# PULSION® Hollow Fiber Modules

*PURON® Hollow Fiber Submerged Membrane Modules for MBR Applications*

| PRODUCT DESCRIPTION | |
|---|---|
| **Membrane Chemistry:** | Proprietary PVDF |
| **Membrane Type:** | Braided hollow fiber for outside-in operation |
| **Fiber Support Chemistry:** | Polyester |
| **Nominal Pore Size:** | 0.03 µm |
| **Outside Fiber Diameter:** | 0.1 inch (2.6 mm) |
| **Regulatory Information:** | Accepted by California Department of Public Health (CDPH) for compliance with California Water Recycling Criteria (Title 22) |
| **Potting Material:** | Proprietary epoxy compound |
| **Module Frame Material:** | 316 Stainless Steel |
| **Permeate Collection Tube Material:** | ABS, PVC, PE manifolds |
| **Storage Solution:** | Glycerin |

| PRODUCT SPECIFICATIONS | |
|---|---|
| **Part Number** | **Nominal Membrane Area ft² (m²)** |
| LE 8 | 3,746 (348) |
| LE 16 | 7,492 (696) |
| LE 44 | 20,602 (1,914) |

| OPERATING & DESIGN INFORMATION* | |
|---|---|
| **Temperature Range:** | 41 - 104°F (5 - 40°C) |
| **Maximum Filtration Transmembrane Pressure:** | 9 psi (0.6 bar) |
| **Maximum Backflush Transmembrane Pressure:** | 9 psi (0.6 bar) |
| **Allowable pH Range for Cleaning:** | 2.0 – 10.5 |
| **Maximum Allowed Total Chlorine @ 95°F (35°C) or Lower:** | 1,000 ppm @ pH 8 or higher during maintenance clean |
| **Maximum Allowed Total Chlorine @ 95°F (35°C) or Lower:** | 2,000 ppm @ pH 8 or higher during recovery clean |
| **Maximum Allowed Total Chlorine Contact:** | 1,000,000 ppm-hrs cumulative |

* Consult Process Technology Group for specific applications.

| NOMINAL DIMENSIONS & WEIGHT | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | L | | W | | H | | Dry Weight | |
| **Model** | **inches** | **mm** | **inches** | **mm** | **inches** | **mm** | **Pounds** | **kg** |
| LE 8 | 36.4 | 925 | 37.0 | 940 | 104⅜ | 2,652 | 1,300 | 590 |
| LE 16 | 66.0 | 1,675 | 37.0 | 940 | 104⅜ | 2,652 | 2,500 | 1,135 |
| LE 44 | 88.9 | 2,258 | 70.0 | 1,780 | 104⅜ | 2,652 | 6,070 | 2,754 |

* See Outline drawings for details

| CONNECTIONS | | | | |
|---|---|---|---|---|
| | Permeate | | Air | |
| **Model** | **Type** | **Size** | **Type** | **Size** |
| LE 8 | Grooved Coupling | 2½” IPS | Grooved Coupling | 1½” IPS |
| LE 16 | Grooved Coupling | 3” IPS | Grooved Coupling | 2” IPS |
| LE 44 | Grooved Coupling | 4” IPS (2X) | Grooved Coupling | 2½” IPS (2X) |

## TRANSPORT AND STORAGE CONDITIONS:

### Storage of Unused PURON® Modules

PURON modules should be stored within a temperature range of 41 to 77°F (5 to 25°C) in the original packaging material. Extended exposure to UV source must be avoided. The PURON® modules must not be stored for longer than 12 months after delivery.

### Transport of PURON® Modules

During transport, PURON® modules should be stored within a temperature range of 23 to 113°F (-5 to 45°C), but they should not be kept at temperature outside the normal storage range of 41 to 77°F (5 to 25°C) for more than 6 weeks.

When the PURON® modules are being transported by ship, the PURON® module should be placed in seaworthy packaging and stored at ambient temperature, provided that such temperature is within the temperature range specified herein.

### Dry-Out Protection

Once the PURON® module has been immersed in an aqueous medium, it should never be stored dry. If the membrane plant is not operated for 7 days or less, the module may be kept wet by keeping it submerged in the biomass, provided the following conditions are met

- The biomass is healthy and is aerated and the recirculation of biomass over the membrane chamber is functioning properly.
- The module is fully submerged in the biomass.
- The module aeration is switched on every 30 minutes for a period of 1 minute to assure mixing of sludge inside the module.

### Storage of Used Modules

If the shutdown period is longer than 7 days, immersion in a storage solution is required. Please consult KSS for more information.

If used PURON® modules are permitted to dry out, membrane performance, such as permeability, may be adversely affected. Please consult KSS to see what steps may be taken to try to reverse such negative effects.

### Proper Handling of PURON® Modules

Utmost care should be taken at all times when handling the PURON® module. Collisions, impact or hitting the ground in a rough manner may damage modules or connections.

Keep the PURON® modules free from contact with sharp or abrasive objects or exposure to heat sources. Actions that may cause sparks (e.g. welding, grinding) should be strictly prohibited in the vicinity of the modules.

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