

STARCAPS CAPSULE FILTER SERIES

DESIGNED FOR A WIDE RANGE OF PHARMACEUTICAL APPLICATIONS

StarCaps Capsule Filters are self-contained, ready-to-use capsule filters. Available in varying sizes and filter media including depth filters, liquid sterile-grade filters and gas filters, they were developed to meet a wide range of pharmaceutical filtration requirements from R&D to production.

The StarCaps Capsule Filter Series eliminates cleaning validation requirements when compared to the traditional filter cartridge and housing combination.

FEATURE	BENEFIT
Available in a variety of medias and configurations	Capsules available for a wide range of application requirements, from R&D to production usage
Thermal welding technology	No adhesive resins to ensure capsule filter's cleanliness and long-use pressure endurance
Sanitary flange and hose barb connections	Provide clean and easy connections

QUALITY STANDARDS

Quality Assurance	These products are manufactured in a facility which adheres to ISO 9001 Practices.
TOC / Conductivity at 25°C	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.
Particle Shedding	Autoclaved filter effluent meets the requirements in USP <788> for large volume injections
Non-Fiber Releasing	Component materials meet the criteria for a "Non-fiber-releasing filter" as defined in 21 CFR 210.3 (b) (6)
Bacterial Endotoxin	Aqueous extraction of autoclaved filter contains < 0.25 EU/mL as determined by Limulus; Amebocyte Lysate (LAL), USP <85>.
USP <87> Cytotoxicity	Meet the requirement of USP <87> In Vitro Cytotoxicity Test
USP <88> Biological Toxicity	Meet the criteria of the USP <88> Biological Reactivity Test for Class VI-121°C plastics.
Indirect Food Additive	All component materials meet the FDA Indirect Food Additive requirements cited in 21 CFR 177-182, and EU framework regulation [1935/2004/EC].



Typical Applications

- Biological Fluids
- Buffer Solutions
- Chemicals
- Cleaning and Disinfecting Solutions
- Injectable Solutions
- Gas Filtration

SPECIFICATIONS

Filter media*	Membrane Media	DN66T DN66PC SPSHR APSB DPSHSL LPV LHPVNDR LHPVHBR DLHPVNDR DLHPVHBR LHPF GPFP (for gas) LPF (for liquids)	Dual Layer Nylon Positively Charged Nylon Symmetric PES Membrane Asymmetric PES Membrane Double-Layer PES Membrane Hydrophobic PVDF Hydrophilic PVDF Membrane Charged Zeta PVDF Membrane Dual-Layer Hydrophilic PVDF Membrane Dual-Layer Charged Zeta PVDF Membrane Hydrophilic PTFE Membrane Hydrophobic PTFE Membrane Hydrophobic PTFE Membrane
	Depth Media	APP HPP PFSA2 LGFP & GGFP	Absolute-Rated Depth Polypropylene Nominal-Rated Depth Polypropylene Multi-Layer Polypropylene Glass Fiber
Outer Shell	Polypropylene (Autoclavable)		
Max. Continuous Operating Temperature	40°C		
Max. Forward Differential Pressure	0.5 MPa (5.0 bar, 72.5psi) at 20°C		
Autoclave	50 to 200 cycles for 30 minutes at up to 130°C Please contact your Cobetter Sales Engineer to received specific information regarding autoclaving.		

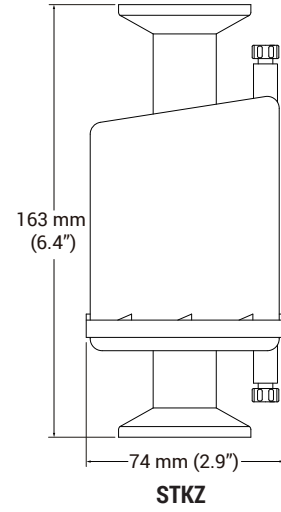
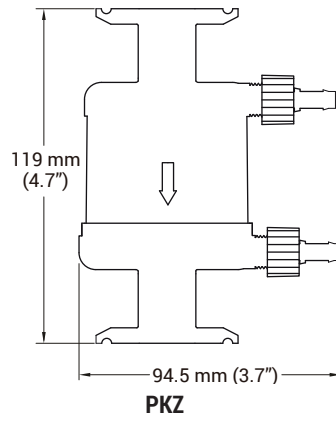
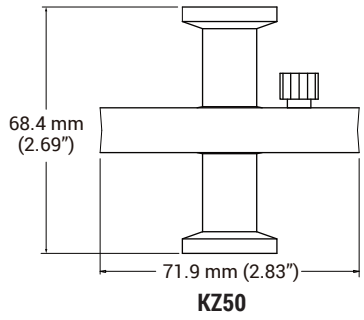
* This table does not indicate all the available filtration media.
For additional media options, please contact Cobetter or your Cobetter Sales Engineer.

