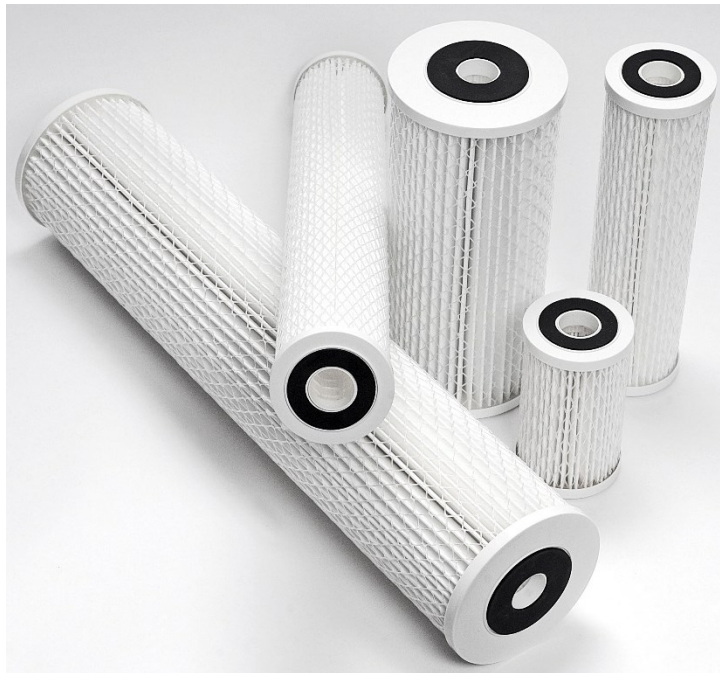


NanoCLEAR Standard Series

Electropositive Pleated Filters

CLEAR Solutions' NanoCLEAR series pleated filter cartridge features a thermally bonded blend of microglass fibers & cellulose infused with *nanoolumina* fibers in a non-woven matrix that creates an electropositive depth filter media. When assembled into a pleated cartridge, NanoCLEAR offers a unique combination of efficiency, capacity, flow rate & low pressure drop at levels unmatched in today's filtration marketplace. In addition, all NanoCLEAR filter cartridges are assembled using only FDA-compliant materials.

This cartridge has been designed to satisfy the most difficult requirements in water treatment. By using the scientific principle of electropositive attraction/ capture, NanoCLEAR NASA-derived technology leads to a rapid and highly efficient adsorption of virtually all particle sizes. NanoCLEAR media has a high capacity for particles as large as tens of microns or as small as a few nanometers. Each NanoCLEAR filter cartridge exhibits a rating of 0.2μ - a rating typically associated with microporous membranes. Yet NanoCLEAR flow rates are hundreds of times greater than such membranes.



Features

- Effective at high pH and in the presence of salt
- Pleated construction yields high flow rates
- Available in all standard end configurations
- Provides optical clarification to fluids
- Manufactured with strict quality control
- All components are manufactured with materials that meet FDA requirements 21CFR177.1520 for direct food contact applications.

Markets

- Food, Beverage & Bottled Water
- Pharmaceutical & Biomedical
- Cosmetics & Personal Care
- MicroElectronics
- Power Generation
- Potable Water (POE, POU, Municipal, Personal)

Retention Characteristics

- Silt Density Index (SDI) < 0.5
- >99.99% Efficiency at 0.2 microns (latex spheres)
- >4 LRV Cyst Retention
- >5 LRV *Klebsiella terrigena* Retention
- <0.01 NTU until Terminal ΔP : 35 psid (2.4 bar)
- Dirt Holding Capacity: 82 g/ft²

Applications

- Primary Filtration in lieu of microporous membranes
- Make Up Water (particulate, microbial control)
- Polishing Filters (carbon fines, emulsified oil removal)
- RO Prefiltration (SDI reduction)
- Process Water (turbidity, particulate, colloidal suspensions)
- Waste Water (biologicals, proteins, dyes)
- Cooling Towers, Chill Water Loops (iron removal)

Product Specifications

Part No.		NC-SS-5	NC-SS-10	NC-SS-20	NC-SS-30	NC-SS-40	NC-SL-10	NC-SL-20	NC-SL-40
Surface Area	ft ² (m ²)	1.4 0.13	3.4 0.13	7.1 0.66	10.6 0.99	14.1 1.31	8.3 0.77	17.0 1.58	35.0 3.25
Micron Rating	μ	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Dirt Holding Capacity	grams	114.4	280.3	583.4	875.2	1161.2	683.5	1401.4	2882.9
Dimensions (OD ^A x Length)	in (cm)	2.8 x 4.85 7.1 x 12.32	2.8 x 9.75 7.1 x 24.77	2.8 x 20 7.1 x 50.8	2.8 x 30 7 x 76.2	2.8 x 40 7 x 101.6	4.5 x 9.75 11.43 x 24.77	4.5 x 20 11.43 x 50.8	4.5 x 40 11.43 x 101.6
Suggested Flow Rate	gpm (lpm)	2 7.5	4 15	8 30	12 45	16 60	10 38	20 76	40 152
Maximum Flow Rate	gpm (lpm)	5 19	10 38	20 76	30 114	40 151	25 95	50 133	100 380

A: OD = Outer Diameter

Competitive Comparison — Turbidity and Silt Density Index (SDI₃₀) - 10" cartridges (except where noted)

