

# SAFESURE® SERIES FILTERS

## PTFE STERILIZING & PRE-FILTRATION GAS FILTER SERIES

SafeSure® Series Filters are available in a variety of capsule and cartridge configurations to match the flow, lifetime, and configuration requirements of multiple gas process applications.

The hydrophobic PTFE allows for high retention rates with low pressure differential. These filters are ideal for vent filters for fermentors, tanks, bio bags, and other applications where sterility barriers are needed.

### MEDIA INFORMATION

TYPE	MEDIA	FEATURES	TYPICAL APPLICATIONS
AFM	Hydrophobic Polytetrafluoroethylene (PTFE) with Polypropylene supports	<ul style="list-style-type: none"> <li>• Sterilizing</li> <li>• High flow rates</li> <li>• Low pressure drop</li> <li>• Higher temperature</li> </ul>	<ul style="list-style-type: none"> <li>• Efficient mycoplasma, bacteria, and particulate retention</li> <li>• Vent filters for fermentors, tanks, etc.</li> <li>• Sterile-grade filtration for air, oxygen, nitrogen, etc.</li> </ul>

### BIOLOGICAL SAFETY

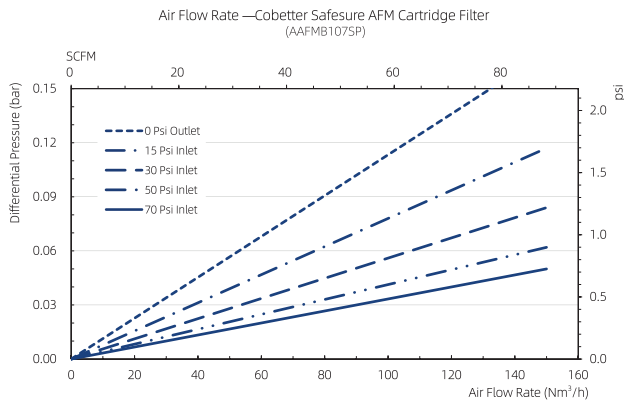
<b>Bacterial Retention</b>	Retention of $10^7$ cfu/cm <sup>2</sup> <i>Brevundimonas diminuta</i> (ATCC19146) according to ASTM F838 for $\leq 0.2 \mu\text{m}$
<b>Non-fiber Releasing</b>	Component materials meet the criteria for a "Non-fiber-releasing filter" as defined in 21 CFR 210.3(b) (6).
<b>Bacterial Endotoxin</b>	Aqueous extraction contains $<0.25$ EU/mL as determined by <i>Limulus Amebocyte Lysate</i> (LAL), USP <85>.
<b>USP &lt;88&gt; Biological Reactivity</b>	Meets the criteria of the USP <88> Biological Reactivity Test for Class V1-121 °C plastics.
<b>Indirect Food Additive</b>	All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182.
<b>Quality Assurance</b>	These products are manufactured in a facility which adheres to ISO® 9001 Practices.



## SPECIFICATIONS - SAFESURE AFM CARTRIDGE

<b>Filter Media</b>	Hydrophobic Polytetrafluoroethylene (PTFE)
<b>Supports</b>	Polypropylene
<b>Core, cage, end caps</b>	Polypropylene
<b>Adapter internal support</b>	Stainless steel 316L
<b>O-rings (cartridge only)</b>	Silicone, EPDM, FKM, or E-FKM (FEP/PFA encapsulated FKM)
<b>O-ring Internal Insert (cartridge only)</b>	PBT
<b>Retention Ratings</b>	0.2 µm
<b>Effective Filtration Area (EFA)</b>	5" 0.34 m <sup>2</sup> (3.7 ft <sup>2</sup> ); 10" 0.68 m <sup>2</sup> (7.3 ft <sup>2</sup> ); 20" 1.36 m <sup>2</sup> (14.6 ft <sup>2</sup> ); 30" 2.04 m <sup>2</sup> (22 ft <sup>2</sup> ); 40" 2.72 m <sup>2</sup> (29.3 ft <sup>2</sup> )
<b>Max. Operating Pressure</b>	0.69 MPa (6.9 bar, 100 psi) at 25°C; 0.40 MPa (4.0 bar, 58 psi) at 60°C; 0.24 MPa (2.4 bar, 35 psi) at 80°C
<b>Max. Differential Pressure</b>	Forward: 0.69 MPa (6.9 bar, 100 psi) at 25°C; 0.40 MPa (4.0 bar, 58 psi) at 60°C; 0.24 MPa (2.4 bar, 35 psi) at 80°C Reverse: 0.30 MPa (3.0 bar, 44 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C
<b>Bubble Point</b>	≥ 0.011 MPa (1.1 bar, 16 psi) at 20°C in 60% isopropanol (IPA) 40% water, air
<b>Sterilization</b>	Steam-in-place: Can be steam sterilized for 30 minutes at 145°C in forward direction (<0.3 bar, 5 psi) with 100 cycles and in reverse direction (<0.1 bar, 1.5 psi) with 50 cycles. Autoclave: Can be autoclaved 200 cycles for 30 minutes at 130°C.

