LFX Series

LFX™ Series – Liquid Filtration Excellence Engineered for Results

LFX-CSW™ String-Wound Depth Filter Cartridges Technical Overview

FiltraCore Asia's **LFX-CSW™ String-Wound Depth Filter Cartridges** are engineered for **bulk particulate control and pre-treatment** in industrial water and process streams. A controlled **helical, diamond-pattern winding** forms a **graded-porosity depth matrix** with high void volume and tortuous flow paths, distributing solids throughout the media thickness. This architecture delays surface blinding, sustains a **low, stable ΔP**, and provides **high dirt-holding** across the service interval. Flow is **outside-to-inside** to maximise contaminant accommodation and minimise fibre migration, making LFX-CSW™ a dependable front-end barrier ahead of pleated cartridges and membranes.

The construction portfolio is designed for fit-for-purpose deployment across site chemistries and temperatures. The **standard build** uses **polypropylene yarn on a polypropylene core** for broad chemical compatibility in plant utilities and process water. For higher-temperature or higher-viscosity duties, **cotton** or **glass-fibre** yarn wound on **304/316 stainless-steel cores** increases rigidity and thermal headroom whilst preserving depth-capture behaviour. All builds are **binder-free** and inherently **self-supporting** under forward differential pressure, resisting channel formation and fibre migration.

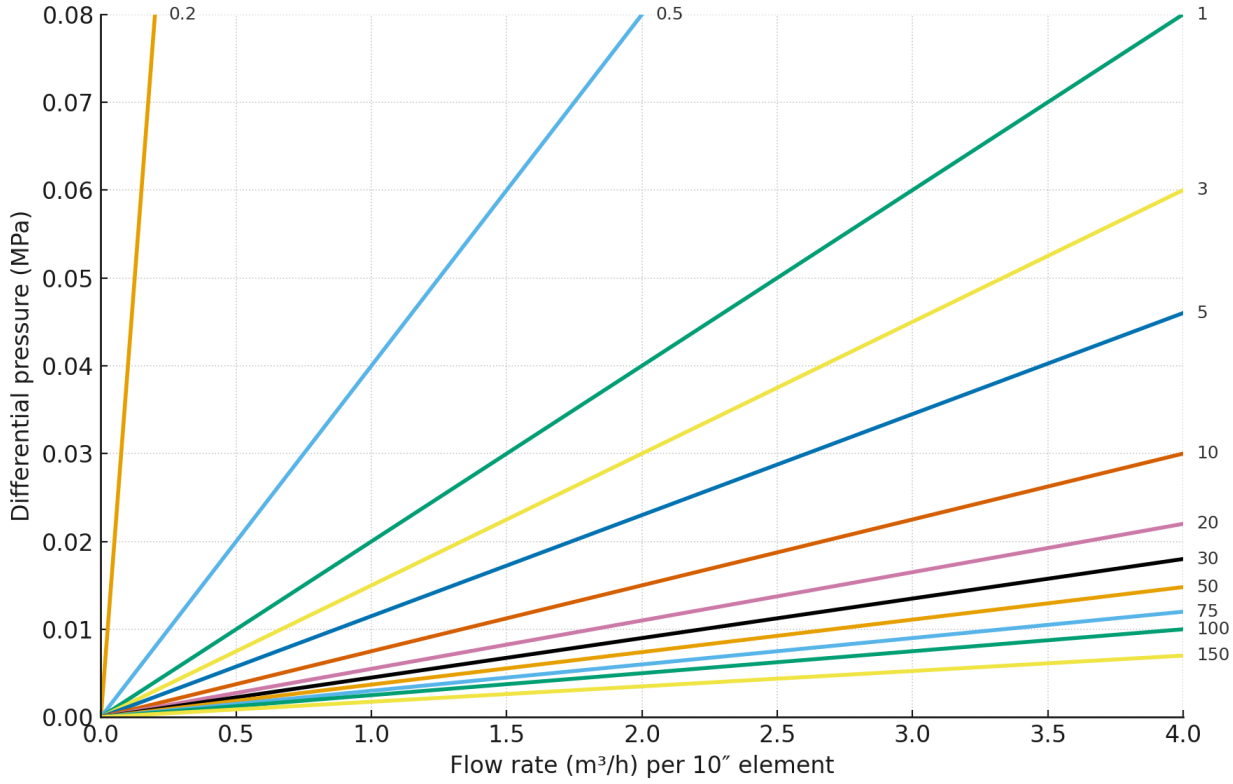
Rating coverage aligns with mainstream wound-depth practice so trains can be staged without changing housings. **Nominal 0.5–150 µm** is available (with **core SKUs typically 1–100 µm** for most pretreatment duties). Form factors are industry-standard **2.5" OD** in **10", 20", 30", and 40"** lengths with **DOE** ends for universal housings; **SOE 222/226 (flat/fin)** options are available for sealed housings requiring positive engagement. **PP/PP** builds are typically applied to **~80 °C** in water service; temperature capability increases with **stainless-steel cores** and alternative yarns, always governed by the **lowest-rated component** (cartridge, elastomer, housing).