Manufacturer	Type	Flow Rate (gpm)	Type of Water	Turbidity In	Turbidity Out	SDI ₃₀ ^A
NanoCLEAR	NC-SS-10	4	A2 dust ^B in RO water	252.00	<0.01	0.2 ± 0.3 ^C
			Municipal Tap water	0.87	<0.01	0.5 ± 0.1 ^D
A	1μ absolute	4	A2 dust ^B in RO water	239.00	60.00	ND ^E
			Municipal Tap water	0.54	0.10	4.4 ± 0.2 ^F
	0.35μ absolute	4	A2 dust ^B in RO water	239.00	55.00	ND
			Municipal Tap water	0.57	0.14	4.6 ± 0.2 ^F
B	1μ nominal (20")	4	Municipal Tap water	1.3 ± 0.1 ^G	0.4 ± 0.1 ^H	N/A
	1μ absolute	4	A2 dust ^B in RO water	243.00	23.00	ND
		4	Municipal Tap water	1.3 ± 0.3 ^G	<0.01 ^H	5.5 ± 0.2 ^F
	5μ nominal (20")	4	Municipal Tap water	1.5 ± 0.7 ^G	1.1 ± 0.4 ^H	ND

A: Silt Density Index (SDI₃₀)

B: SO121030-1 A2 Fine Test Dust

C: Average of 6 measurements

D: Average of 4 measurements

E: Not Tested—Turbidity of filtered water too high

F: Average of 3 measurements

G: Average over 3-hour test

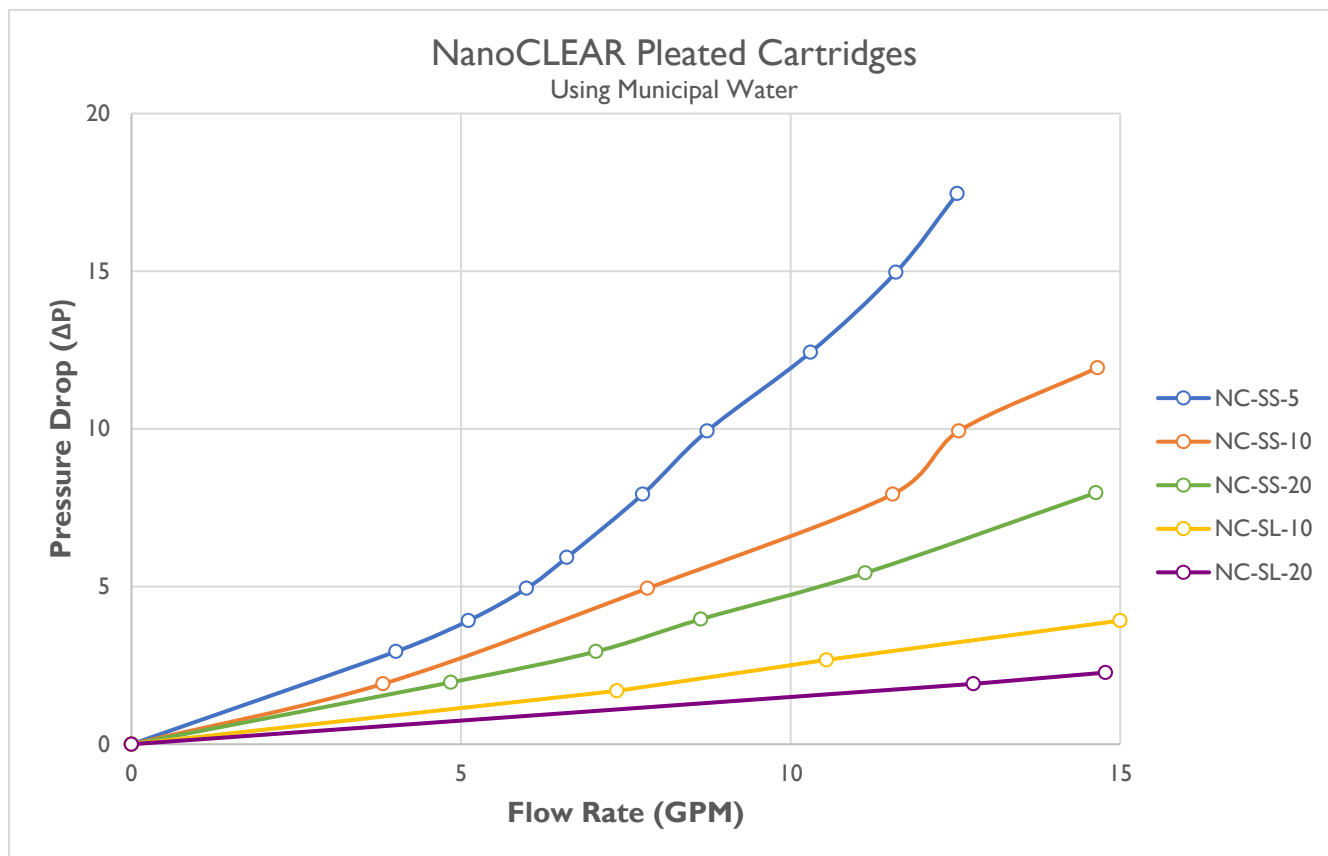
H: During first 30 minutes of run

Materials of Construction

Media: NanoCLEAR Media
Support: Polypropylene, Hot Melt
O-rings/Gaskets: Neoprene

Operating Conditions

Temperature: 39-180°F (4-82°C)
pH Range: 5 to 10
Terminal Pressure Drop: 35 psi (2.4 bar)
Maximum Salinity: 200,000 ppm



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