

# **BMC200 MF500 Y**

Microfiltration membrane module for beverage  
applications

# BMC200 MF500 Y

## General Information

The BMC200 MF500 Y microfiltration module is used for the clarification of beer, along with other applications in the Food & Beverage industry, like dairy, biotechnology, and pharmaceutical industries. This module excels at efficiently removing yeast. Its inside-out operation in a cross-flow mode enhances its performance, making it a superior alternative to traditional filtration methods like diatomaceous earth. Additionally, its high-performance materials enable high-temperature cleaning and sanitation using lye, acid, or oxidizing agents, ensuring its reliability and effectiveness in maintaining product quality and safety.

### Membrane characteristics

|                               |                      |
|-------------------------------|----------------------|
| Membrane material             | Hydrophilic PES      |
| Pore size                     | 0.6 µm               |
| Membrane fiber inner diameter | 1.5 mm               |
| Filtration mode               | Inside-Out; Vertical |
| Operation mode                | Cross-flow           |

## Operating Conditions <sup>1</sup>

### Filtration mode

|                             |              |
|-----------------------------|--------------|
| Temperature range           | -1°C to 20°C |
| Max. system pressure        | 5 bar        |
| Max. transmembrane pressure | 2 bar        |
| Typical flux                | 25-100 LMH   |
| Max. particle size          | 300 µm       |
| pH range during operation   | 2-12         |

### Cleaning mode <sup>2</sup>

|                                                         |                                           |
|---------------------------------------------------------|-------------------------------------------|
| Max. Temperature <sup>3</sup>                           | 75 °C                                     |
| Max. temperature change <sup>3</sup>                    | 3°C/min                                   |
| Max. system pressure                                    | 5 bar                                     |
| Max. transmembrane pressure & backflush pressure        | 2 bar                                     |
| Max. Nitric acid concentration                          | 0,3 % (w/w)                               |
| Max. active Persulfate concentration                    | 5000 ppm @ pH>10 (max. 1,000,000 ppm.hrs) |
| Max. active H <sub>2</sub> O <sub>2</sub> concentration | 6000 ppm @ pH>10 (max. 2,000,000 ppm.hrs) |
| pH range during cleaning                                | 1-13                                      |
| Max. accum. exposure time to T>60 °C and P>2 bar        | 500 hrs                                   |

<sup>1</sup> Water hammer and pressure spikes should be avoided at all time! This causes stresses leading to mechanical failure of the module especially at elevated temperatures, during temperature ramp up and ramp down. Combinations of elevated pressure, temperature, and cleaning agents, especially oxidizing conditions, will have a negative influence on product lifetime.

<sup>2</sup> Cleaning fluids must be of permeate quality or better. Persulfate and H<sub>2</sub>O<sub>2</sub> cannot be combined, one chooses one or the other!

<sup>3</sup> Avoid sudden temperature changes subjected to the membrane module or element. This can cause mechanical damage. Follow the guidance of the installation manufacturer and never exceed the mentioned temperatures. The max value 3°C/min should never be exceeded during heating or cooling. Irreparable damage could result from failure to adhere to this guideline.

# BMC200 MF500 Y

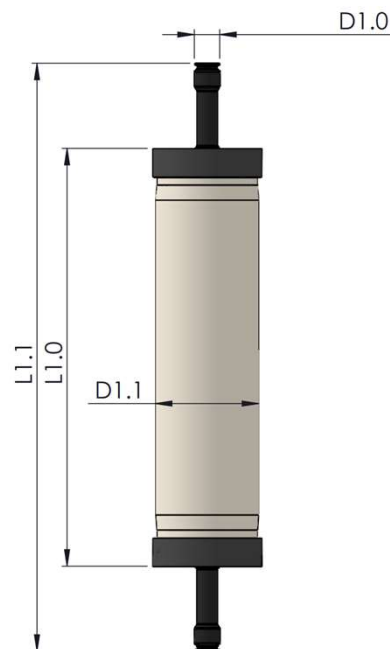
## Module Specification

### Materials of Construction

|           |                                                              |
|-----------|--------------------------------------------------------------|
| Housing   | Noryl™, reinforced with glass fiber and resin on the outside |
| Internals | Noryl™, PP                                                   |
| Potting   | Epoxy Resin                                                  |

### Dimensions

|                       |                          |
|-----------------------|--------------------------|
| Membrane Surface Area | 11 m²                    |
| L1.0                  | 833 mm (32.8")           |
| L1.1                  | 1172.5 mm (46.16")       |
| D1.0                  | 50.5 mm (DN25 Tri-Clamp) |
| D1.1                  | 206 mm (8.11")           |



### Available Module Type

### BMC200 MF500 Y

|              |           |
|--------------|-----------|
| Product-Code | ELEMF0040 |
|--------------|-----------|

## Storage Information

The dry BMC200 MF500 Y must be stored in their original packaging under dry, moderately ventilated conditions at a relative humidity below 80%, protected from sunlight or any heat source. Adhere to the storage and transport temperatures in a range from 0°C to 40°C.