## SAFESURE AFM CARTRIDGE FLOW RATES



## SAFESURE AFM CARTRIDGE ORDERING INFORMATION

EXAMPLE: **AAFMB107EP** = 0.2 µm, 10", 226 o-ring/fin, EPDM o-ring, pharmaceutical application

**A** **AFMB**

**Media**  
AFMB = 0.2 µm

**05**

**Nominal Length**  
05 = 5"  
10 = 10"  
20 = 20"  
30 = 30"  
40 = 40"

**0**

**Connection**  
0 = Double Open End, Flat Gasket  
2 = 226 O-ring/Flat (PBT Insert)  
7 = 226 O-ring/Fin (PBT Insert)  
3 = 222 O-ring/Flat (PBT Insert)  
8 = 222 O-ring/Fin (PBT Insert)

**S**

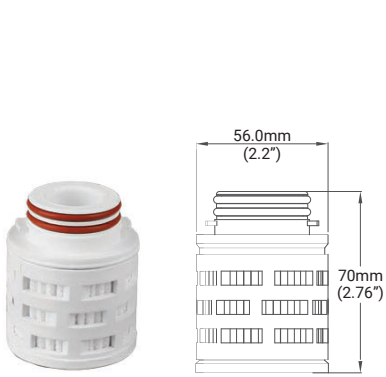
**Seal Material**  
S = Silicone  
E = EPDM  
V = FKM  
P = E-FKM (FEP/PFA encapsulated FKM)

**P**

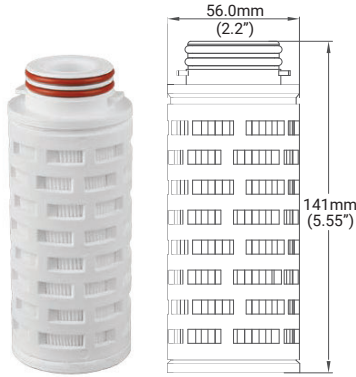
**Application**  
P = Pharmaceutical



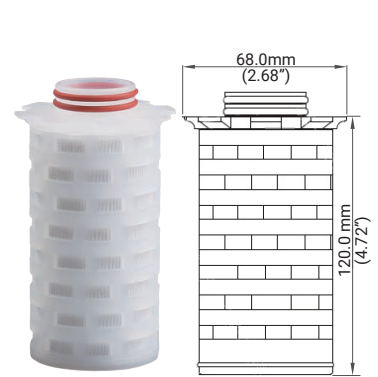
**DIMENSIONS**



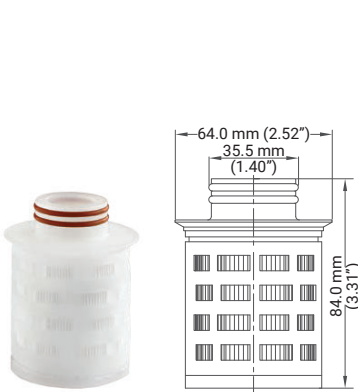
**MH070**  
126 o-ring w/locking tab



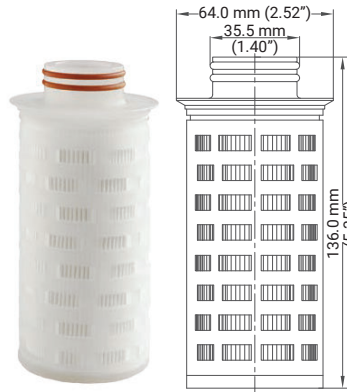
**MH142**  
126 o-ring w/locking tab



**MF120**  
123 o-ring w/ hold down clip



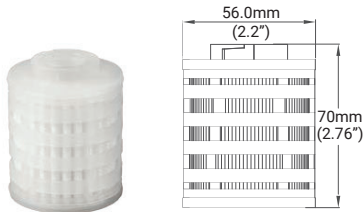
**MP085**  
123 o-ring w/ hold down clip



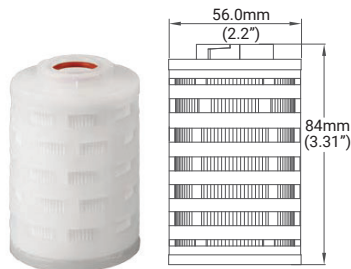
**MP134**  
123 o-ring w/ hold down clip



