

CLARICAP® & ROHEAP® CSD FILTERS

DURABLE, HIGH-PURITY FILTRATION

The Claricap® and Roheap® Filter Series use a composite material composed of high purity lignocellulose and inorganic filter aid agent. Its inner three-dimensional structure allows it to be a depth filter while providing excellent filtration efficiency, high contaminant holding capacity and longer lifetime.

The Claricap and Roheap CSD Filter Series combines an assortment of filter disks in one filter unit for easy installation. The edges of each filter disc are sealed through an injection molding process which ensures the integrity of the entire filter. This structure provides excellent stability against filter damage from long-term use.

All raw materials are tested by strict quality control procedures to ensure the filter quality and performance capabilities.

Excellent Retention Efficiency

As an inorganic filter aid, the naturally porous structure of the diatomite results in good adsorption and an increase in permeability. There is a small amount of synthetic resin in the filter paper which improves the wet strength of the paper, and provides a positive charge which adsorbs the negative charges, endotoxin, and other substances.

Filter Use Characteristics

Using a high purity cellulose, reduces the level of ion precipitation and endotoxin making the CSD Series suitable for high purity applications. The filter designs solve many of the problems found in typical disk-style filters such as leakage, heavy use, and high costs.



FEATURE	BENEFIT
Cellulose filtration media with inorganic filter aid	High contaminant holding capacity and longer lifetime High-purity, absorbs negative charges, endotoxin, and other substances
Sealed ends disk filter stacks	High flow, stability against filter damage and layer leak-through Excellent stability for long-term use

BIOLOGICAL SAFETY

Endotoxins	<0.25 EU/ml
Bio-compatibility	Meet the criteria of the USP<88> Biological Reactivity Test for Class VI-121C plastics

APPLICATIONS

- Particle Removal
- Clarification of Fermentation Broth/Cell Cultures
- Filtration of Blood and Blood Products
- Filtration of Enzyme Preparation
- Filtration of Colloids/Viscous Liquids
- Serum and Blood Products

SPECIFICATIONS

	Roheap Cartridge	Claricap Capsule
Filter media	Cellulose, Diatomitic filtered and Ionic wet strength resin	
Cage/Shell	Polypropylene	
Max. Operating Temperature	80°C	
Max. Differential Pressure	0.24 MPa (2.4 bar, 35 psi) at 25°C	0.3 MPa (3.0 bar, 44 psi) at 40°C
Flush	Single Layer: 50 L/m ² Double Layer: 100 L/m ² Flow rate: 10 L/min/m ²	

FLUSH

Endotoxins	<0.25 EU/ml
Biological Compatibility	Meets the requirement of USP<87> in Vitro Cytotoxicity Test. Meets the criteria of the USP <88> Biological Reactivity Test for Class VI-121°C plastics

EXTRACTABLE METAL IONS

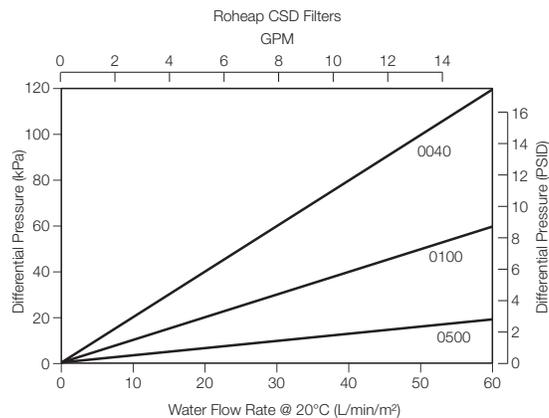
Ions	ppb	Ions	ppb
Mg	5.201	Ni	0.334
Al	34.540	Cu	0.770
Ca	63.447	As	0.532
Cr	0.047	Pb	0.04
Fe	27.287		