Sterile-grade Capsule Filters are Integrity Tested. Please contact your Cobetter Sales Engineer for the Integrity Test Data related to your sterile-grade filter

EFFECTIVE FILTRATION AREA

Capsule	SPSHR & DN66T, DN66PC	APSB	DPSHSL	LHPVNDR	LHPVHBR, LPV	DLHPVNDR	DLHPVHBR
KZ50	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²
PKZ	370 cm ²	440 cm ²	370 cm ²	370 cm ²	370 cm ²	350 cm ²	350 cm ²
STKZ	1170 cm ²	1430 cm ²	1170 cm ²	1140 cm ²	1140 cm ²	1140 cm ²	1140 cm ²
WSF 5 inch	2660 cm ²	2640 cm ²	2660 cm ²	2760 cm ²	2760 cm ²	2640 - 2660 cm ²	2640 - 2660 cm ²
WSF 10 inch	5080 cm ²	4995 cm ²	4970 cm ²	5220 cm ²	5220 cm ²	4990 - 5030 cm ²	4990 - 5030 cm ²
92WM	390 cm ²	470 cm ²	430 cm ²	390 cm ²	390 cm ²	380 - 500 cm ²	380 - 500 cm ²
WM	720 cm ²	870 cm ²	800 cm ²	720 cm ²	720 cm ²	800 - 1030 cm ²	800 - 1030 cm ²
195WM	1320 cm ²	1530 cm ²	1350 cm ²	1320 cm ²	1320 cm ²	1420 - 1820 cm ²	1420 - 1820 cm ²
STBT1	1140 cm ²	1430 cm ²	1170 cm ²	1140 cm ²	1140 cm ²	1140 cm ²	1140 cm ²
STBT2	2060 cm ²	2520 cm ²	2060 cm ²	2060 cm ²	2060 cm ²	2060 cm ²	2060 cm ²
Capsule	LHPF & GGFP	GPFP	LPF	APP	HPP	PFSA2	LGFP
KZ50	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²	33 cm ²
PKZ	580 cm ²	490 cm ²	610 cm ²	340 cm ²	340 cm ²	200 cm ²	180 cm ²
STKZ	1790 cm ²	1640 cm ²	1570 cm ²	930 cm ²	1000 cm ²	420 cm ²	570 cm ²
WSF 5 inch	4110 cm ²	3870 cm ²	3870 cm ²	1920 - 3000 cm ²	2400 cm ²	370 - 1260 cm ²	840 - 1560 cm ²
WSF 10 inch	7690 cm ²	7230 cm ²	7240 cm ²	3630 - 5670 cm ²	4540 cm ²	840 - 2440 cm ²	1590 1950 cm ²
92WM	580 cm ²	910 cm ²	560 cm ²	460 cm ²	390 cm ²	220 cm ²	230 cm ²
WM	1070 cm ²	1740 cm ²	1130 cm ²	870 cm ²	740 cm ²	440 cm ²	410 cm ²
195WM	1890 cm ²	3060 cm ²	1930 cm ²	1150 cm ²	1300 cm ²	780 cm ²	730 cm ²
STBT1	1790 cm ²	1640 cm ²	1570 cm ²	930 cm ²	1000 cm ²	570 cm ²	570 cm ²
STBT2	3150 cm ²	2880 cm ²	2790 cm ²	1700 cm ²	1820 cm ²	970 cm ²	1096 cm ²

