Nanostone water

CM-151[™] CERAMIC ULTRAFILTRATION MODULE

Nanostone Water's CM-151 ceramic UF is the next generation membrane for industrial and municipal water treatment and waste water reuse. It comprises near-inert ceramic materials and specifically selected non-ceramic materials in a unique design and world class manufacturing technology to provide the most reliable, robust, and easy to operate membrane with the lowest total cost of ownership compared to other membranes.



The robustness and performance of the CM-151 contribute to significant cost efficiencies in both retrofit and new water treatment systems. In addition the process design and certifications make the CM-151 easy to implement and operate.

- Best in class life cycle cost
- Easily incorporated into existing designs or retrofit of PUF membranes.
- Manufactured in automated ISO 9001 certified facility.
- Independently tested and certified for ANSI/NSF 61 & 372 for drinking water
- Optimized hydraulic design for the key water treatment applications

ABOUT CM PRODUCT

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At Waste Water Reuse Location

WATER SAMPLES FROM NANOSTONE CM Feed Water and Clean Permeate Water

Our manufacturing process is designed to ensure that our membranes are robust to meet stringent requirements, and also efficiently made for high volume production. The patented design utilizes ceramic membranes extruded in flat segments with high manufacturing throughput and yield. The segments are then assembled into a single monolith structure with optimized hydraulic flow channels to enhance backwash effectiveness.

The CM-151 module has been extensively stress tested to offer lifetimes 2-10 times longer than what polymeric membrane modules typically last. The ceramic monolith structure housed in a FRP vessel and the overall module rated up to 7 Bar operating pressure and a temperature rating up to $45^{\circ}C$ ($113^{\circ}F$) for normal operation and up to $55^{\circ}C$ ($130^{\circ}F$) for cleaning cycles.

Though there is advanced technology inside, the CM-151 membrane module is very similar on the outside to most other pressurized

polymeric UF (PUF) membrane modules. The process design for the CM-151 is also very similar to PUF membrane plants. The backwash uses pumps at nominal flow rates allowing the use of common design methods. What's more, our membranes can fit into existing open platform designs, minimizing the risk of switching to ceramic. For an operator who is struggling with the operation of their PUF membranes, they now have a choice to upgrade to a better technology while utilizing the same components already in place; as the Nanostone CM-151 can also retrofit into existing PUF membrane systems.

Widely recognized for overall rbustness, the Nanostone ceramic membrane module offers numerous advantages over polymeric membranes including:

- 3-10 times higher flux giving higher productivity and a lower footprint
- >50% backwash volume reduction to lower water consumption and decrease costs
- 2-10 times longer life to lower the element replacement costs and provide an overall lower total cost of ownership of the system over its lifetime
- Reversible fouling from the hydrophilic ceramic surface which cleans more easily
- High chemical resistance allowing rigorous cleaning/flexibility
- No fiber breaks....Minimal integrity risk with low maintenance