CHEMICAL COMPATIBILITY

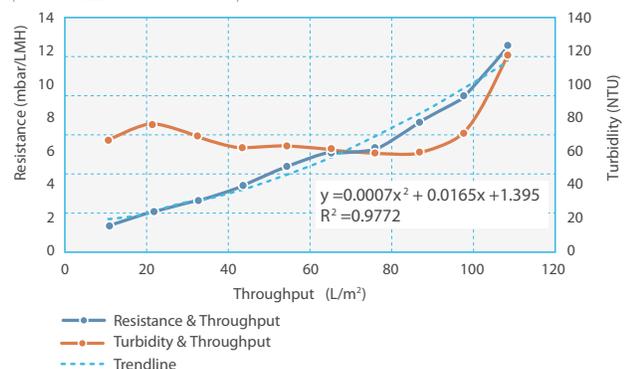
Chemicals		@80°C	
NaOH	2%	✓	X
HCl	5%	✓	X
HNO ₃	5%	✓	X
H ₂ SO ₄	10%	✓	X
Acetic Acid	38%	✓	✓
Citric Acid	10%	✓	✓
Peracetic Acid	0.1%	✓	✓
Butanol	80%	✓	✓
Ethanol	80%	✓	✓

✓ = Recommended X = Not recommended

FLOW CURVES



Schematic diagram of E. coli crushing solution filtration
(before: 1122 NTU after: 65.6 NTU)



FILTRATION AREA

	Specification	Single Layer	Double Layers
	CDFC	23cm ²	23cm ²
	L05SS	207cm ²	115cm ²
	L10SS	414cm ²	230cm ²
	L03TT	225cm ²	90cm ²
	L05TT	405cm ²	180cm ²
	L08TT	585cm ²	270cm ²
	CSCA	0.2m ²	0.15m ²
	CSCC	0.4m ²	0.4m ²
	CSCE	0.5m ²	0.4m ²
	CSCD	0.2m ²	0.15m ²
	CSCB	1.15m ²	0.92m ²
	CSCM	/	1.1m ²
	CSD12" Per Layer CSD16" Per Layer	0.11m ² /0.23m ²	0.11m ² /0.23m ²

CLARICAP D SINGLE-LAYER DEPTH CAPSULE FILTERS ORDERING INFORMATION

EXAMPLE: **CDFCSCSD0040PCP** = Laboratory Capsule, Single-Layer, 0.4 - 0.6 µm, Pharma grade

<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 25px; display: flex; align-items: center; justify-content: center;">S</div>	CSD	<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 25px; display: flex; align-items: center; justify-content: center;">P</div>
Filter Format	Number of Layers			Grade	Application
CDFC = Claricap Lab (23 cm ²) CSCA = Claricap D08 (0.2 m ²) CSCB = Claricap D16 (0.2 m ²) CSCC = Claricap D08 Pro (0.4 m ²) CSCD = Claricap D08 - II (0.2 m ²) CSCE = Claricap D08 Pro - II (0.5 m ²)	S = Single-Layer		Removal Rating: Single-Layer	PC = Positive Charge PE = Negative Charge	P = Pharmaceutical
			Sub-Micron Filtration:	Clarification:	
			H003 = 0.02 - 0.2 µm H004 = 0.04 - 0.2 µm 0004 = 0.04 - 0.2 µm 0020 = 0.2 - 0.4 µm 0040 = 0.4 - 0.6 µm	0300 = 3.0 - 6.0 µm 0400 = 4.0 - 9.0 µm 0500 = 5.0 - 12.0 µm 0600 = 6.0 - 15.0 µm 0700 = 7.0 - 18.0 µm 0800 = 8.0 - 20.0 µm 0900 = 9.0 - 30.0 µm	
			Fine Filtration:		
			0060 = 0.6 - 0.8 µm 0100 = 0.8 - 1.5 µm 0150 = 1.5 - 3.0 µm		



CLARICAP D DOUBLE-LAYER DEPTH FILTER CASSETTE ORDERING INFORMATION

EXAMPLE: **CDFCCSDD04PCP** = Laboratory Cassette, Double-Layer, 0.4 - 0.6 µm, Positive Charge, Pharma grade