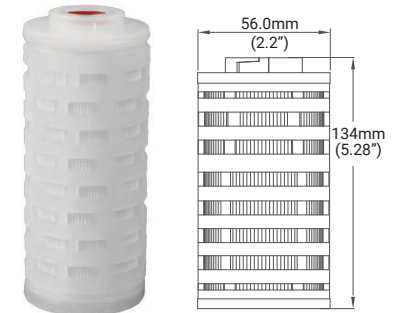
**MD135**  
116 internal o-ring



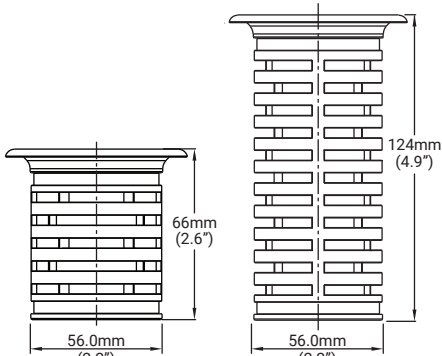
**MK070**  
116 internal o-ring w/locking grooves



**MK084**  
116 internal o-ring w/locking grooves

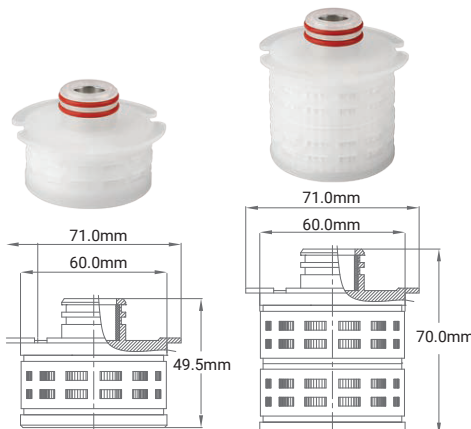


**MK135**  
116 internal o-ring w/locking grooves



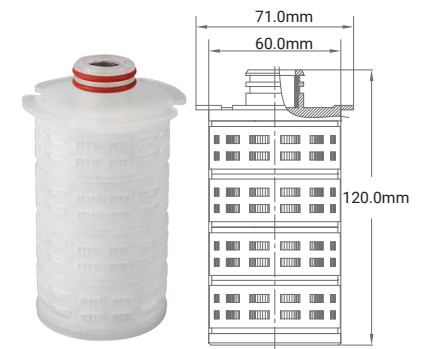
**MC069**  
Flanged End

**MC127**  
Flanged End



**NL049**  
118 O-Rings with tabs

**NL070**  
118 O-Rings with tabs



**NL120**  
118 O-Rings with tabs

## SAFESURE MINI CARTRIDGE ORDERING INFORMATION

EXAMPLE: **NL049AFMBS1P** = Mini cartridge, 49.5 m length, 118 o-ring w/tabs, PTFE membrane, 0.2 µm, Silicone o-ring, Qty 1 per box, for pharmaceutical applications



**Media/Removal Rating**  
AFMB = AFM 0.2 µm



**Seal Material**  
S = Silicone  
V = FKM  
P = E-FKM (FEPFA encapsulated FKM)  
N = No seal



**Box Quantity**  
1 = 1 per box



**Application**  
P = Pharmaceutical

### Filter Code (see drawings)

*Internal 116 O-ring w/locking groove:*

MK070 = 70mm (2.76")

MK084 = 84mm (3.31")

MK135 = 134mm (5.28")

*Internal 116 O-ring:*

MD135 = 134.5mm (5.3")

*123 O-ring w/hold down lip:*

MF120 = 120mm (4.72")

MP085 = 84mm (3.31")

MP134 = 136mm (5.35")

*126 O-ring w/locking tab:*

MH070 = 70mm (2.76")

MH142 = 141mm (5.5")

*Flanged End:*

MC127 = 124 mm (4.88")

MC069 = 66 mm (2.6")

