



**GUARDIAN™ ECD UC  
LIQUID FILTERS**

*Advanced, ultra-clean, hydrophilic filtration  
for critical dilute cleaning applications*



# advanced, ultra-clean, hydrophilic filtration

## Overview

Guardian™ ECD UC (Ultra Clean) liquid filters provide advanced filtration for low temperature acids and bases used in wet etch, and clean processes at sub-2x nm technology nodes. Guardian ECD UC is available with a 5 nm retention rating – the best retention available in hydrophilic filtration. Guardian ECD UC also provides consistently good flow rates and ultra-clean performance for low metals, chlorides and particle cleanliness.

The advanced membrane technology provides both sieving and nonsieving retention capabilities. The asymmetric membrane promotes tighter particle retention while maintaining high flow rates. Because the hydrophilic membrane requires no prewetting or flushing, process uptime is increased and the risk of dewetting is prevented.

Available in cartridge and disposable formats, Guardian ECD UC filters meet a range of process requirements, while keeping operational costs to a minimum. Guardian ECD UC filters deliver yield-enabling technology for advanced applications, long filter life and improved process capability.

## Applications

- Weak, acid-based process chemicals such as BOE and DHF
- Weak, basic process chemicals such as dilute SC1, TMAH
- DI water bulk and POU
- Recirculating etch baths and POU single wafer tools
- Bulk chemical delivery and distribution systems

## Features and Benefits

Features	Benefits
5 nm retention rating	<ul style="list-style-type: none"> <li>• Provides advanced filtration for low temperature, critical, dilute, aqueous and low-high pH cleaning applications at sub-2x nm technology nodes                             <ul style="list-style-type: none"> <li>– Improves single-pass retention efficiency</li> <li>– Reduces on-wafer defects</li> <li>– Enables higher yield</li> </ul> </li> </ul>
Advanced membrane technology	<ul style="list-style-type: none"> <li>• Sieving and nonsieving retention mechanisms</li> <li>• Asymmetric membrane ensures tighter particle retention while maintaining high flow rates</li> <li>• Hydrophilic membrane – no prewetting or flushing required                             <ul style="list-style-type: none"> <li>– Increases process uptime</li> <li>– Prevents risk of chemical interactions</li> <li>– Minimizes risk of dewetting (and loss of flow)</li> </ul> </li> </ul>
Ultra-clean filtration	<ul style="list-style-type: none"> <li>• Low metals, low chlorides and improved particle cleanliness</li> <li>• Innovative cleaning process enabling                             <ul style="list-style-type: none"> <li>– Less contamination</li> <li>– Faster system flush up</li> <li>– Extended tool uptime</li> <li>– Higher yield</li> </ul> </li> </ul>
Available in different formats	<ul style="list-style-type: none"> <li>• M-pleat membrane area enables increased flow rates for critical applications</li> <li>• Cartridges support various filter sizes</li> <li>• Disposables require minimal handling which reduces the risk of contamination and chemical exposure</li> </ul>

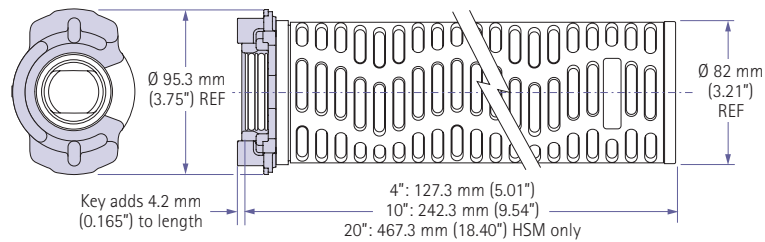
## Specifications

HSM Type	
Materials:	Membrane Supports, sleeve, core, end caps Code 0 double 2-222 o-rings Chem-Line™ II disposables' outer shell Chem-Line I disposables' outer shell
	Hydrophilic polysulfone (PS) Nonwoven high-density polyethylene (HDPE) Encapsulated fluoropolymer (E-FKM) or Kalrez® 6375 Polypropylene and PFA PFA
Retention rating:	5 nm
Membrane surface area:	4": 0.6 m <sup>2</sup> 10": 1.2 m <sup>2</sup> 20": 2.4 m <sup>2</sup>
Maximum operating conditions:	Maximum forward differential pressure
	Maximum reverse pressure
	Maximum operating temperature
	0.34 MPa (3.4 bar; 50 psid) @ 25°C (77°F) 0.21 MPa (2.1 bar; 30 psi) @ 25°C (77°F) 70°C (158°F) at 23 psi