<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 25px; display: flex; align-items: center; justify-content: center;">D</div>	CSD	<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 60px; height: 25px; margin: 0 auto;"></div>	<div style="border: 1px solid black; width: 40px; height: 25px; display: flex; align-items: center; justify-content: center;">P</div>
Filter Format	Number of Layers			Grade	Application
CDFC = Claricap Lab (23 cm ²) CSCA = Claricap D08 (0.15 m ²) CSCB = Claricap D16 (0.92 m ²) CSCC = Claricap D08 Pro (0.4 m ²) CSCD = Claricap D08 - II (0.15 m ²) CSCE = Claricap D08 Pro - II (0.4 m ²) CSCM = Claricap M11 (1.1 m ²)	D = Double-Layer		Removal Rating: Double Layer - Prefilter & Final Filter	PC = Positive Charge PE = Negative Charge	P = Pharmaceutical
			Sub-Micron Filtration:	Clarification:	
			H2 = 0.01 - 0.2 µm H0 = 0.02 - 0.2 µm (Final Filter) HP = 0.02 - 0.2 µm (Pre Filter) 01 = 0.04 - 0.2 µm S8 = 0.1 - 0.2 µm 02 = 0.2 - 0.4 µm 04 = 0.4 - 0.6 µm	30 = 3.0 - 6.0 µm 40 = 4.0 - 9.0 µm 50 = 5.0 - 12.0 µm 60 = 6.0 - 15.0 µm 70 = 7.0 - 18.0 µm 72 = 7.0 - 30.0 µm 80 = 8.0 - 20.0 µm	
			Fine Filtration:		
			06 = 0.6 - 0.8 µm 10 = 0.8 - 1.5 µm 15 = 1.5 - 3.0 µm		



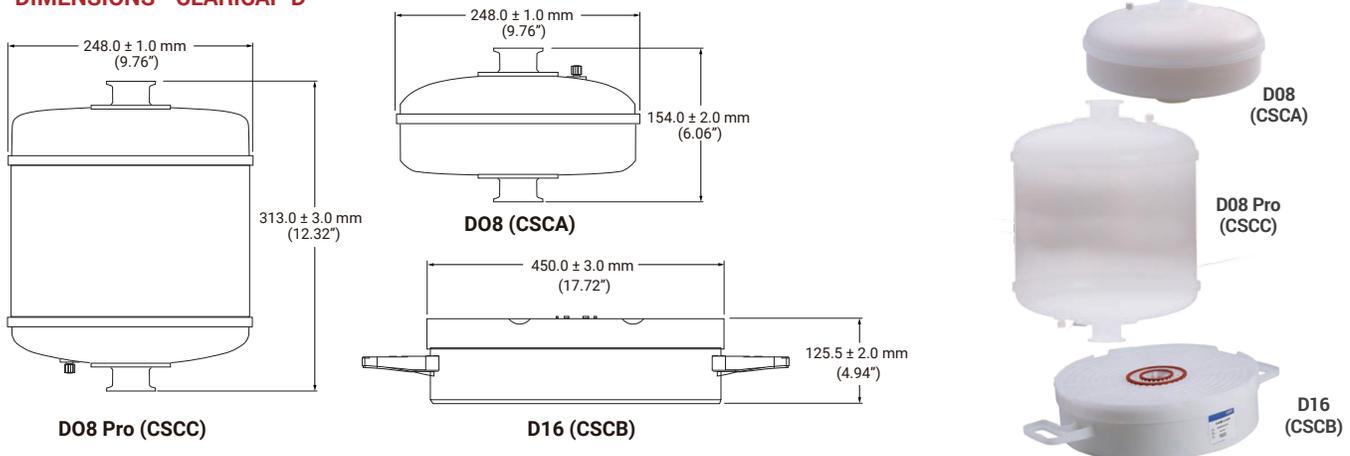
01

02

= 0.04 - 0.4 µm

Final Filter
Pre Filter

DIMENSIONS - CLARICAP D



D08 Pro (CSCC): 248.0 ± 1.0 mm (9.76") diameter, 313.0 ± 3.0 mm (12.32") height.

D08 (CSCA): 248.0 ± 1.0 mm (9.76") diameter, 154.0 ± 2.0 mm (6.06") height.