*118 O-ring with tabs:*

NL049 = 49.5 mm

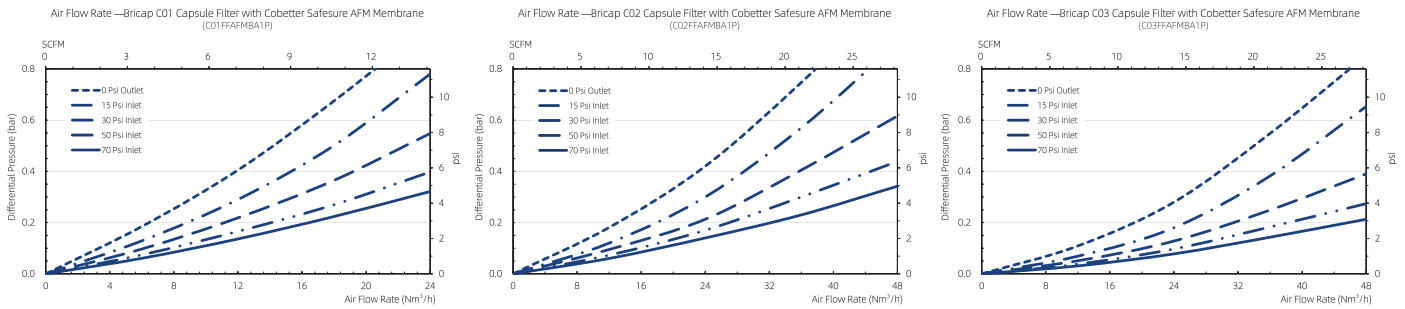
NL070 = 70 mm

NL120 = 120 mm

## SPECIFICATIONS - SAFESURE BRICAP C SMALL CAPSULE FILTERS

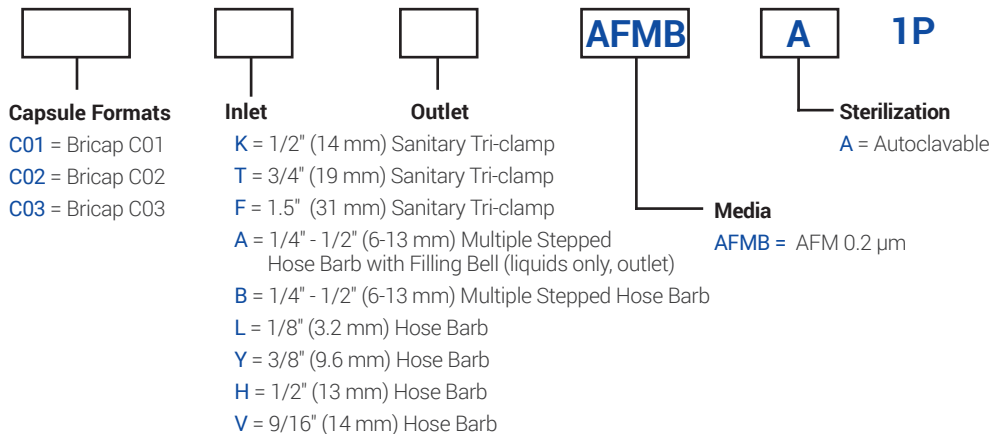
	Bricap C01	Bricap C02	Bricap C03
<b>Filter Media</b>	Hydrophobic Polytetrafluoroethylene (PTFE)		
<b>Housing</b>	Polypropylene		
<b>Supports</b>	Polypropylene		
<b>Core, cage, end caps</b>	Polypropylene		
<b>Vent O-rings</b>	Silicone		
<b>Retention Ratings</b>	0.2 µm		
<b>Effective Filtration Area (EFA)</b>	200 cm <sup>2</sup> (0.2 ft <sup>2</sup> )	480 cm <sup>2</sup> (0.5 ft <sup>2</sup> )	750 cm <sup>2</sup> (0.8 ft <sup>2</sup> )
<b>Vent/Drain</b>	See ordering information		
<b>Max. Operating Pressure</b>	0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C		
<b>Max. Differential Pressure</b>	Forward: 0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C Reverse: 0.21 MPa (2.1 bar, 30 psi) at 25°C		
<b>Bubble Point</b>	≥ 0.011 MPa (1.1 bar, 16 psi) at 20°C in 60% isopropanol (IPA) 40% water, air		
<b>Sterilization</b>	Autoclave: Can be autoclaved 50 cycles for 30 minutes at 130°C. (Cannot be steam sterilized in-line.)		

