

## FluoroPV® FILTER CARTRIDGES

### HYDROPHILIC PVDF MEMBRANE FILTERS FOR STERILIZED FILTRATION OF PHARMACEUTICAL LIQUIDS

FluoroPV® Filter Cartridges are composed of a unique hydrophilic polyvinylidene fluoride (PVDF) membrane characterized by low extractable and protein binding. They are suitable for the sterilized filtration of pharmaceutical liquids including ophthalmic liquids, biological and other diluted preservative solutions.

FEATURE	BENEFIT
<b>Hydrophilic PVDF Membrane</b>	Low extractable and protein binding
	Broad chemical compatibility and temperature resistance
	Excellent durability proven by testing forward/reverse pulse up to 100x
	Design allows for multiple autoclave cycles and extended use

#### QUALITY STANDARDS

<b>Quality Assurance</b>	These products are manufactured in a facility which adheres to ISO 9001:2015 Practices.
<b>Bacterial Retention</b>	Retention of 10 <sup>7</sup> cfu/cm <sup>2</sup> <i>Brevundimonas diminuta</i> (ATCC® 19146) according to ASTM F838 for ≤ 0.2 μm
<b>TOC/Conductivity at 25°C</b>	Autoclaved filter effluent meets the USP <643> for Total Organic Carbon and USP <645> for Water Conductivity per WFI requirements after a UPW flush of specified volume.
<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 of autoclaved filter contains < 0.25 EU/mL as determined by Limulus; Amebocyte Lysate (LAL), USP <85>
<b>USP &lt;87&gt; Cytotoxicity</b>	Meet the requirement of USP <87> In Vitro Cytotoxicity Test
<b>USP &lt;88&gt; Biological Toxicity</b>	Meet the criteria of the USP <88> Biological Reactivity Test for Class VI-121°C plastics.
<b>Indirect Food Additive</b>	All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182.

#### SPECIFICATIONS

<b>Filter media</b>	LHPVND: Single-Layer Hydrophilic PVDF Membrane DLHPVND: Double-Layer Hydrophilic PVDF Membrane
<b>Supports/core/cage/end caps</b>	Polypropylene
<b>Effective filtration area</b>	0.58m <sup>2</sup> (6.2 ft <sup>2</sup> )/ Ø69-10 inch
<b>O-rings</b>	Silicone, EPDM, FKM, FEP/PFA encapsulated FKM
<b>O-ring internal insert</b>	PBT

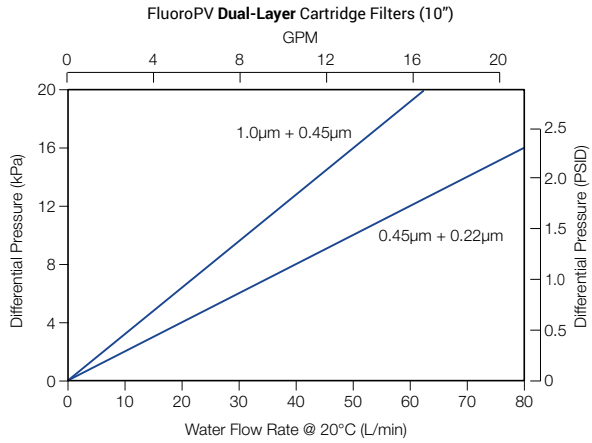
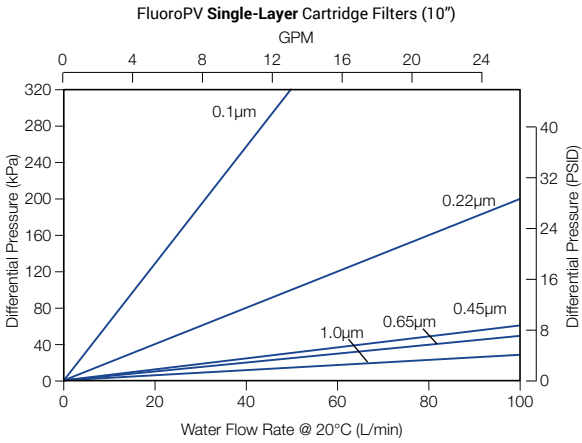


#### Typical Applications

- Antibiotics
- Aggressive Solvents
- Biological Agents
- Blood Products
- Chemicals
- Cold and Hot WFI
- Ophthalmic Solutions
- Sanitizing Agents