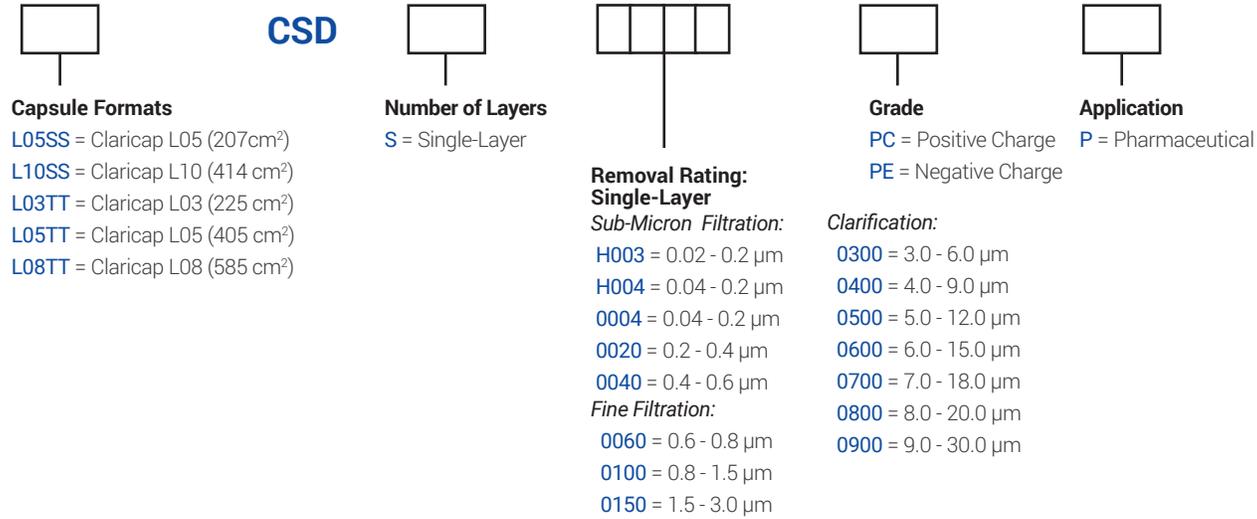
D16 (CSCB): 450.0 ± 3.0 mm (17.72") diameter, 125.5 ± 2.0 mm (4.94") height.

D08 (CSCA) and **D08 Pro (CSCC)** are shown in photographs on the right.

D16 (CSCB) is shown in a photograph at the bottom right.

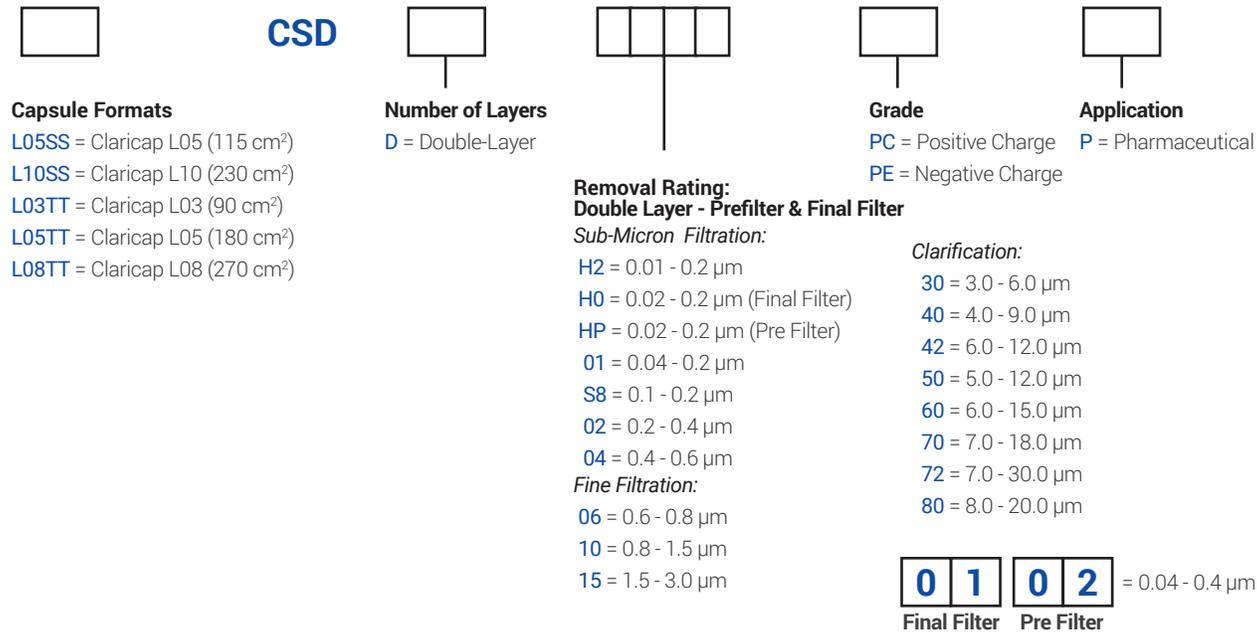
CLARICAP L INLINE SINGLE-LAYER DEPTH CAPSULE FILTERS - ORDERING INFORMATION

EXAMPLE: **L10SSCSDS0004PCP** = Inline Claricap, 10", 1.5" Tri-Clamp I/O, single-layer media, 0.04–0.6 µm, high removal rating, positive charge, pharma grade

