure process reliability, product quality, and manufacturing yield. Its chemical-free operation eliminates the need for acid and caustic regeneration chemicals, while the high-flow capability of the VNX modules enabled the required treatment capacity to be achieved with fewer modules. This resulted in a compact system footprint, simplified installation and maintenance, and a reliable, sustainable ultrapure water solution for the facility.

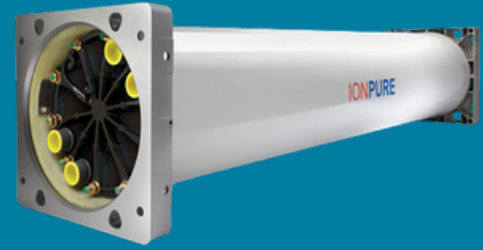
Technical Highlights

- Treatment Capacity: 75 m³/hr
- >45% smaller footprint compared to conventional resin-based demineralization systems
- Chemical-free operation with no acid or caustic regeneration
- Stable product-water resistivity for critical semiconductor manufacturing processes

The Result

The Ionpure® CEDI solution successfully delivered the consistent ultrapure water quality required for critical semiconductor manufacturing processes while supporting the customer's operational and sustainability objectives. By leveraging the high-flow capability of the VNX-EP platform, Xylem achieved the required 75 m³/hr treatment capacity through a compact modular configuration requiring more than 45% less footprint than conventional resin-based systems. The chemical-free continuous deionization process further simplified operations by eliminating acid and caustic regeneration chemicals, resulting in a reliable, space-efficient, and sustainable ultrapure water solution for advanced semiconductor manufacturing.

Performance Without Compromise



Ionpure® CEDI

- **Chemical-Free Operation** - Eliminates acid and caustic regeneration.
- **Consistent Water Quality** - Delivers reliable ultrapure water performance.
- **Compact System Design** - Reduces footprint and installation space.
- **Lower Operating Complexity** - Simplifies operation and maintenance.
- **Scalable Modular Architecture** - Easily adapts to varying capacity requirements.
- **Supports Sustainability Goals** - Reduces chemical handling and wastewater generation.

Want to Optimise your Ultrapure Water system?

Talk to a Xylem expert to discover how this technology can help improve water quality, reduce footprint, and support your goals.

Know about CEDI