<b>Cartridge diameter</b>	69 mm (2.7 in.)	
<b>Max. Operating pressure (cartridge)</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 (cartridge)</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: 0.3 MPa (3.0 bar, 44 psi) at 25°C; 0.1 MPa (1.0 bar, 15 psi) at 80°C	
<b>Bubble point</b>	<p>Single Layer</p> <p>0.1 <math>\mu\text{m} \geq 0.16 \text{ MPa}</math> (1.6 bar, 23 psi) in 60% IPA</p> <p>0.22 <math>\mu\text{m} \geq 0.32 \text{ MPa}</math> (3.2 bar, 46 psi) in water</p> <p>0.45 <math>\mu\text{m} \geq 0.12 \text{ MPa}</math> (1.2 bar, 17 psi) in water</p> <p>0.65 <math>\mu\text{m} \geq 0.1 \text{ MPa}</math> (1.0 bar, 15 psi) in water</p> <p>1.0 <math>\mu\text{m} \geq 0.04 \text{ MPa}</math> (0.4 bar, 6 psi) in water</p>	<p>Double Layer</p> <p>0.45 <math>\mu\text{m} + 0.22 \mu\text{m} \geq 0.32 \text{ MPa}</math> (3.2 bar, 46 psi) in water</p> <p>1.0 <math>\mu\text{m} + 0.45 \mu\text{m} \geq 0.12 \text{ MPa}</math> (1.2 bar, 17.5 psi) in water</p>
<b>Steam sterilization (cartridges)</b>	up to 100 cycles forward and 50 reverse cycles @ 30 minutes at 135°C < 0.3 bar (4.3 psi) per cycle	
<b>Autoclave (cartridges)</b>	up to 400 cycles for 30 minutes at 130°C	

**FLOW RATES**



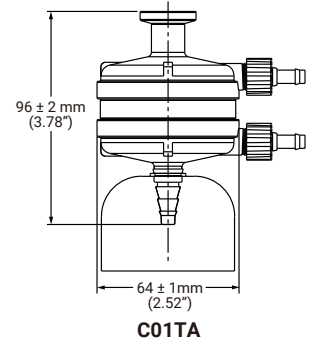
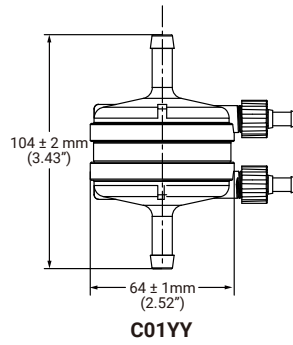
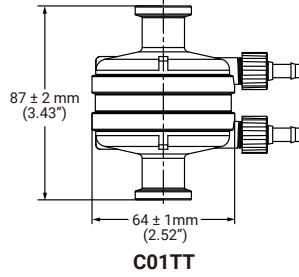
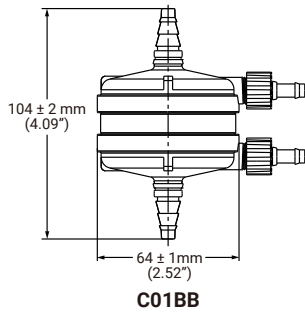
**ORDERING INFORMATION**

EXAMPLE: DLHPVNDR2222HSF10S-P = 0.22  $\mu\text{m} + 0.22 \mu\text{m}$ , 226/Fin, 10" filter with silicone seals