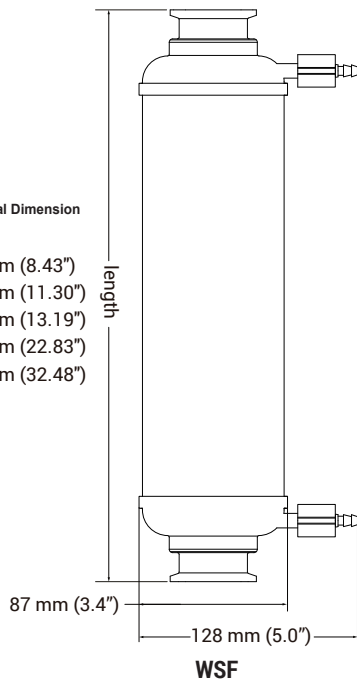
DIMENSIONS



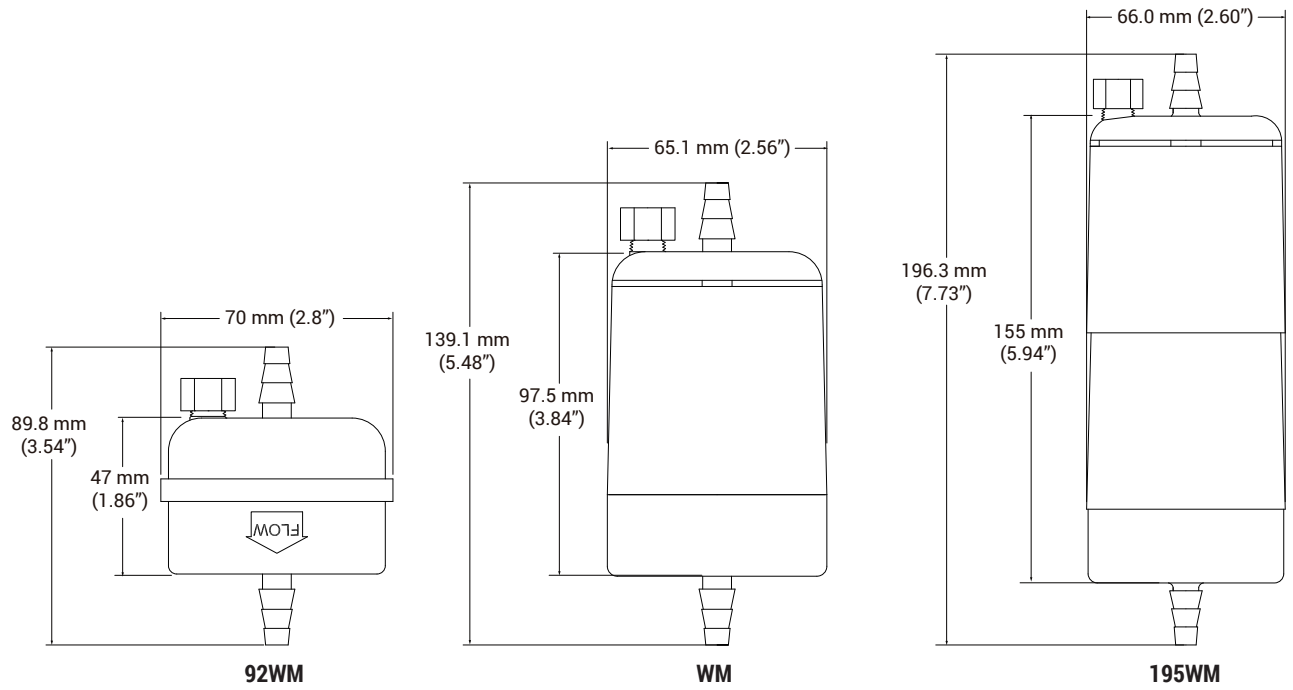
Inlet/Outlet	1/2" Sanitary Tri-Clamp	1" Sanitary Tri-Clamp	1" Sanitary Tri-Clamp
Vent/Drain	Luer Lock	6 mm Hose Barb	M5

Cartridge Length (nominal) Total Dimension

5"	214 mm (8.43")
8"	287 mm (11.30")
10"	335 mm (13.19")
20"	580 mm (22.83")
30"	825 mm (32.48")