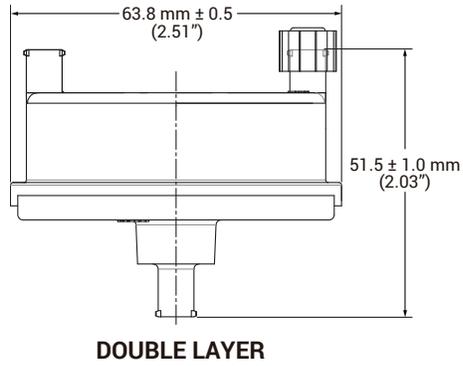
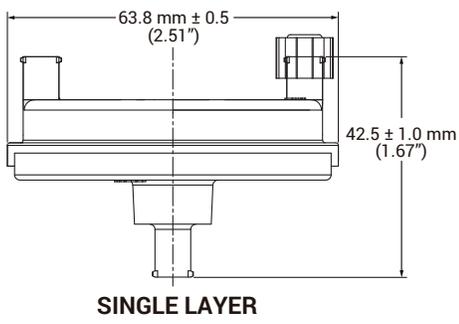


CLARICAP L INLINE DOUBLE-LAYER DEPTH CAPSULE FILTERS - ORDERING INFORMATION

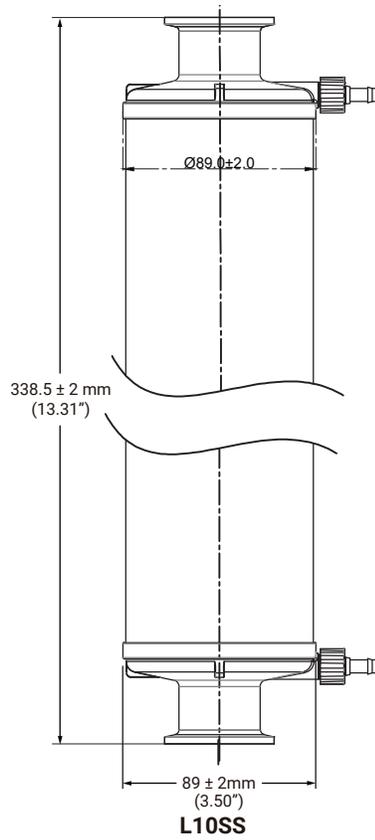
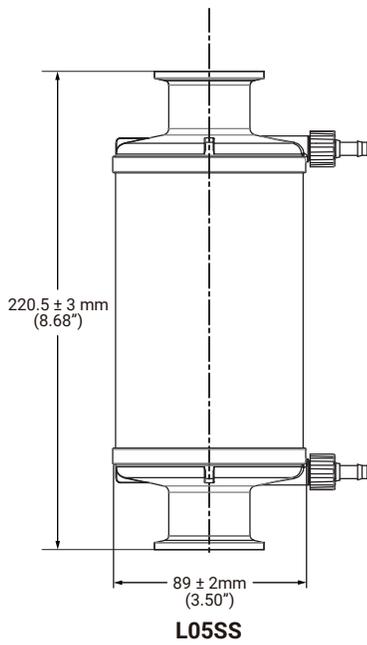
EXAMPLE: **L10SSCDD04PCP** = Inline Claricap, 10", 1.5" Tri-Clamp I/O, double-layer media, 0.04–0.6 µm, high removal rating, positive charge, pharma grade



