

# TurboClean® Food & Dairy

## UP005 Series



TurboClean® elements feature a patented sanitary hard-shell design that delivers better system performance due to about 60% less bypass flow than other sanitary elements. Lower bypass flow results in energy savings and/or higher flux rates as more of the feed flows across the membrane surface instead of around the outside of the element. Higher cross-flow velocity also results in the most effective membrane cleaning. TurboClean elements are stronger than net-wrapped sanitary elements and are able to withstand higher pressure drops. And with the tightest OD tolerance and optimal circularity, TurboClean elements are the easiest elements to load and unload.

- Strongest Sanitary Element
- Most Effective Cleaning
- Longer Operating Life
- Easiest Installation
- Better Performance

### MEMBRANE CHARACTERISTICS

|                       |                        |
|-----------------------|------------------------|
| Membrane              | UP005                  |
| Membrane Type         | Polyethersulfone (PES) |
| Nominal M.W.C.O. (Da) | 5,000                  |

### DESIGN INFORMATION

| Model                        | Membrane Area<br>m <sup>2</sup> (ft <sup>2</sup> ) | Feed Spacer<br>Thickness (mil) <sup>a</sup> |
|------------------------------|----------------------------------------------------|---------------------------------------------|
| TurboClean® UF 3838-UP005-31 | 6.0 (65)                                           | 31                                          |
| TurboClean® UF 3838-UP005-46 | 4.6 (50)                                           | 46                                          |
| TurboClean® UF 3838-UP005-65 | 3.5 (38)                                           | 65                                          |
| TurboClean® UF 3838-UP005-80 | 3.1 (33)                                           | 80                                          |
| TurboClean® UF 6338-UP005-31 | 19.0 (205)                                         | 31                                          |
| TurboClean® UF 6338-UP005-46 | 15.3 (165)                                         | 46                                          |
| TurboClean® UF 6338-UP005-65 | 12.1 (130)                                         | 65                                          |
| TurboClean® UF 6338-UP005-80 | 10.2 (110)                                         | 80                                          |
| TurboClean® UF 6438-UP005-31 | 19.0 (205)                                         | 31                                          |
| TurboClean® UF 6438-UP005-46 | 15.3 (165)                                         | 46                                          |
| TurboClean® UF 6438-UP005-65 | 12.1 (130)                                         | 65                                          |
| TurboClean® UF 6438-UP005-80 | 10.2 (110)                                         | 80                                          |
| TurboClean® UF 8038-UP005-31 | 32.1 (345)                                         | 31                                          |
| TurboClean® UF 8038-UP005-46 | 25.5 (275)                                         | 46                                          |
| TurboClean® UF 8038-UP005-65 | 20.0 (215)                                         | 65                                          |
| TurboClean® UF 8038-UP005-80 | 17.2 (185)                                         | 80                                          |

<sup>a</sup> All models on this sheet have TurboClean sanitary outer wrap and diamond shaped feed spacers.

### OPERATING PARAMETERS

|                                            |                                                          |
|--------------------------------------------|----------------------------------------------------------|
| Maximum Operating Pressure                 | 10 bar (145 psi)                                         |
| Maximum Operating Temperature              | 55°C (131°F)                                             |
| Cleaning pH/Temperature Range <sup>1</sup> | 1.5 – 11.5 at 55°C (131°F)                               |
| Cleaning Chlorine Tolerance                | 200 ppm for sanitization at pH ≥ 10.5                    |
| Maximum Pressure Drop                      | 1.4 bar (20 psi) per element; 6 bar (80 psi) per housing |

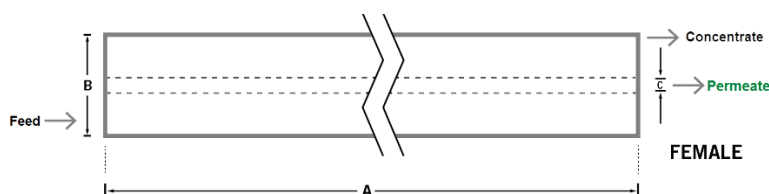
<sup>1</sup> Refer to temperature and pH limits in Membrane Cleaning Guide – Food & Dairy: UF & MF Elements (TSG-C-004).