Inlet/Outlet	1.5" Sanitary Tri-Clamp
Vent/Drain	6 mm Hose Barb



92WM

WM

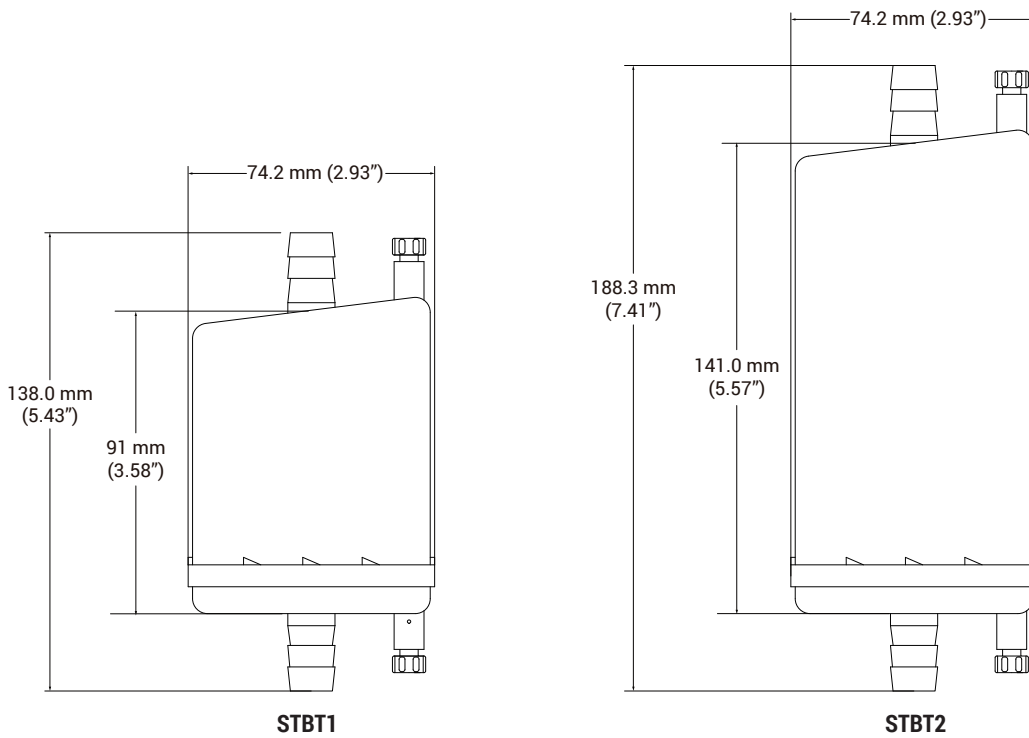
195WM

Inlet/Outlet

6 - 11 mm (1/4" - 3/8") Stepped Hose Barb

Vent/Drain

1/8" NPT



STBT1

STBT2

Inlet/Outlet

12 mm Stepped Hose Barb

Vent/Drain

1/8" NPT

ORDERING INFORMATION

EXAMPLE: **KZ50-SPSHR0022P** = KZ50 capsule, symmetric PES membrane, 0.22 µm



Capsule Code

92WM = 92WM capsule
 195WM = 95WM capsule
 KZ50 = 50 mm disc filter
 PKZ = PKZ capsule
 STBT1 = STBT1 capsule
 STBT2 = STBT2 capsule
 STKZ = STKZ capsule
 WM = WM capsule
 WSF = WSF capsule

Media

SPSHR = Symmetric PES Membrane
 DN66PC = Positively Charged Nylon
 DN66T = Hydrophilic Nylon 66 membrane
 APSB = Asymmetric PES Membrane
 DPSHSL = Double-Layer PES Membrane
 LHPVNDR = PVDF Membrane
 LHPVHBR = Charged PVDF Membrane
 LPV = Hydrophobic PVDF
 DLHPVNDR = Double-layer PVDF Membrane
 DLHPVHBR = Charged Double-layer PVDF Membrane
 LHPF = Hydrophilic PTFE Membrane
 GPF = Hydrophobic PTFE Membrane
 LPF = Hydrophobic PTFE Membrane
 APP = Absolute-Rated Polypropylene
 HPP = Nominal-Rated Polypropylene
 PFSA2 = Multi-Layer Polypropylene
 LGFP = Glass Fiber (for Liquid)
 GGFP = Glass Fiber (for Gas)
 DN66PC = Positively Charged Nylon

Removal Rating

DN66PC
(Positively Charged Nylon):
 0022 = 0.2 µm
 2222 = 0.22 µm + 0.22 µm
 4522 = 0.45 µm + 0.22 µm

DN66T
(Double-Layer Nylon 66):
 1010 = 0.1 µm + 0.1 µm
 2222 = 0.22 µm + 0.22 µm
 4522 = 0.45 µm + 0.22 µm
 1045 = 1.0 µm + 0.45 µm