DIMENSIONS - CLARICAP CAPSULE



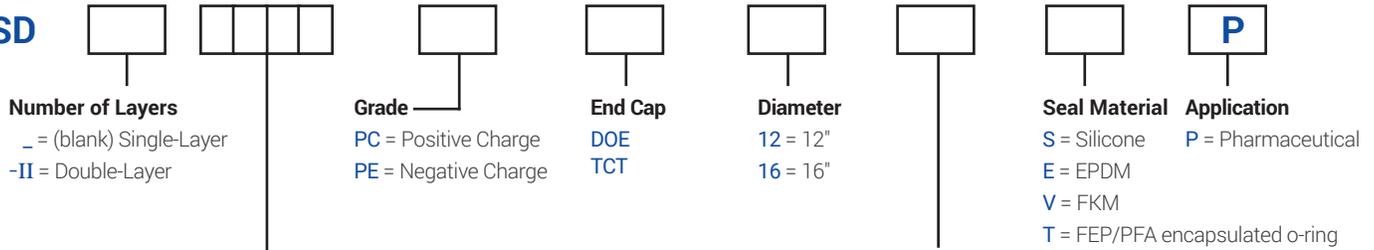
DIMENSIONS - CLARICAP L



ROHEAP ORDERING INFORMATION

EXAMPLE: **CSDS0040PCDOE12QEP** = Single layer media, 0.4 - 0.6 µm, Pharma grade, double open end, 12", 11 lenses, with EPDM gaskets, Pharmaceutical application

CSD



Removal Rating: Single-Layer

Sub-Micron Filtration:

H003 = 0.02 - 0.2 µm
 H004 = 0.04 - 0.2 µm
 0004 = 0.04 - 0.2 µm
 0020 = 0.2 - 0.4 µm
 0040 = 0.4 - 0.6 µm
 RELP = 0.5 - 0.8 µm

Fine Filtration:

0060 = 0.6 - 0.8 µm
 0100 = 0.8 - 1.5 µm
 0150 = 1.5 - 3.0 µm

Clarification:

0300 = 3.0 - 6.0 µm
 0400 = 4.0 - 9.0 µm
 0500 = 5.0 - 12.0 µm
 0600 = 6.0 - 15.0 µm
 0700 = 7.0 - 18.0 µm
 0800 = 8.0 - 20.0 µm
 0900 = 9.0 - 20.0 µm

Removal Rating: Double Layer Prefilter & Final Filter

Sub-Micron Filtration:

H0 = 0.02 - 0.2 µm (Final Filter)
 HP = 0.02 - 0.2 µm (Pre Filter)
 01 = 0.04 - 0.2 µm
 02 = 0.2 - 0.4 µm
 04 = 0.4 - 0.6 µm

Fine Filtration:

06 = 0.6 - 0.8 µm
 10 = 0.8 - 1.5 µm
 15 = 1.5 - 3.0 µm

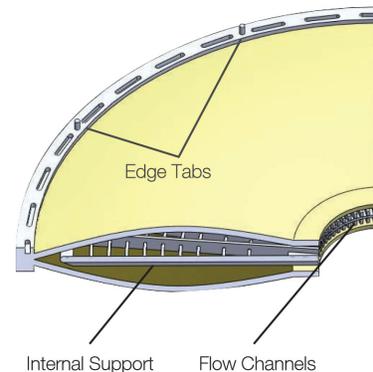
Clarification:

30 = 3.0 - 6.0 µm
 40 = 4.0 - 9.0 µm
 50 = 5.0 - 12.0 µm
 60 = 6.0 - 15.0 µm
 70 = 7.0 - 18.0 µm
 72 = 7.0 - 30.0 µm
 80 = 8.0 - 20.0 µm

01 02 = 0.04 - 0.4 µm
 Final Filter Pre Filter

Number of Lenses

A = 1 Lense (only for double-layer media)
 W = 2 Lenses
 Y = 3 Lenses
 G = 4 Lenses
 B = 5 Lenses
 H = 8 Lenses
 N = 9 Lenses
 X = 10 Lenses
 Q = 11 Lenses (only for single-layer media)
 S = 7 Lenses (only for single-layer media)
 T = 12 Lenses (only for single-layer media)
 E = 14 Lenses (only for single-layer media)
 F = 15 Lenses (only for single-layer media)
 D = 16 Lenses (only for single-layer media)



BANNER INDUSTRIES IS THE EXCLUSIVE DISTRIBUTOR FOR COBETTER PRODUCTS IN THE USA
 Visit www.bannerindustries.com and select the Contact Us link to find the location nearest you. The Banner Industries of N.E., Inc. Terms and Conditions of Sale apply and are fully and expressly incorporated herein by reference and constitute a part of any contract for the purchase of the products described herein.

www.bannerindustries.com | Technical Sales: filtration@bannerindustries.com

CBBPP1103 Rev. 07272023

Copyright © 2023 Banner Industries, Inc. All rights reserved.
 Roheap® is a registered trademark of Cobetter Filtration Equipment Co., Ltd.