



Q-SEP[®]

Q-SEP[®] HOLLOW FIBER ULTRAFILTRATION MEMBRANES

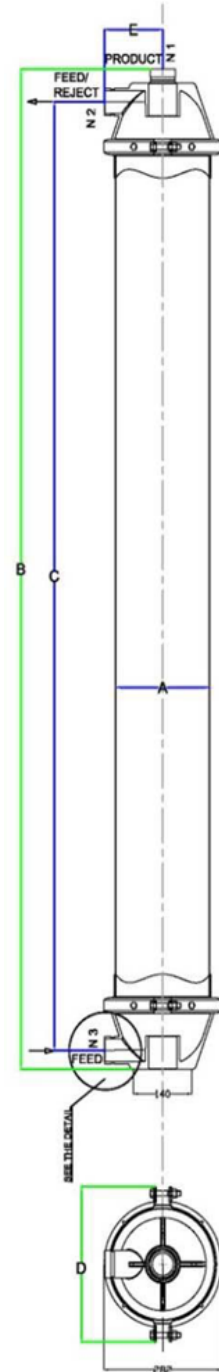
Q-SEP[®] hollow fiber ultrafiltration modules contain membranes manufactured with QUA's innovative patented "Cloud Point Precipitation" method. This process ensures a high pore density along the length of the fiber and uniform narrow pore size distribution in the membrane.

Q-SEP[®] modules deliver superior performance characteristics and product water quality that surpass the quality from conventional UF modules. The narrow pore size distribution allows the membrane to produce water with a low silt density index (SDI). The lower product SDI leads to less frequent and easier cleaning of downstream RO membranes. In addition, the Q-SEP[®] membrane provides an excellent rejection of bacteria and viruses.

Q-SEP[®] UF membranes are made of modified hydrophilic polyether sulfone (PES) material that offers high fiber strength and excellent low fouling characteristics, resulting in higher membrane productivity. These hollow fiber membranes operate under a low transmembrane pressure in an inside-out flow configuration for superior performance. Applications of Q-SEP[®] UF include pretreatment to RO systems (brackish and seawater applications), purification of surface and well water for potable applications, filtration of industrial water, and wastewater recycle and reuse.

The information provided in this data sheet are the general characteristics of a Q-SEP[®] module. QUA believes that this information is updated and accurate, however, the content of this datasheet might be subject to changes with further developments of the product line. Make sure that the Q-SEP[®] stacks are operated according to the latest version of the QUA Operation and Maintenance/Technical Manual guidelines.

Contact QUA for assistance in the selection of Q-SEP[®] membranes specifically designed for your application.



TECHNICAL INFORMATION

| Operational Instructions | |
|--|--|
| Filtrate Flux Range | 50 to 150 l/mh (30 to 90 gfd) |
| Maximum Feed Pressure | 4.8 bar (70 psi) |
| Trans-Membrane Pressure | 0.3 to 1.4 bar (5 to 20 psi) |
| pH Range | 2 - 12 |
| Typical Instantaneous Chlorine Tolerance | 100 - 200 ppm |
| Maximum Operating Temperature | 45° C (113 °F) |
| Maximum Feed Turbidity | 0.8mm ID: up to 25 NTU 1.2mm ID: up to 50 NTU |
| Backwash Flux Range | 150 to 300 l/mh (90 to 180 gfd) |
| Backwash Feed Pressure | 0.7 to 2.1 bar (10 to 30 psi) |
| Backwash Frequency & Duration | Every 15 – 45 minutes for 30 – 60 seconds |
| Chemically Enhanced Backwash | |
| Estimated Frequency | Typically 1 to 10 days of operation, depending on operating conditions |
| Duration | 10 to 20 minutes |
| CEB Chemicals | NaOCl (100-200 ppm), NaOH (pH 11-12), Acid (pH 2), Citric acid (C ₆ H ₈ O ₇) |
| Module Characteristics | |
| Membrane Material | Modified PES |
| Housing Material | UPVC |
| End Cap Material | GRP |
| Nozzle Material | 2" Victaulic |

Q-SEP[®] 0.8MM MODULES

| Product Data | Unit | Q-SEP 2008 | Q-SEP 4508 | Q-SEP 6008 |
|-----------------------------|-----------------------------------|---------------|---------------|---------------|
| Membrane Area | m ² ft ² | 20 215 | 45 484 | 60 645 |
| Filtrate Flow Min | m ³ /hr gpm | 1.00 4.4 | 2.25 9.9 | 3.00 13.2 |
| Filtrate Flow Max | m ³ /hr gpm | 3.00 13.2 | 6.75 29.7 | 9.00 39.6 |
| Fiber Inside Diameter | mm inch | 0.8 0.03 | 0.8 0.03 | 0.8 0.03 |
| Fiber Outside Diameter | mm inch | 1.2 0.05 | 1.2 0.05 | 1.2 0.05 |
| Module Dimensions | | | | |
| Diameter (A) | mm inch | 225 8.85 | 225 8.85 | 225 8.85 |
| Length With End Cap (B) | mm inch | 1015 39.95 | 1780 70.1 | 2230 87.80 |
| Length-Feed Connections (C) | mm inch | 900 35.4 | 1666 65.59 | 2116 83.3 |
| Distance-Width (D) | mm inch | 355 13.98 | 355 13.98 | 355 13.98 |
| Distance-Feed To Center (E) | mm inch | 140 5.51 | 140 5.51 | 140 5.51 |
| Module Weight | Kg lbs. | 28 61.39 | 47.2 103.5 | 53 116.2 |

MODULE SPECIFICATION

| Parameter | Description/Information |
|--------------------|---|
| Configuration | Self-encapsulated hollow fiber ultrafiltration membrane module (inside-out) |
| Operating Mode | Dead-end or Crossflow, Backwashable |
| Module Mounting | Vertical |
| Membrane Pore Size | 0.02 micron |

CERTIFICATIONS:

ANSI/NSF, STANDARD 61, PDWEP, ANSI 419

Q-SEP[®] 1.2MM MODULES

| Product Data | Unit | Q-SEP 3412 | Q-SEP 4512 |
|-----------------------------|-----------------------------------|---------------|-----------------|
| Membrane Area | m ² ft ² | 34 365 | 45 484 |
| Filtrate Flow Min | m ³ /hr. gpm | 1.7 7.48 | 2.25 9.9 |
| Filtrate Flow Max | m ³ /hr. gpm | 5.1 22.45 | 6.75 29.7 |
| Fiber Inside Diameter | mm inch | 1.2 0.047 | 1.2 0.047 |
| Fiber Outside Diameter | mm inch | 1.9 0.08 | 1.9 0.08 |
| Module Dimensions | | | |
| Diameter (A) | mm inch | 225 8.85 | 225 8.85 |
| Length With End Cap (B) | mm inch | 1780 70.1 | 2230 87.8 |
| Length-Feed Connections (C) | mm inch | 1666 65.59 | 2116.2 83.31 |
| Distance-Width (D) | mm inch | 355 13.98 | 355 13.98 |
| Distance-Feed To Center (E) | mm inch | 140 5.51 | 140 5.51 |
| Module Weight | Kg lbs. | 52 114 | 58.4 128 |