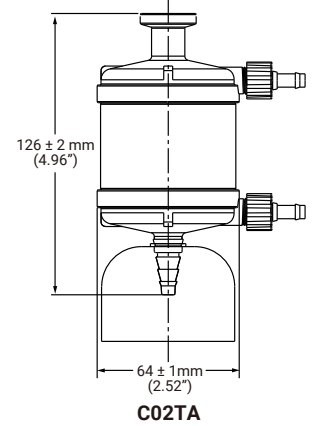
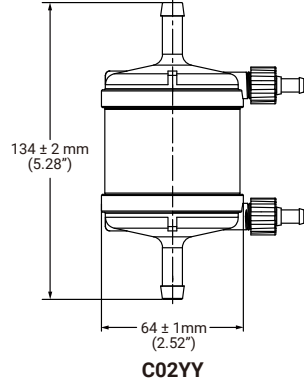
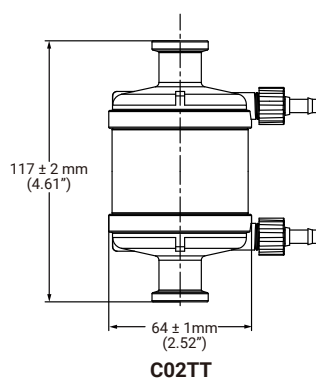
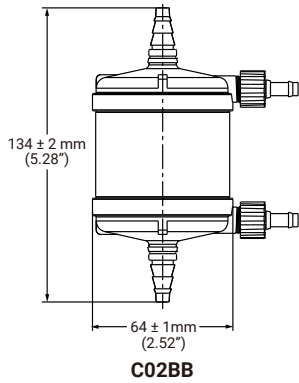
					<b>-P</b>
<b>Layers</b>					<b>Seal Material</b>
LHPVND = Single Layer					S = Silicone
DLHPVNDR = Dual Layer					E = EPDM
					V = FKM
					P = E-FKM (FEP/PFA encapsulated FKM)
<b>Removal Rating</b>			<b>Connection</b>		<b>Nominal Length</b>
<i>Single Layer</i>	<i>Dual Layer</i>		DOE = Double Open End, Flat Gasket	05 = 5"	10 = 10"
0010 = 0.1 $\mu\text{m}$	2210 = 0.22 $\mu\text{m} + 0.1 \mu\text{m}$		HTC = 222 O-ring/Flat (PBT Insert)	20 = 20"	30 = 30"
0022 = 0.22 $\mu\text{m}$	4510 = 0.45 $\mu\text{m} + 0.1 \mu\text{m}$		HTF = 222 O-ring/Fin (PBT Insert)	40 = 40"	
0045 = 0.45 $\mu\text{m}$	6510 = 0.65 $\mu\text{m} + 0.1 \mu\text{m}$		HSC = 226 O-ring/Flat (PBT Insert)		
0065 = 0.65 $\mu\text{m}$	2222 = 0.22 $\mu\text{m} + 0.22 \mu\text{m}$		HSF = 226 O-ring/Fin (PBT Insert)		
0100 = 1.0 $\mu\text{m}$	4522 = 0.45 $\mu\text{m} + 0.22 \mu\text{m}$				
	6522 = 0.65 $\mu\text{m} + 0.22 \mu\text{m}$				
	4545 = 0.45 $\mu\text{m} + 0.45 \mu\text{m}$				
	6545 = 0.65 $\mu\text{m} + 0.45 \mu\text{m}$				
	1045 = 1.0 $\mu\text{m} + 0.45 \mu\text{m}$				

**DIMENSIONS - BRICAP C SMALL CAPSULE FILTERS**

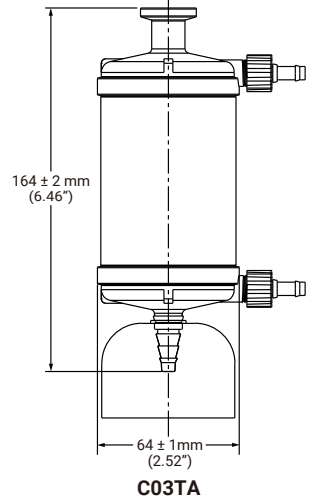
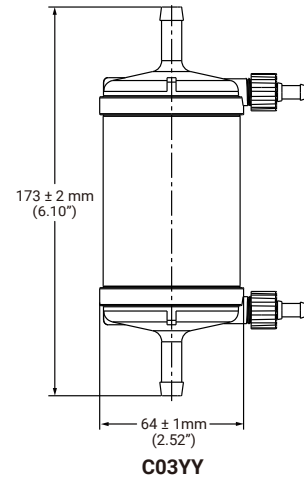
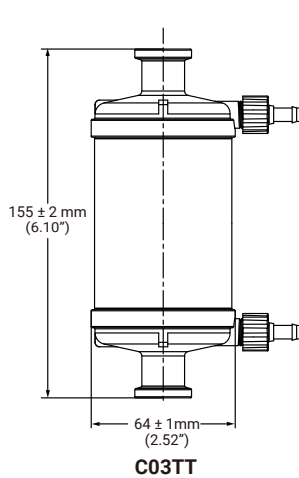
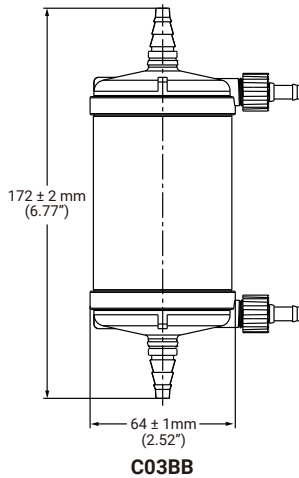
**Bricap C01**