## SAFESURE SERIES BRICAP C SMALL CAPSULE FILTERS - FLOW RATES



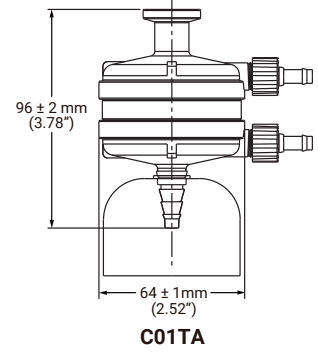
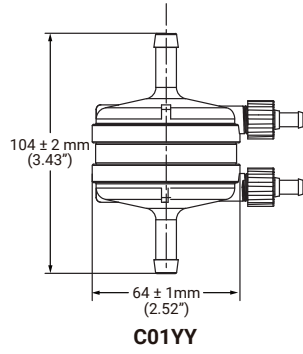
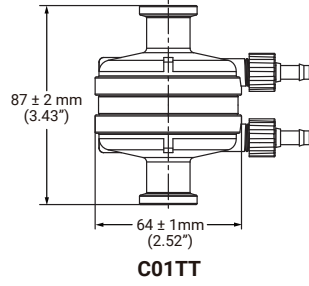
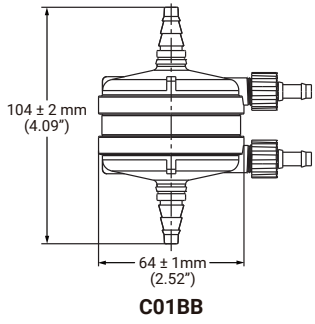
## SAFESURE SERIES BRICAP C SMALL CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **C01TTAFMBA1P** = Bricap C01, 3/4" Tri-Clamp I/O, AFM 0.2 µm, autoclavable

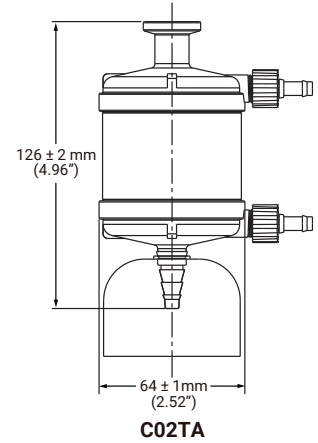
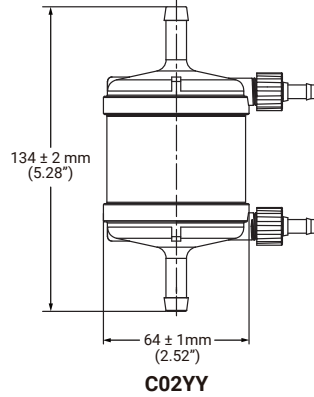
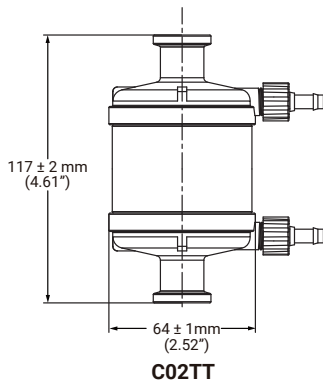
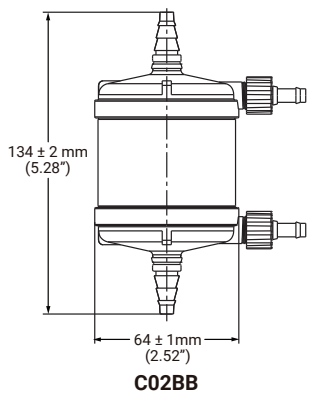


**DIMENSIONS - BRICAP C SMALL CAPSULE FILTERS**

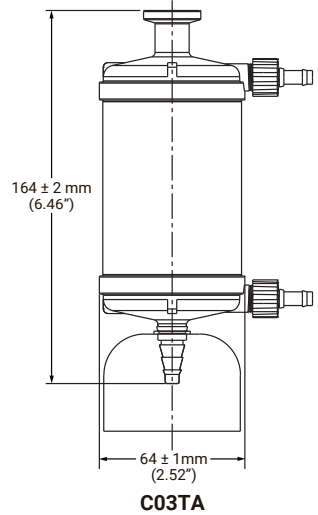
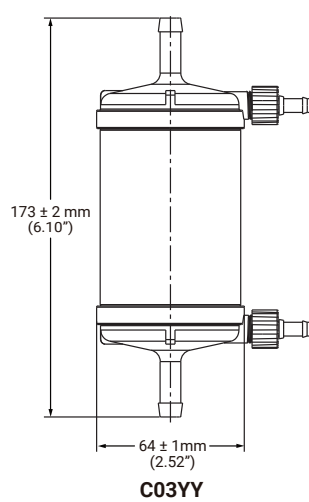
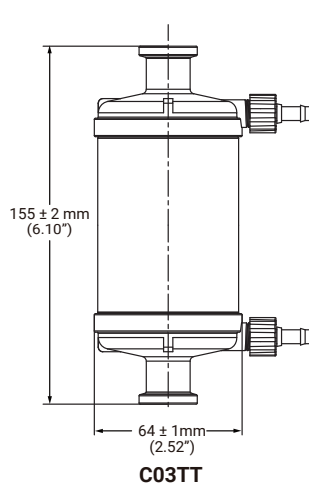
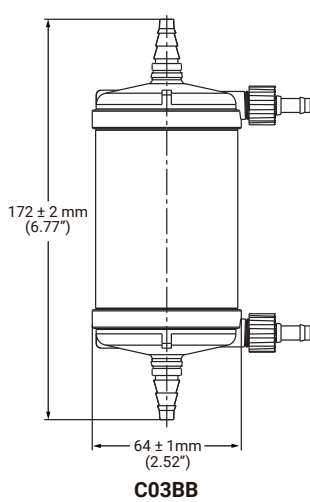
**Bricap C01**



