PolyPro® XL Filter Cartridges

with APT™ construction for extra long life

Polypropylene pleated graded-density filter cartridges featuring APT Construction for Extended Filter Lifetime

CUNO's PolyPro XL filter cartridge represents a major advance in pleated polypropylene filter design and performance. Advanced Pleat Technology (APT) construction* combines:

- Up to 50% more filter media (surface area) than competitive filters
- Graded-density media for optimum contaminant holding
- New cartridge design for increased flow and reduced pressure drop

The result is a filter cartridge that lasts longer, performs better, and saves money.

The APT Advantage

Surface area dictates just how long a filter will last and how it will perform. However, increasing surface area without considering the flow path between the media's pleats could result in flow restrictions and early media blinding. To achieve the optimum between surface area and performance, CUNO has designed PolyPro XL so that the pleating process and media support materials work together to provide enhanced flow characteristics and longer service life.

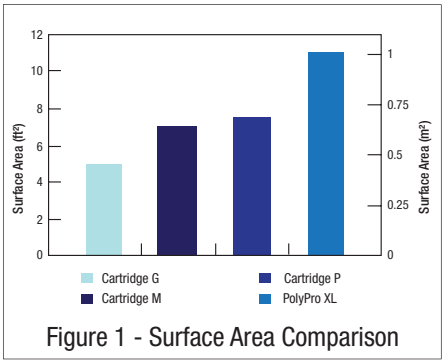


Figure 1 - Surface Area Comparison

Features and benefits

Advanced Pleat Technology construction for extremely high surface area
- Higher product throughputs for extraordinarily long service life
- Lower total filtration operating costs
- Lower pressure drops for higher flow rates

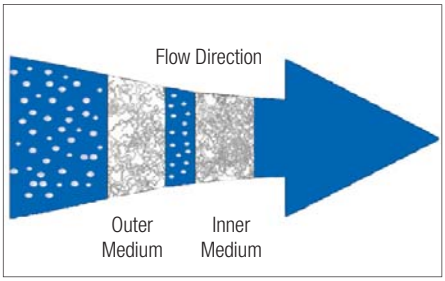
Absolute-rated filter performance
- Consistent and reproducible contaminant removal
- Higher product quality and yields

Graded-density multi-layer filter media
- Selective entrapment of contaminant throughout the filter media to maximize filter life
- Higher contaminant holding capacity

Polypropylene cartridge components free of adhesives and surfactants
- Very low extractable levels for optimum filtrate purity
- Broad chemical compatibility for most aggressive process applications

100% integrity tested versions available
- Pre-qualification and assurance in critical applications
- Suitable for final filtration in many applications

Robust polypropylene cartridge construction
- Extends service life and compatible with a wide range of solvents and cleaning solutions



Graded-Density - the key to longer life

The PolyPro XL filter's graded-density media structure removes particles sequentially by size - the larger particles by the more open, outer medium and the smaller particles by the tighter, inner medium. The outer medium acts as a prefilter, while the inner provides the absolute removal specified by the cartridge rating. This construction effectively spreads the contaminant through the depth of the filter media resulting in extremely high contaminant capacity with lower pressure drop for longer service life.

Chemical Compatibility

Polypropylene construction provides chemical compatibility in many demanding process fluid applications. Compatibility is influenced by process operating conditions; in critical applications, cartridges should be tested under actual conditions to ensure correct selection.

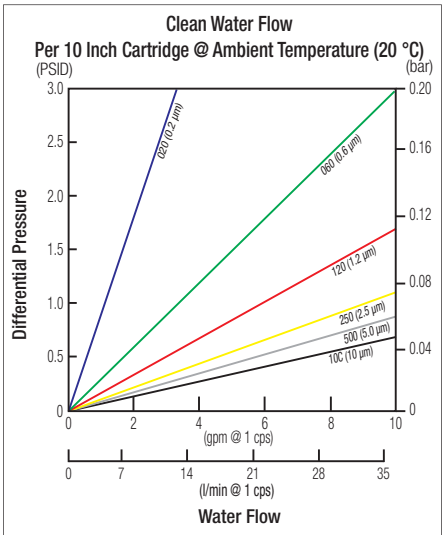


Figure 2 - Flow vs. Differential Pressure

Flow Characteristics and Sizing Options

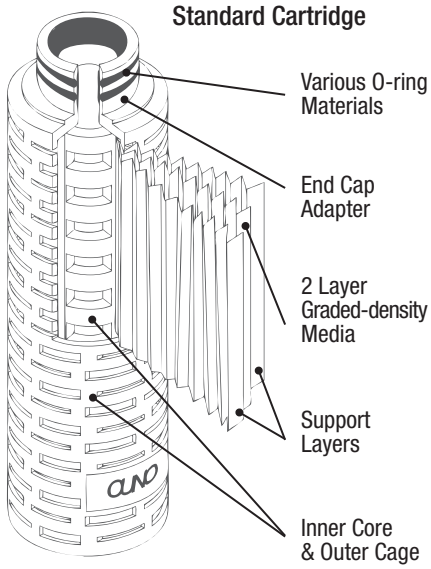
Reduced cartridge change-out frequency

For a given process flow rate, the graded-density structure and maximum filter area decrease filter cartridge change-out frequency by 30 to 50 percent or more depending on the application.

Reduced filter housing costs

For new applications, the low pressure drops of the PolyPro XL filter allow smaller or fewer housings to be specified. Fewer filter cartridges and smaller housings provide lower capital and consumables costs, year after year.