**Bricap C02**



**Bricap C03**



**MAX OPERATING PRESSURE (CAPSULE)**

0.55 MPa (5.5 bar, 80 psi) at 25°C  
0.10 MPa (1.0 bar, 14.5 psi) at 80°C

**MAX DIFFERENTIAL PRESSURE (CAPSULE)**

Forward: 0.55 MPa (5.5 bar, 80 psi) at 25°C  
0.10 MPa (1.0 bar, 14.5 psi) at 80°C

Reverse: 0.21 MPa (2.1 bar, 30 psi) at 25°C

**Sterilization**

Autoclavable Capsules:

Can be autoclaved for 25 cycles for 30 minutes at 130°C. (Cannot be steam sterilized in-line.)

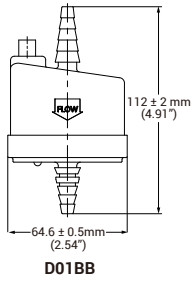
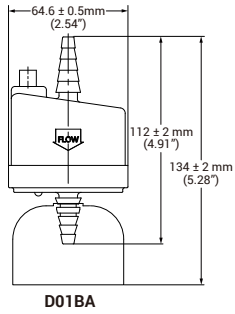
Gamma Compatible Capsules:

Can be sterilized by gamma irradiation at 25-45 kGy, or can be autoclaved for 5 cycles for 60 minutes at 126°C. (Cannot be steam sterilized in-line.)

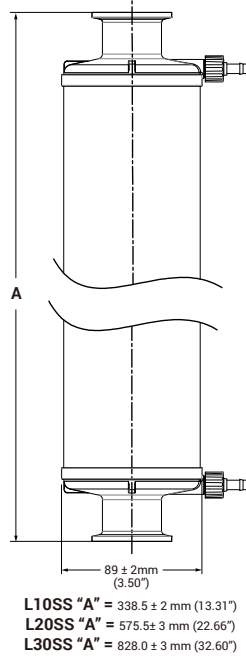
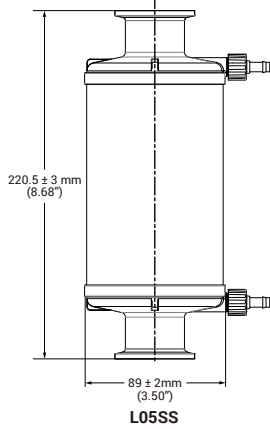
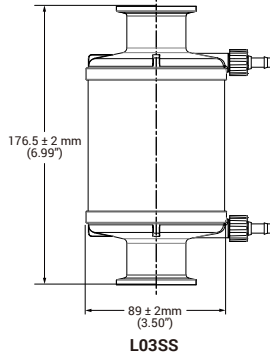
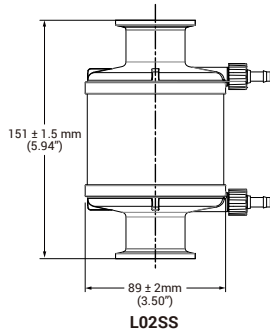
Sterile Capsules:

Gamma irradiated at 25-45 kGy in sterile package and cannot be re-sterilized.

