

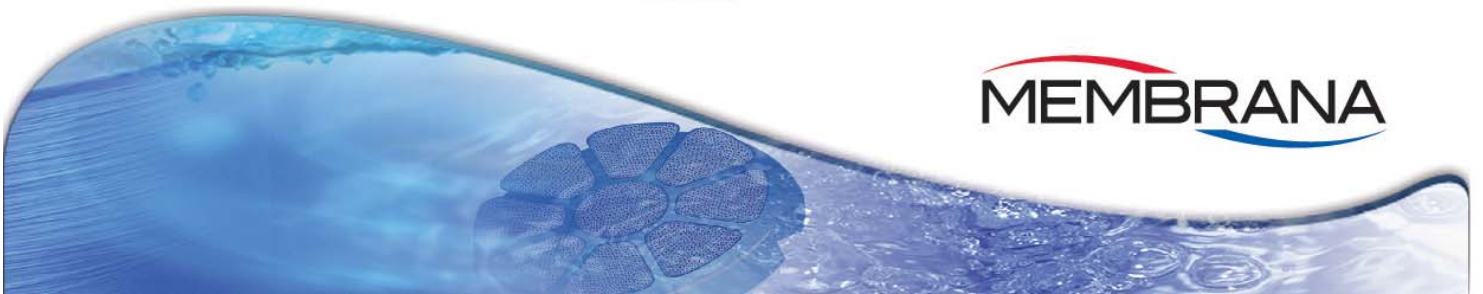
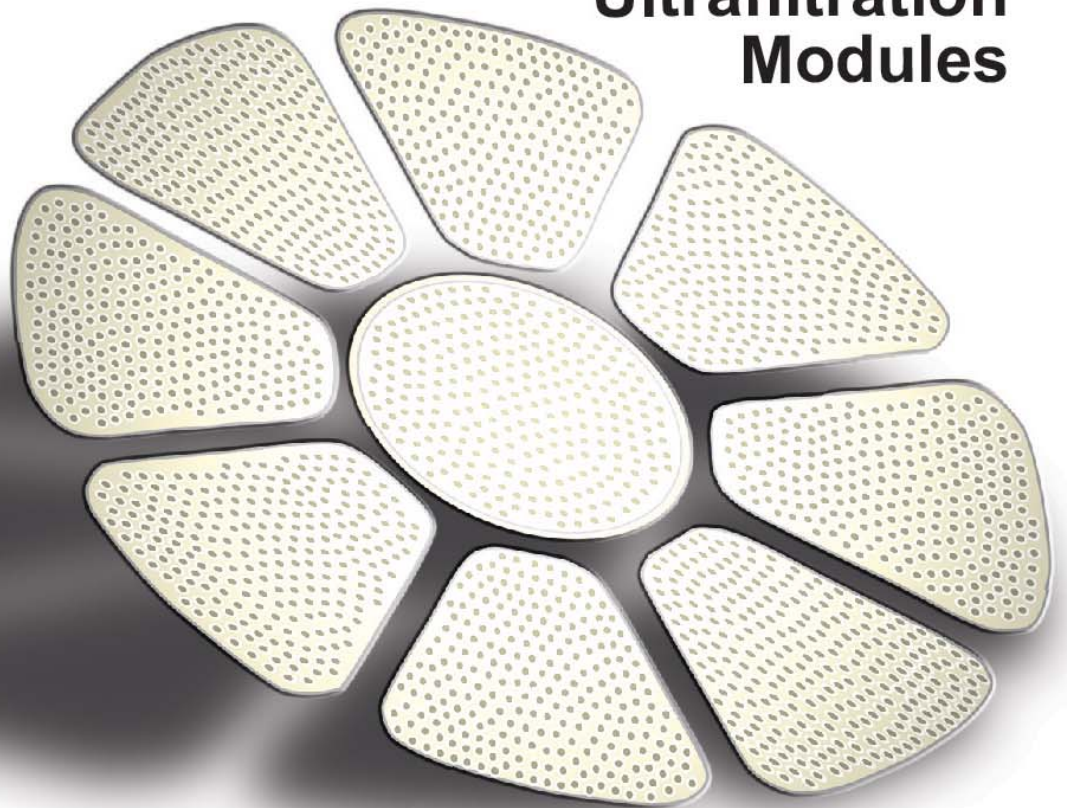


# Liqui-Flux<sup>®</sup>

FILTRATION

## W-Series

Ultrafiltration  
Modules



MEMBRANA

# Liqui-Flux® FILTRATION



## Liqui-Flux® Module *"Economy and Reliability in Ultrafiltration"*

Membrana manufactures one of the largest UF modules of its kind. The new Liqui-Flux® Filtration module uses cutting-edge technology for inside-out ultrafiltration with large effective membrane area. The durable module design and the Variable Connect Concept - VCC™ represents an advancement in ultrafiltration technology today.