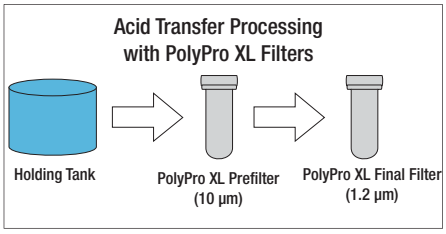
Ideally, filter systems should be sized at an initial differential pressure of 0.5 to 1 psid (0.04 to 0.07 bar). Low flow rates further extend the life of the filter system. In most applications, doubling the filter area (reducing the flow rate per unit area by one-half) results in two and one-half times the throughput.



PolyPro XL Cartridge Specifications	
Materials	
Media	Graded-Density Pleated Polypropylene
Supports	Polypropylene
Core, Cage, End Caps	Polypropylene
Gasket and O-ring Options	Silicone, Fluorocarbon, Ethylene Propylene, Nitrile
Operating Conditions	
Maximum Operating Temperature	60 °C (130 °F) continuous 80 °C (175 °F) short term
Maximum Forward Pressure Differential	4 bar at 25 °C (60 psid at 77 °F)
Maximum Reverse Pressure Differential	4 bar at 25 °C (60 psid at 77 °F)
Cartridge Dimensions	
Media area versions PEG	Grade 060, 100, 120, 250: 0.82 m² (8.8 ft²) Grade 020 : 0.75 m² (8.1 ft²) Grade 10C : 0.51 m² (5.5 ft²) Grade 500 : 0.80 m² (8.6 ft²)
Diameter	7 cm (2.75 inches)
Length	Nominal 10", 20", 30", and 40"

Quality System ISO 9001:2000

Polypro XL filter cartridges are manufactured under an ISO 9001:2000 certified quality system. The quality system ensure that appropriate standards are met or exceeded to provide consistent, high quality products.



The PolyPro XL Filtration Advantage

A recirculating electroless nickel plating bath can be optimised with PolyPro XL filters. For high density memory devices, particle defects can be safely controlled with in-line 0.6 µm filtration. By replacing a 0.6 µm absolute rated competitive cartridge with an equally retentive PolyPro XL filter, the pressure drop can be reduced by one half, providing the flexibility to increase the flow through the bath by a factor of 4. With the PolyPro XL filters, the bath will clean up more efficiently after the high density devices are introduced into the plating solution. PolyPro XL filters effectively remove the contaminating particles while maintaining or increasing process yields. Product throughput in this critical process step can be increased, and filter change-out frequency reduced, a direct result of the 60% surface area increase - only available with the PolyPro XL filter's APT technology.

Serial filtration was employed in this ambient temperature acid transfer, with a 10 µm PolyPro XL prefilter prior to a 1.2 µm PolyPro XL final filter. The low initial pressure drop and graded-density construction of the PolyPro XL filter allowed the process to run for extended periods before filter plugging. This optimised filtration scheme delivered premium quality acid with very low particle counts.

Electronics & Chemicals Applications

Today's electronics manufacturing and chemicals processing demand ever increasing levels of filtration efficiency and filtrate purity. PolyPro XL cartridge filters provide the answer for a broad range of applications.

Pre-reverse osmosis (Pre-RO)

- Pre-RO water filtration requires robust cartridges with long life to protect expensive RO membranes from seasonal fluctuations and process upsets. Low particle count ultrapure water is necessary at multiple point in every defect-sensitive production facility.

Plating and cleaning baths

- Plating and cleaning baths must maintain very low particle counts, despite constant contaminant addition, to provide the highest yields.

Multi-layer board processes

- Complex multi-layer board processes need an economical filter capable of high throughputs and extended lifetimes. Heavy contaminant loads must be handled without premature plugging of the filter.

Fine chemical production

- Fine chemical production demands economical, rigorous filter cartridges with long service life. PolyPro XL filter cartridges are compatible with a wide range of process chemicals.

Durable polypropylene construction provides superior chemical and mechanical compatibility under the most severe service conditions. Proper cartridge selection for individual process conditions sized for low initial pressure drop will ultimately extend cartridge lifetime and compatibility.

Applications SUPPORT - SASS

CUNO's Scientific Applications Support Services (SASS) is staffed by scientists and engineers, with state-of-the-art laboratory facilities. The SASS staff, familiar with a wide range of filtration and separation applications, work closely with the customer to recommend the most effective and economical CUNO filtration systems.

PolyPro XL Filter Cartridge Ordering Guide

Model	Absolute Rating*	Configuration	Nominal Length	End Modification	Gasket/O-ring Material
PEG	**020** : 0.2 µm **060** : 0.6 µm **120** : 1.2 µm **250** : 2.5 µm **500** : 5.0 µm **10C** : 10.0 µm	**B** = Cartridge 2.8" (7.1 cm)	**01** : 10" **02** : 20" **03** : 30" **04** : 40"	**B** - 226 O-ring with spear **C** - 222 O-ring with spear **D** - DOE flat gasket (10") **E** - DOE flat gasket (9 ¾") **F** - 222 O-ring with Flat Cap	**A** - Silicone **B** - Fluorocarbon **C** - EPR **D** - Nitrile **H** - Clear silicone

* Retention ratings determined by modified ASTM STP 975. The 0.2 micron rating has been extrapolated. For more information, contact your CUNO representative.

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