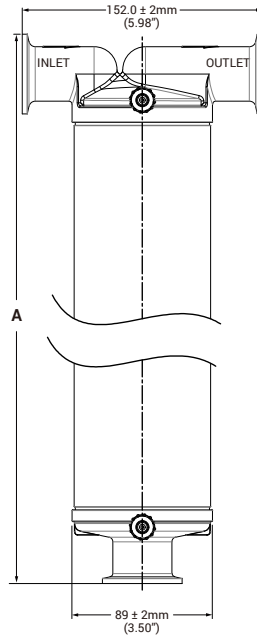
### DIMENSIONS - BRICAP D



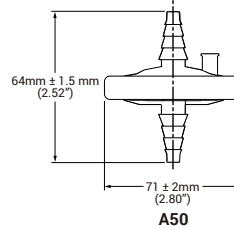
### DIMENSIONS - BRICAP L



### DIMENSIONS - BRICAP T



### DIMENSIONS - BRICAP DISC FILTER

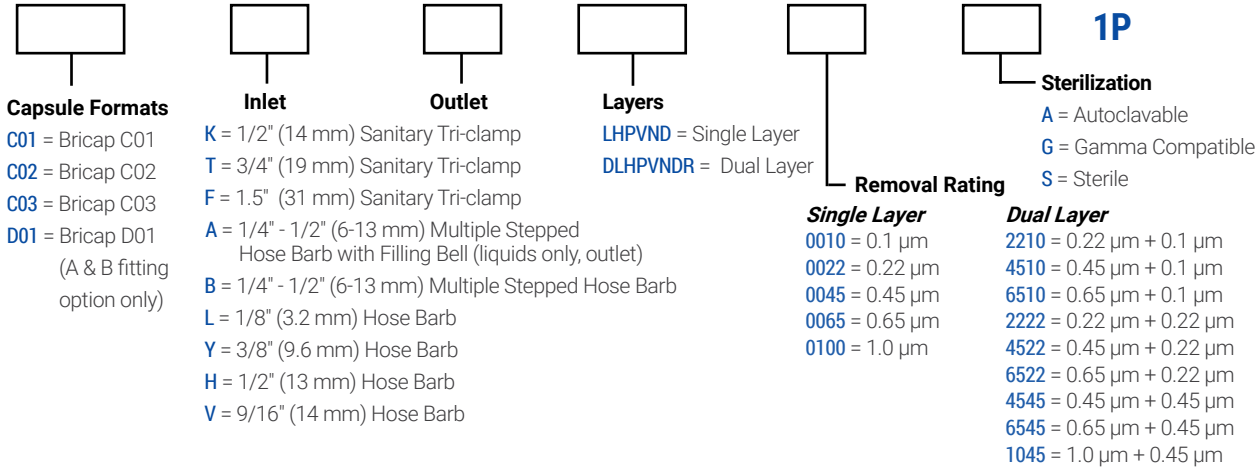


### FluoroPV SERIES FILTRATION AREA

Bricap C/D	Bricap L	Bricap T	Cartridges
<b>C01:</b> 180 cm <sup>2</sup>	<b>L02:</b> 0.12 m <sup>2</sup>	<b>T10:</b> 0.55 m <sup>2</sup>	5": 0.28 m <sup>2</sup> (3 ft <sup>2</sup> )
<b>C02:</b> 420 cm <sup>2</sup>	<b>L03:</b> 0.16 m <sup>2</sup>	<b>T20:</b> 1.1 m <sup>2</sup>	10": 0.55 m <sup>2</sup> (6 ft <sup>2</sup> )
<b>C03:</b> 660 cm <sup>2</sup>	<b>L05:</b> 0.28 m <sup>2</sup>	<b>T30:</b> 1.65 m <sup>2</sup>	20": 1.1 m <sup>2</sup> (12 ft <sup>2</sup> )
<b>D01:</b> 350 cm <sup>2</sup>	<b>L10:</b> 0.55 m <sup>2</sup>		30": 1.65 m <sup>2</sup> (18 ft <sup>2</sup> )
	<b>L20:</b> 1.1 m <sup>2</sup>		40": 2.2 m <sup>2</sup> (24 ft <sup>2</sup> )
	<b>L30:</b> 1.65 m <sup>2</sup>		