**Bricap C02**



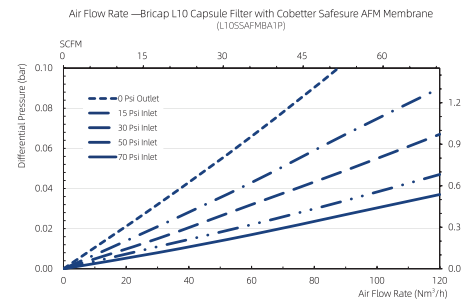
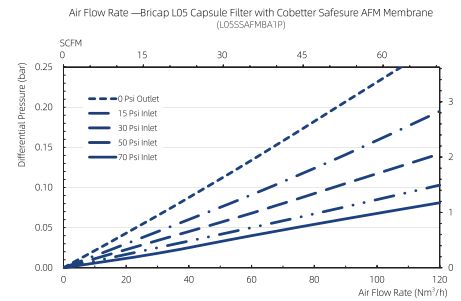
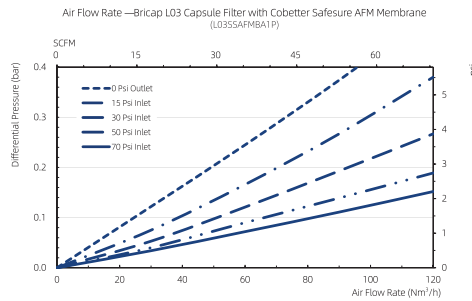
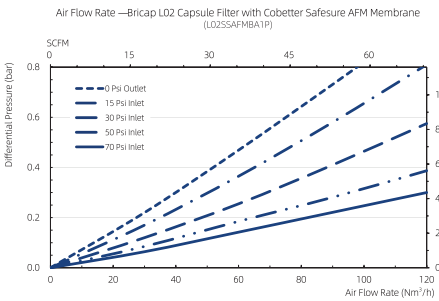
**Bricap C03**



## SPECIFICATIONS - SAFESURE BRICAP L CAPSULE FILTERS

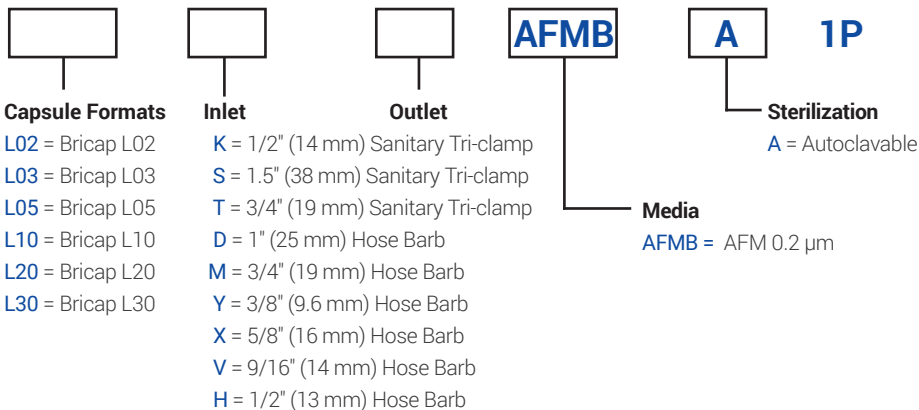
	Bricap L02	Bricap L03	Bricap L05	Bricap L10/T10	Bricap L20/T20	Bricap L30/T30
<b>Filter Media</b>	Hydrophobic Polytetrafluoroethylene (PTFE)					
<b>Housing</b>	Polypropylene					
<b>Supports</b>	Polypropylene					
<b>Core, cage, end caps</b>	Polypropylene					
<b>Vent O-rings</b>	Silicone					
<b>Retention Ratings</b>	0.2 µm					
<b>Effective Filtration Area (EFA)</b>	0.14 m <sup>2</sup> (1.5 ft <sup>2</sup> )	0.20 m <sup>2</sup> (2.2 ft <sup>2</sup> )	0.37 m <sup>2</sup> (3.7 ft <sup>2</sup> )	0.68 m <sup>2</sup> (7.3 ft <sup>2</sup> )	1.36 m <sup>2</sup> (14.6ft <sup>2</sup> )	2.04 m <sup>2</sup> (22 ft <sup>2</sup> )
<b>Vent/Drain</b>	1/4" hosebarb with o-ring seal					
<b>Max. Operating Pressure</b>	0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C					
<b>Max. Differential Pressure</b>	Forward: 0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C Reverse: 0.21 MPa (2.1 bar, 30 psi) at 25°C					
<b>Bubble Point</b>	≥ 0.011 MPa (1.1 bar, 16 psi) at 20°C in 60% isopropanol (IPA) 40% water, air					
<b>Air Diffusion at 20°C</b>	60% isopropanol (IPA) 40% water wetted, at a test pressure of 2.75 bar (40 psi):					
	N/A	N/A	≤12 mL/min	≤24 mL/min		
<b>Water Intrusion at 20°C</b>	at 2.5 bar (36 psi):					
	≤0.15 mL/min	≤0.22 mL/min	≤0.38 mL/min	≤0.75 mL/min		
<b>Sterilization</b>	Autoclave: Can be autoclaved 50 cycles for 30 minutes at 130°C. (Cannot be steam sterilized in-line.)					