SPSHR
(Symmetric PES Membrane):
 0022 = 0.22 µm
 0045 = 0.45 µm

APSB (Asymmetric PES):
 0022 = 0.22 µm
 0045 = 0.45 µm
 0065 = 0.65 µm
 0080 = 0.80 µm
 0120 = 1.2 µm

DPSHSL
(Asymmetric/Symmetric PES):
 2210 = 0.22 µm + 0.1 µm
 2222 = 0.22 µm + 0.22 µm
 4522 = 0.45 µm + 0.22 µm
 6522 = 0.65 µm + 0.22 µm
 4510 = 0.45 µm + 0.1 µm
 6510 = 0.65 µm + 0.1 µm
 6545 = 0.65 µm + 0.45 µm
 1045 = 1.0 µm + 0.45 µm

DLHPVNDR
(Double-Layer Hydrophilic PVDF):
 2210 = 0.22 µm + 0.1 µm
 2222 = 0.22 µm + 0.22 µm
 4522 = 0.45 µm + 0.22 µm
 6522 = 0.65 µm + 0.22 µm
 4510 = 0.45 µm + 0.1 µm
 6510 = 0.65 µm + 0.1 µm
 6545 = 0.65 µm + 0.45 µm
 1045 = 1.0 µm + 0.45 µm

DLHPVHBR
(Dual-Layer Charged PVDF):
 2222 = 0.22 µm + 0.22 µm
 4522 = 0.45 µm + 0.22 µm
 6545 = 0.65 µm + 0.45 µm

LHPVNDR
(Hydrophilic PVDF):
 0010 = 0.1 µm
 0022 = 0.22 µm
 0045 = 0.45 µm
 0065 = 0.65 µm
 0100 = 1.0 µm

P

Nominal Length*

05 = 5"
 08 = 8"
 10 = 10"
 20 = 20"
 30 = 30"

*Length only applicable to WSF Capsule Filters

LPV
(Hydrophobic PVDF):
 0022 = 0.22 µm

LHPVHBR
(Hydrophilic Zeta PVDF):
 0010 = 0.10 µm
 0022 = 0.22 µm
 0045 = 0.45 µm
 0065 = 0.65 µm

LHPF (Hydrophilic PTFE):
 0022 = 0.22 µm
 0045 = 0.45 µm
 4522 = 0.45 µm + 0.22 µm
 4545 = 0.45 µm + 0.45 µm
 0100 = 1.0 µm

GPF
(Hydrophobic PTFE):
 0010 = 0.1 µm
 0022 = 0.22 µm

LPF (Hydrophobic PTFE):
 0005 = 0.05 µm
 0010 = 0.1 µm
 0022 = 0.22 µm
 0045 = 0.45 µm
 0100 = 1.0 µm
 0300 = 3.0 µm
 0500 = 5.0 µm

APP
(Absolute Rated PP Meltblown):
 0020 = 0.2 µm
 0030 = 0.3 µm
 0050 = 0.5 µm
 0065 = 0.65 µm
 0080 = 0.8 µm
 0100 = 1.0 µm
 0300 = 3.0 µm
 0400 = 4.0 µm
 0500 = 5.0 µm
 0600 = 6.0 µm
 0700 = 7.0 µm
 1000 = 10 µm
 2000 = 20 µm

HPP
(Nominal Rated PP Microfiber):
 0020 = 0.2 µm
 0045 = 0.45 µm
 0100 = 1.0 µm
 0300 = 3.0 µm
 0500 = 5.0 µm
 1000 = 10 µm
 2000 = 20 µm

PFSA2
(Multi-Layer PP Fiber):
 0020 = 0.2 µm
 0030 = 0.3 µm
 0050 = 0.5 µm
 0060 = 0.6 µm
 0120 = 1.2 µm
 0150 = 1.5 µm
 0200 = 2.0 µm
 0500 = 5.0 µm
 1000 = 10 µm
 2000 = 20 µm
 4000 = 40 µm
 5000 = 50 µm
 7000 = 70 µm
 9000 = 90 µm
 15000 = 150 µm

LGFP (Liquid) & GGFP (Gas):
 0010 = 0.1 µm
 0020 = 0.2 µm
 0025 = 0.25 µm
 0045 = 0.45 µm
 0080 = 0.8 µm
 0100 = 1.0 µm
 0300 = 3.0 µm
 0500 = 5.0 µm
 0600 = 6.0 µm
 5030 = 5.0 µm + 3.0 µm



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