

Technical data sheet
Ultrafiltration cassette filter MicroClear® MCXL
Article-No. 80200022

Completely welded filter cassette for the filtration of water. Typical applications: Waste Water in membrane bioreactors, surface water. The cassette consists of:

- housing and header made of polypropylene (FDA approved)
- 21 active filter plates made of polypropylene (FDA approved)
- 2 protective plates made of polypropylene (FDA approved)
- laser welded membrane made of Polyethersulfone (KTW approved)



| Parameter | Unit | Value |
|---------------------------|--------------------|-----------------|
| dimensions | L x B x H mm | 415 x 207 x 492 |
| outlet diameter | mm | 25 |
| protective plates | | 2 |
| No. of active plates | mm | 21 |
| plate spacing | mm | 5,5 |
| total membrane area | m ² | 7 |
| mean flux * | l/m ² h | |
| 2 chemical cleanings/year | | 30 |
| 1 chemical cleaning/year | | 15 |
| maximum flux | l/m ² h | 50 |
| membrane material | | PES |
| cut-off | kDalton | 150 |
| pore size | µm | 0,04 |
| filtration pressure | bar | 0,1-0,25 |
| backflush pressure | bar | 0,07 – 0,1 |
| filter housing material | | PP |
| weight | kg | ca. 11,5 |

* depending on wastewater characteristics

The MicroClear® design and specifications are subject to change without notice.

Design Parameters

Type of wastewater:

- domestic
- municipal
- industrial

Treated Water Quality:

| Parameter | Unit | Design | DIN 19650 ¹ | Guarantee |
|------------------|----------------|---------|------------------------|--------------------|
| BOD | mg/l | < 5 | | |
| COD | mg/l | < 50 | | |
| TSS | mg/l | < 1 | | < 1 |
| TKN-N | mg/l | < 5 | | |
| ph | | 6,5-8 | | |
| Faecal Coliforms | Counts /100 ml | < 1 | < 200 | < 10 |
| Streptococcus | Counts /100 ml | < 1 | < 100 | < 10 |
| Salmonella | Counts /100 ml | < 1 | n.d. ²⁾ | n.d. ²⁾ |
| Virus removal | % | 99,9999 | | 99.99 |

¹⁾ DIN19650 has 4 classes for irrigation water. Class 1 is drinking water. Class 2 is for vegetables that are used for raw consumption, sporting grounds of schools, and public parks. Class 3 and 4 has less quality, then Class 2.

²⁾ n.d. = not detectable

The flux and the retention rate of the MicroClear® system has been tested and approved by the University of Applied Sciences at Giessen-Friedberg, Germany.

The plant performance is subject to the right design of the biological treatment and the pre-treatment of the water. If the design is made according to our recommendations, the designed outlet water quality can be expected.

The advantages of MicroClear® compared to hollow fibre systems:

- higher filtrate output and higher retention rate due to efficient air scour, plate design and optimized membrane
- less membrane area required and therefore lower invest. Lower energy consumption per cubic meter of water
- operation with air scour only is possible (up to one year of operation), less cost for chemicals
- no clogging with fibres (e.g. hair) without fine screening 0.5 mm. No expensive fine screening necessary, only 2 mm punched hole screen
- no breaking of fibres
- multiple permeate outlets enable a complete venting, no unused membrane areas

The advantages of MicroClear® compared to other plate and frame systems:

- higher filtrate output and higher retention rate due to efficient air scour, plate design and optimized membrane
- less membrane area required and therefore lower invest
- medium size bubble aeration with optimized flow pattern leads to less energy consumption of the total system. The aeration system is maintenance free
- MicroClear® has the only state-of-the-art laser-welded membrane module
- MicroClear® is not only welded along the outer edge, but also across the inner area of the membrane. This enables true backflush and higher output
- MicroClear®'s Full-Surface-Distribution technology makes use of the total membrane surface, because the pressure across the membrane is evenly distributed.
- higher packing density and smaller footprint (minus 50%)
- MicroClear® offers ultrafiltration, whereas most competitors use microfiltration. The retention rate for virus removal is 99.9999%
- flexible, modular configuration