## SAFESURE SERIES BRICAP INLINE CAPSULE FILTERS - FLOW RATES

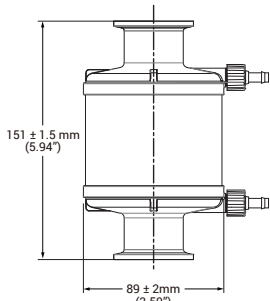


## SAFESURE SERIES BRICAP INLINE CAPSULE FILTERS - ORDERING INFORMATION

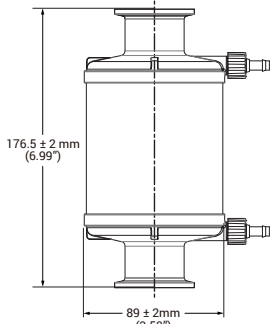
EXAMPLE: **L03SSAFMBA1P** = Inline Bricap, 1.5" Tri-Clamp I/O, AFMB 0.2 µm, autoclavable



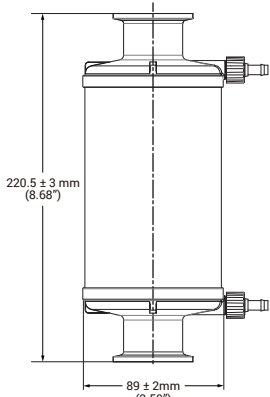
## DIMENSIONS - BRICAP L



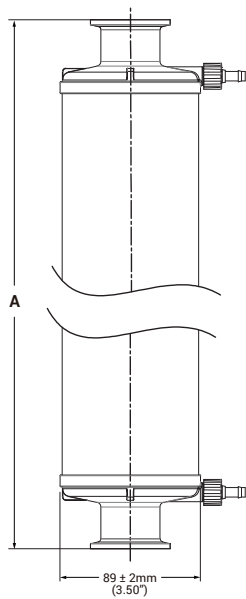
**L02SS**



**L03SS**

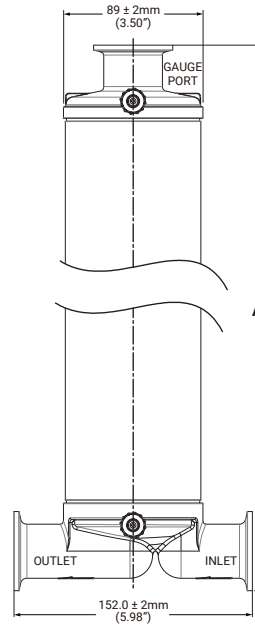


**L05SS**



- L10SS "A"** = 338.5 ± 2 mm (13.31")
- L20SS "A"** = 575.5 ± 3 mm (22.66")
- L30SS "A"** = 828.0 ± 3 mm (32.60")

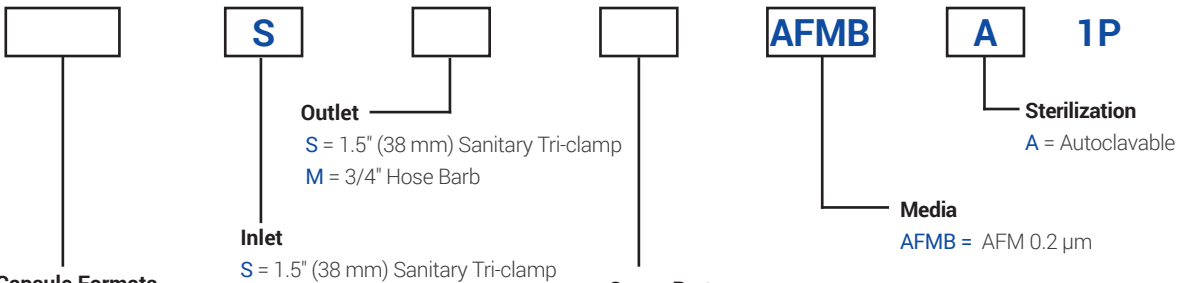
## DIMENSIONS - BRICAP T



- T10SS "A"** = 348.0 ± 2 mm (13.70")
- T20SS "A"** = 586.0 ± 3 mm (23.07")
- T30SS "A"** = 839.0 ± 3 mm (33.03")