Depth Filtration. High Dirt-Holding. Stable, Low ΔP.

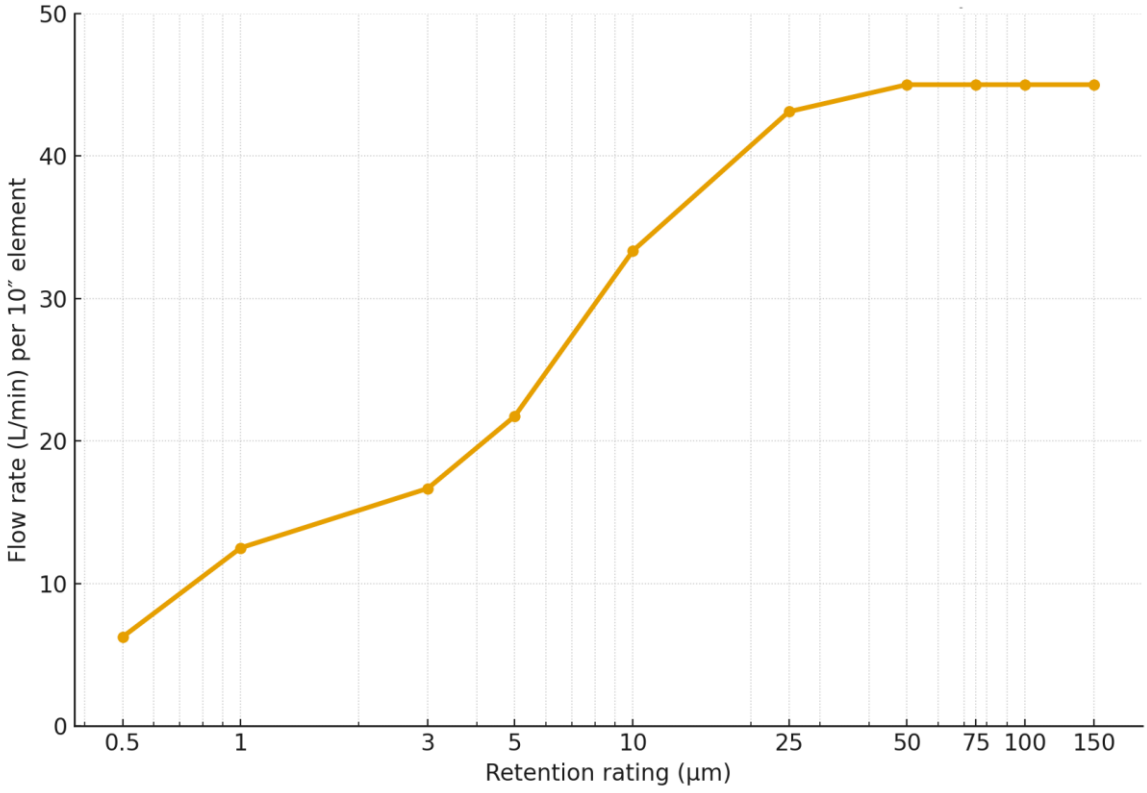
Technical Specifications

- **Filter media:** Polypropylene (standard); Cotton; Glass-fibre. Binder-free winding; outside-to-inside flow
- **Core materials:** Polypropylene (standard). 304 or 316 stainless steel available (recommended for cotton/glass-fibre or elevated-temperature duties)
- **Nominal retention ratings:** 0.5, 1, 3, 5, 10, 25, 50, 75, 100, 125, 150 µm
- **Nominal lengths:** 5″, 9.75″, 10″, 19.5″, 20″, 29.25″, 30″, 40″ (127, 248, 254, 495, 508, 743, 762, 1016 mm)
- **Outside diameter:** 2.4–2.5″ (62–63 mm)
- **Inside diameter:** 1.1″ (28 mm)
- **Dimensional tolerances (typical):** Length ±1 % (or ±3 mm, whichever larger); OD ±1 mm; ID ±1 mm
- **End styles / seals:** DOE (double open end) standard; SOE 222/Flat, 222/Fin, 226/Flat, 226/Fin available. Elastomers: EPDM (standard), Silicone, NBR (Buna-N), FKM (Viton®) on request
- **Operating temperature (by build):** Polypropylene to 80 °C (water service, forward flow). Cotton with stainless-steel core typically to ~160 °C; glass-fibre to ~200 °C in liquid service. Always apply the lowest-rated component (cartridge, elastomer, housing); de-rate temperature with increasing ΔP
- **pH / chemistry envelope (guidance):** Polypropylene pH 1–14 in aqueous service; Cotton not recommended for strong oxidisers or prolonged high-alkali exposure; Glass-fibre suitable for wider temperature and pH ranges – verify solvent/oxidiser levels case-by-case
- **Maximum differential pressure (per element):** 2.5 bar at 30 °C (forward, outside→inside). Reverse differential pressure not permitted for wound-depth elements
- **Recommended change-out differential pressure:** 2.4 bar per element (or per process criticality)
- **Definition of nominal rating / test method:** Nominal retention is defined by initial single-pass efficiency using ISO 12103-1 test dust (A2 Fine for ≤5 µm; A4 Coarse for ≥10 µm) at 25 °C; curves are typical and not an absolute retention claim. For integrity-testable or absolute retention, select LFX-CPLEAT-PP™ or sterile-grade membranes