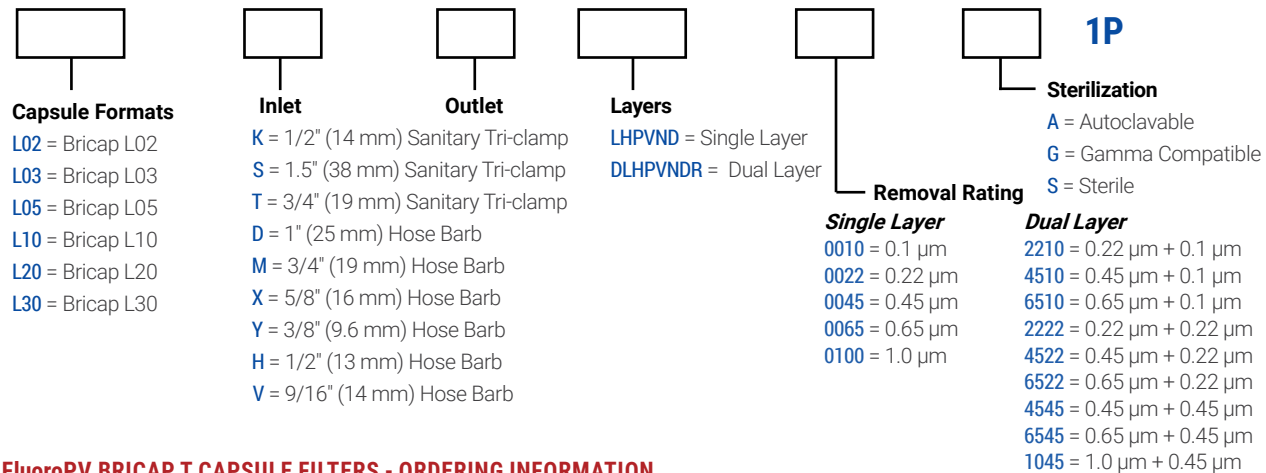
## FluoroPV BRICAP C/D SMALL CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **C01TTLHPVND0022S1P** = Bricap C01, 3/4" Tri-Clamp I/O, single layer 0.22 µm, sterile



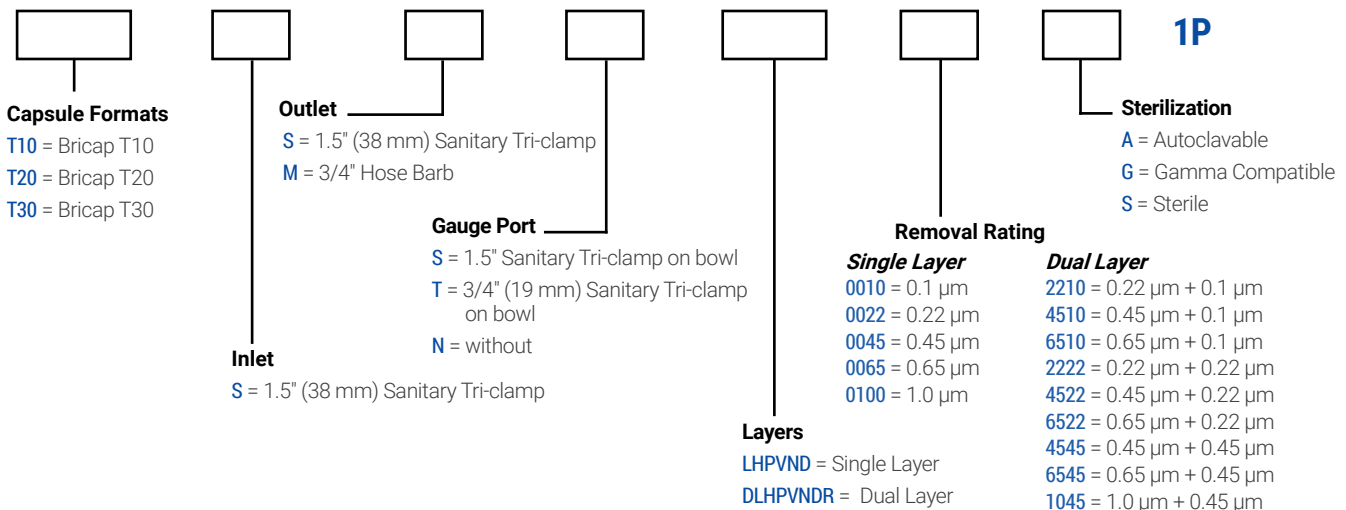
## FluoroPV SERIES BRICAP L INLINE CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **L03SSLHPVND0045S1P** = Inline Bricap, 10", 1.5" Tri-Clamp I/O, single layer 0.45 µm, sterile



## FluoroPV BRICAP T CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **T10SSLHPVND0065S1P** = T-line Bricap, 10", 1.5" Tri-Clamp I/O, single layer 0.65 µm, sterile



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