## SAFESURE BRICAP T CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **T10SSAFMBA1P** = T-line Bricap, 10", 1.5" Tri-Clamp I/O, AFMB 0.2 µm, autoclavable



### Capsule Formats

- T10** = Bricap T10, EFA: 0.68 m<sup>2</sup> (7.3 ft<sup>2</sup>)
- T20** = Bricap T20, EFA: 1.36 m<sup>2</sup> (14.6 ft<sup>2</sup>)
- T30** = Bricap T30, EFA: 02.04 m<sup>2</sup> (22 ft<sup>2</sup>)

### Gauge Port

- S** = 1.5" Sanitary Tri-clamp on bowl
- T** = 3/4" (19 mm) Sanitary Tri-clamp on bowl
- N** = without

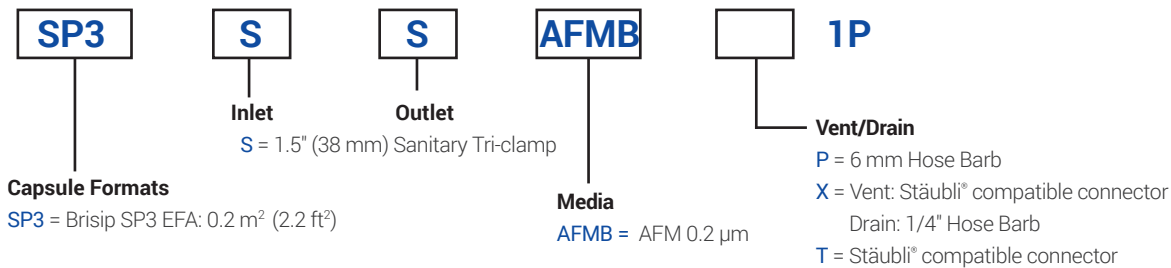


## SPECIFICATIONS - SAFESURE BRICAP SP3 CAPSULE FILTERS

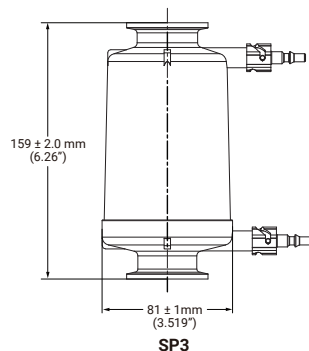
<b>Filter Media</b>	Hydrophobic Polytetrafluoroethylene (PTFE)
<b>Shell</b>	Polyetherimide (PEI)
<b>Supports</b>	Polypropylene
<b>Core, cage, end caps</b>	Polypropylene
<b>Vent O-rings</b>	Silicone
<b>Retention Ratings</b>	0.2 µm
<b>Effective Filtration Area (EFA)</b>	0.2 m <sup>2</sup> (2.2 ft <sup>2</sup> )
<b>Vent/Drain</b>	See ordering information. (Double O-ring Seal)
<b>Max. Operating Pressure</b>	0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C
<b>Max. Differential Pressure</b>	Forward: 0.55 MPa (5.5 bar, 80 psi) at 25°C; 0.10 MPa (1.0 bar, 15 psi) at 80°C Reverse: 0.21 MPa (2.1 bar, 30 psi) at 25°C
<b>Bubble Point</b>	≥ 0.011 MPa (1.1 bar, 16 psi) at 20°C in 60% isopropanol (IPA) 40% water, air
<b>Sterilization</b>	Can be steam-sterilized for 30 minutes at 145°C in forward direction (0.3 bar, 5 psi) with 100 cycles and in reverse direction (<0.1bar, 1.5 psi) with 50 cycles. Can be autoclaved 200 cycles for 30 minutes at 130°C.

## SAFESURE STEAM-IN-PLACE BRISIP CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **SP3SSAFMBP1P** = Brisip SP3 capsule, 1.5" sanitary tri-clamp I/O, hydrophobic PTFE membrane, 0.2 µm, 6 mm hose barb vent/drain



## DIMENSIONS - BRICAP SP3 CAPSULE FILTER



BANNER INDUSTRIES IS THE EXCLUSIVE DISTRIBUTOR FOR COBETTER PRODUCTS IN THE USA  
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CBBPP1193 Rev. 05132023

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