### Distinct Features:

- **Durable quality module design**  
For long-term integrity
- **Large effective membrane surface area**  
One of the largest of its kind
- **Proven UltraPES™ membrane inside**  
For superior permeability and strength
- **Controlled hydrodynamics**  
For efficient backwash cleaning
- **12-inch robust PVC housing**  
With operating pressures up to 6 bar
- **Variable Connect Concept - VCC™**  
Easy and flexible system integration for several operating modes: standard, low installation height, or small footprint
- **Multifiber P.E.T.® Technology**  
The sophisticated membrane support

### Application Areas for Liqui-Flux® Water Modules:

- Drinking water treatment
- Pre-treatment to reverse osmosis
- Process water filtration
- Waste water polishing



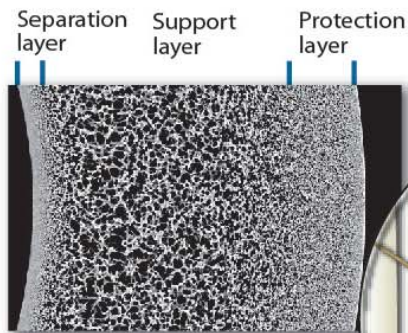
## Sustainable Module Design

A structured membrane arrangement inside a 12-inch housing leads to well defined liquid flow hydrodynamics. Membrana has designed this high quality Liqui-Flux® module for long-term operation.

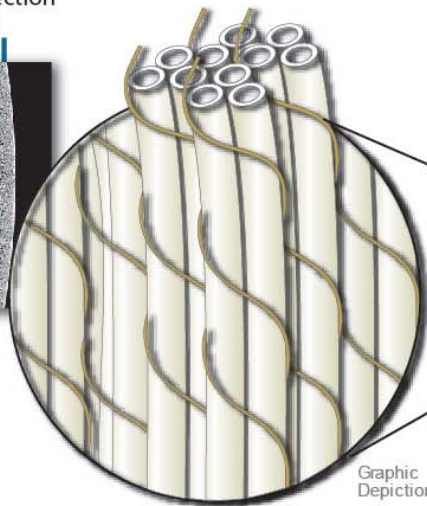
### UltraPES™

#### “Superior Permeability and Strength”

- Robust asymmetric 3-layer structure
- Narrow pore size distribution
- Excellent permeability
- Reduced fouling potential
- High temperature and chemical resistance (pH 1 – 13)



Distinctive 3-layer structure



### Multifiber P.E.T.® Features

#### “Sophisticated Membrane Support”

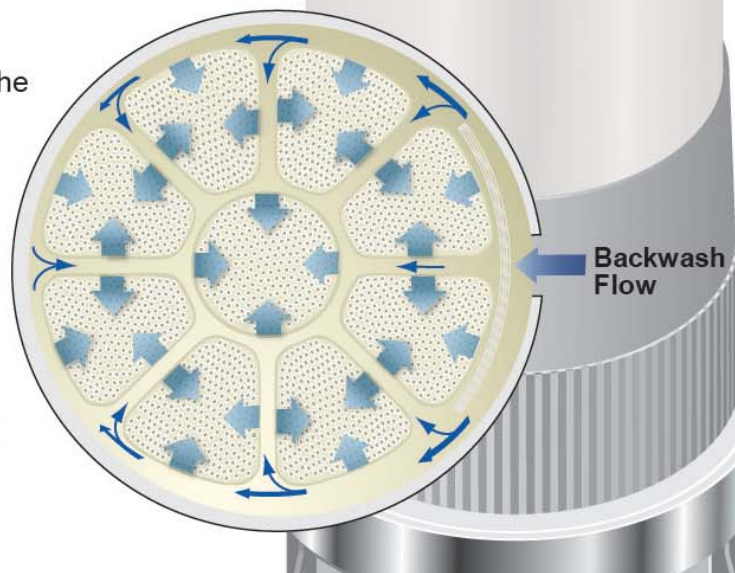
UltraPES™ hollow fiber membranes are stabilized by Membrana’s patented Multifiber P.E.T.® technology where PET yarn is twisted around and potted with the hollow fibers. The Multifiber P.E.T.® technology provides excellent mechanical support to the membrane and ensures long-term stability.