- **Chemical compatibility:** Broad compatibility with aqueous acids/alkalis and utility waters for polypropylene builds; verify compatibility for solvents/oxidisers and select elastomers accordingly
- **Cleanliness / traceability:** Low-extractables design; each element labelled with lot/traceability code
- **Compliance:** Food-contact compliant variants available (FDA 21 CFR; EU 1935/2004 & 10/2011). Manufactured under ISO 9001 quality systems
- **Related formats:** 4.5″ OD “Big Blue” wound elements are specified under LFX-CBIG-SW™

Typical Pressure Drop vs Flow[1] — LFX-CSW™ (10″ element, clean water, 25 °C)



Recommended Flow Rate[2] – LFX-CSW™ (10” element, clean water, ΔP 0.15 bar)



[1] Clean-water values at 25 °C for a single 10" cartridge. Lines are linear fits (ΔP ≈ m·Q) per nominal grade; values exclude housing/piping losses. ΔP increases approximately in proportion to fluid viscosity (cP) at operating temperature. For 20"/30"/40" elements, per-element ΔP ≈ ½ / ⅓ / ¼ at the same per-element flow. Size by total system ΔP and plan change-out near ~1.4 bar per element (or per process criticality). Do not exceed the lowest-rated component (cartridge, elastomer, housing).

[2] Water at 25 °C, ΔP = 0.15 bar per single 10" element. Values are per-element recommendations for sizing and reflect typical string-wound depth performance; actual results vary with viscosity, temperature, solids loading and distribution, and housing design. For 20"/30"/40" elements, per-housing flow scales approximately 2×/3×/4× at the same per-element ΔP. Add housing and piping losses to obtain total system ΔP. For fluids with viscosity ≠ water, multiply ΔP by viscosity (cP) at operating temperature. Do not exceed the lowest-rated component (cartridge, elastomer, housing).

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