## PHYSICAL DIMENSIONS

| Model                        | Element Weight<br>kg (lb) <sup>b</sup> | Dim. A<br>mm (inches) | Dim. B<br>mm (inches) | Dim. C <sup>c</sup><br>mm (inches) | Permeate Tube |
|------------------------------|----------------------------------------|-----------------------|-----------------------|------------------------------------|---------------|
| TurboClean® UF 3838-UP005-31 | 4 (9)                                  | 965 (38.0)            | 96 (3.8)              | 21.2 (0.83)                        | Female        |
| TurboClean® UF 3838-UP005-46 | 4 (9)                                  | 965 (38.0)            | 96 (3.8)              | 21.2 (0.83)                        | Female        |
| TurboClean® UF 3838-UP005-65 | 4 (9)                                  | 965 (38.0)            | 96 (3.8)              | 21.2 (0.83)                        | Female        |
| TurboClean® UF 3838-UP005-80 | 4 (9)                                  | 965 (38.0)            | 96 (3.8)              | 21.2 (0.83)                        | Female        |
| TurboClean® UF 6338-UP005-31 | 11 (24)                                | 965 (38.0)            | 160 (6.3)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 6338-UP005-46 | 11 (24)                                | 965 (38.0)            | 160 (6.3)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 6338-UP005-65 | 11 (24)                                | 965 (38.0)            | 160 (6.3)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 6338-UP005-80 | 11 (24)                                | 965 (38.0)            | 160 (6.3)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 6438-UP005-31 | 11 (24)                                | 965 (38.0)            | 162 (6.4)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 6438-UP005-46 | 11 (24)                                | 965 (38.0)            | 162 (6.4)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8038-UP005-31 | 16 (36)                                | 965 (38.0)            | 201 (7.9)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8038-UP005-46 | 16 (36)                                | 965 (38.0)            | 201 (7.9)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8038-UP005-65 | 16 (36)                                | 965 (38.0)            | 201 (7.9)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8038-UP005-80 | 16 (36)                                | 965 (38.0)            | 201 (7.9)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8338-UP005-31 | 18 (40)                                | 965 (38.0)            | 211 (8.3)             | 28.9 (1.138)                       | Female        |
| TurboClean® UF 8338-UP005-46 | 18 (40)                                | 965 (38.0)            | 211 (8.3)             | 28.9 (1.138)                       | Female        |

<sup>b</sup> Shipping weight is dependent on packaging material and quantity shipped.

<sup>c</sup> Dimension "C" is the Inner Diameter.



## IMPORTANT INFORMATION

- Start-up:** MANN+HUMMEL Water & Fluid Solutions recommends flushing elements for 30 minutes at low pressure and discarding permeate during the flush prior to operation. For a more detailed start-up procedure, please see Element Start-Up Guide – System Start-Up (TSG-O-005).
- Cleaning:** TurboClean® membrane elements must be cleaned periodically to ensure proper operation and to prevent membrane damage. Please see Membrane Cleaning Guide – Food & Dairy: UF & MF Elements (TSG-C-004).
- Storage:** TurboClean membrane elements must be stored appropriately to ensure proper operation and to prevent membrane damage. Please see Element Storage Guides (TSG-O-009 & TSG-O-010).
- Regulatory:** All models on this sheet conform to USDA 3A sanitary standard 45-03, use FDA (CFR Title 21) compliant materials, comply with EU regulation (EC) No. 1935/2004 and No. 10/2011, and have Halal and Kosher certifications.

## CUSTOMIZABLE SPECIALTY ELEMENTS

MANN+HUMMEL Water & Fluid Solutions offers a full range of membranes and element designs for challenging water and process applications. Technologies include low-fouling RO, submerged UF, continuous high temperature, ultra-high pressure, unique sanitary designs and more. Contact us to customize a product that satisfies your specific requirements.

## Contact



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