### Even Flow Distribution Promotes Efficient Backwash

#### “Controlled Hydrodynamics”

The special module design is optimized for favorable hydrodynamic conditions during the backwash procedure.

- The introduction of backwash water through a narrowing annular channel ensures a uniform pressure distribution. This leads to excellent physical cleaning performance.
- Without O-ring sealing to separate the feed from the filtrate side, Liqui-Flux® ultrafiltration modules reduce the potential for microbiological cross-contamination.



# The Variable Connect Concept - VCC™

*“Without Limiting Your Engineering Flexibility”*

The Variable Connect Concept provides several options for assembling the modules.

**Standard Setup**



**Compact Setup**



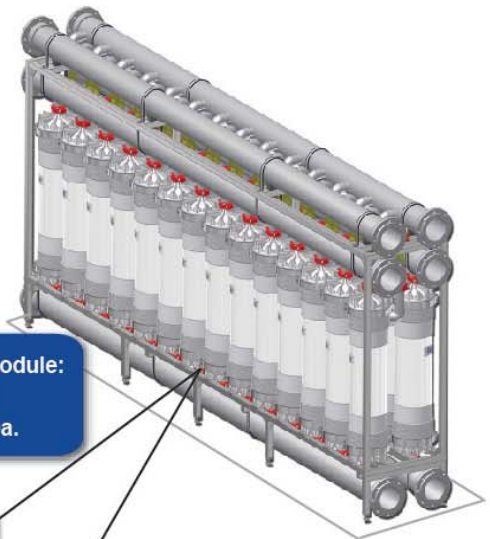
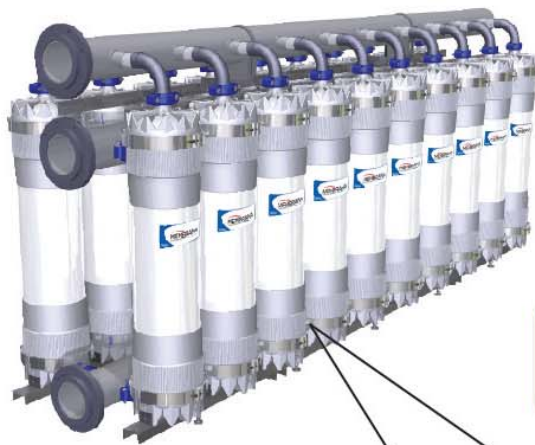
**Footprint Optimized**



The standard module setup with radial feed and axial concentrate ports support cross-flow and dead-end operating modules without limiting rack configuration.

Liqui-Flux® modules can be supplied with a radial concentrate port, which is ideal for installations where there are height restrictions.

Liqui-Flux® modules can be assembled with an axial feed port to allow for a compact system design.



**Design Example for W10 module:**  
4.75 m<sup>3</sup> footprint for  
2100 m<sup>2</sup> membrane area.

In a Standard Module assembly, economic building blocks can be used to achieve different rack capacities using commercially available parts.



In a Footprint Optimized assembly, the manifolds can be arranged directly above or underneath the modules.

All endcaps are designed to fasten the entire module to a skid or to connect it to other modules.





# Membrana - The Market Leader in Membrane Technology

Membrana has been a technological leader in membrane development and manufacturing for over 40 years. Our experience spans over 20 years of module development and manufacturing. Employing more than 500 people and having an annual turnover of more than 150 MM USD, Membrana's large scale production facilities ensure the highest level of quality. With an annual output of several million SQM per year, Membrana is one of the largest membrane manufacturers in the world.

Extensive R&D activities and facilities promote continued development and advancement of Membrana products and technologies.



## Our primary company-wide product focus includes:

- Hollow fiber and flat sheet membranes for medical applications
- Flat Sheet Microfiltration Membranes for process filtration
- Liqui-Cel® Membrane Contactors for degassing
- Liqui-Flux® Microfiltration Modules for beverage clarification
- Liqui-Flux® Ultrafiltration Modules for water treatment



We offer our technical know-how and experience to support our customers from the decision making process through the start-up and optimization steps of integrating Liqui-Flux® modules into the end user's process.

Membrana Support Services include:

- Laboratory and analytical testing service
- Access to ultrafiltration test equipment



Waste Water Re-use



Pre-treatment  
to Reverse Osmosis



Drinking Water Treatment