## Product certifications

Compliant with the Code of Federal Regulations (CFR).

Complaint with the requirements of the Federal Food, Drug and Cosmetic Act (FDA).

Compliant with the Commission Regulation (EU) No. 10/2011 on plastic materials and articles intended to come into contact with food.

Compliant with Pressure Equipment Directive (PED) 2014/68/EU – as assembly in combination with end caps supplied by NX Filtration or as stand-alone filtration element when used with 3rd party end caps.

This product is 100% PFAS free and  compliant.

# BMC200 MF500 Y

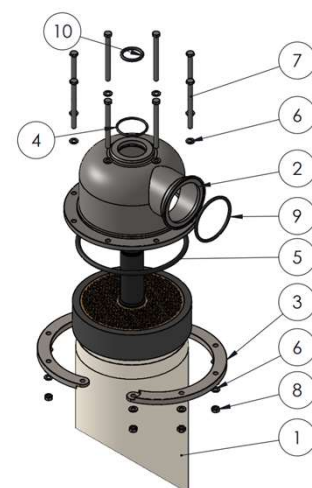
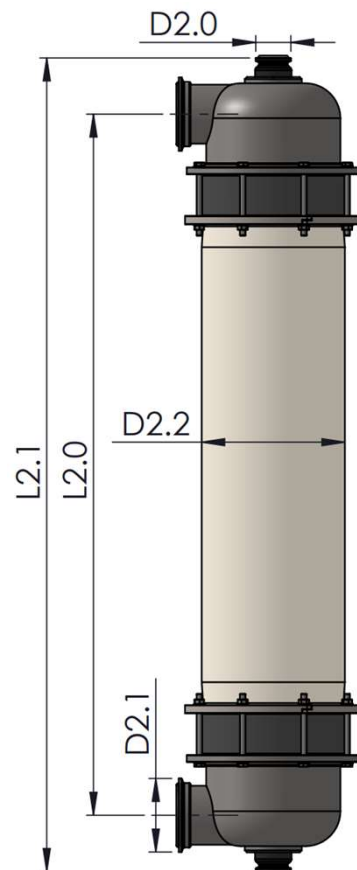
## Connection Configurations

### Dimensions

|      |                          |
|------|--------------------------|
| L2.0 | 1011 mm (39.79")         |
| L2.1 | 1172.5 mm (46.16")       |
| D2.0 | 50.5 mm (DN25 Tri-Clamp) |
| D2.1 | 106 mm (DN80 Tri-Clamp)  |
| D2.2 | 206 mm (8.11")           |

### Assembly Components

|                |                                         |
|----------------|-----------------------------------------|
| (1) Module     | BMC200 MF500 Y                          |
| (2) Endcap     | BMC200 MF Y end cap stainless steel 316 |
| (3) Connection | Clamp bracket stainless steel 304       |
| (4) O-ring     | O-ring EPDM 52x3,3                      |
| (5) O-ring     | O-ring EPDM 55501 190x8                 |
| (6) Washer     | Washer D125-1A-M8-A2                    |
| (7) Bolt       | Hex bolt I4014-M8x100-A2                |
| (8) Nut        | Hex nut D934-M8-A2                      |
| (9) O-ring     | O-ring EPDM 82x5                        |
| (10) O-ring    | O-ring EPDM 33x5                        |



### Available Set (Components 1-10)

### BMC200 MF500 Y Set

|          |           |
|----------|-----------|
| Set-Code | SETMF0058 |
|----------|-----------|

# BMC200 MF500 Y

## Weight Information

### Weight

### BMC200 MF500 Y Set

|                                                 |                  |
|-------------------------------------------------|------------------|
| Dry weight Module (without assembly components) | 10.5 kg (23 lbs) |
| Dry weight Module including assembly components | 21 kg (46.5 lbs) |

## Assembly information

Do not use any lubricants, grease or sealants that contain silicone or mineral oil components during assembly! Only glycerine or water may be used as a lubricant for gaskets, O-rings, couplings etc.

Apply an anti-seize lubricant for the bolts and nuts of the end cap during installation. Do not apply anti-seize for O-ring lubrication!

## Chemical Compatibility

### Compatible with:

- alcohol (max 20%)
- nitric acid\*
- phosphoric acid\*
- sulphuric acid\*
- hydrochloric acid\*
- acetic acid\* citric acid\*
- persulfate\*
- hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>)\*
- Sodium hydroxide (NaOH)\*, potassium hydroxide (KOH)\*
- NaOCl (max 500 ppm and 250,000 ppm.hrs @ pH>10)

\* Obey pH limitations, concentrations and temperatures specified on page 1

### Not Compatible with:

- mineral oils
- aliphatic and aromatic hydrocarbons
- lubricants based on mineral oils
- lubricants based on silicon
- combination of acids
- anti foaming agents

*In case of doubt or questions related to chemical compatibility of the membrane module, contact NX Filtration's Food & Beverage team.*

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