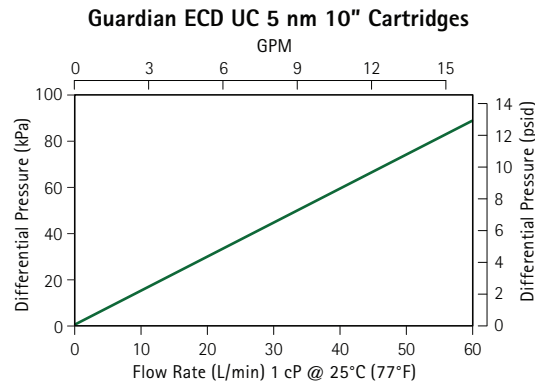
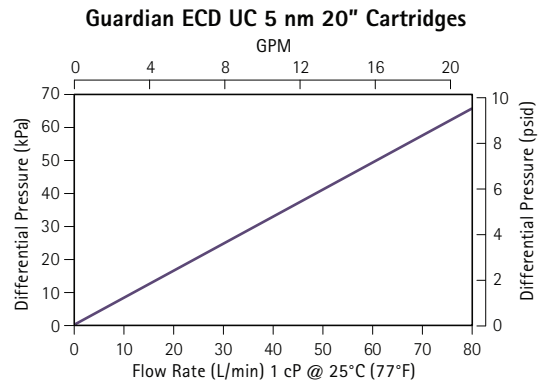
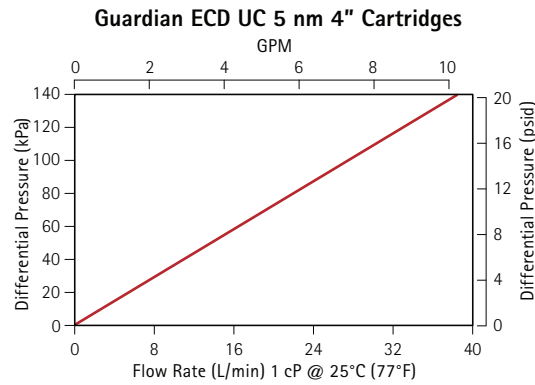
## Guardian ECD UC Cartridge Filters

### Dimensions

#### Guardian ECD UC HSM Cartridge Filters



**Performance Data**



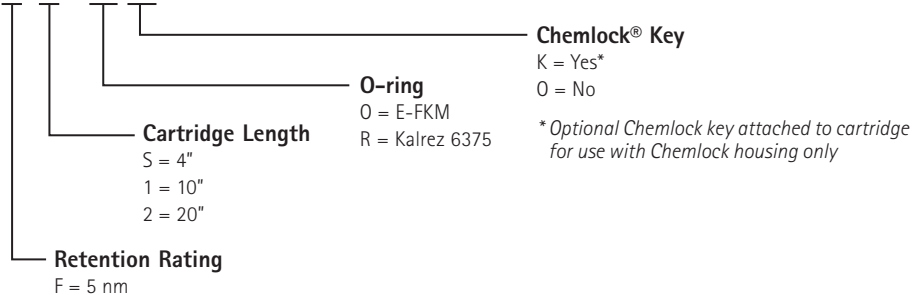
**Ordering Information**

This information serves as a guide. Please contact your local representative to confirm part numbers.

**Guardian ECD UC HSM Cartridge Filters**

**Part Number**

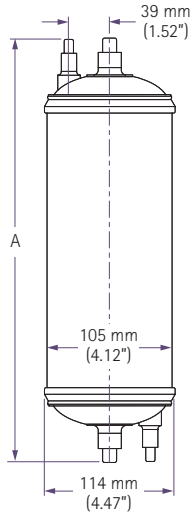
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# Guardian ECD UC Disposable Filters

## Dimensions

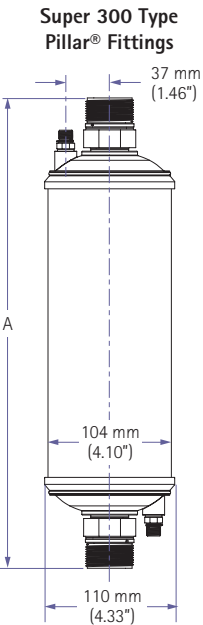
### CHEM-LINE II (PP) DISPOSABLE FILTERS



Dim A		
Inlet/Outlet Size	4" Disposable Filter with Flaretek® Fittings	10" Disposable Filter with Flaretek Fittings
3/8"	237 mm (9.32")	350 mm (13.77")
1/2"	247 mm (9.72")	360 mm (14.17")
3/4"	247 mm (9.72")	360 mm (14.17")
1"	257 mm (10.12")	370 mm (14.57")

Vent/drain all versions: 1/4"

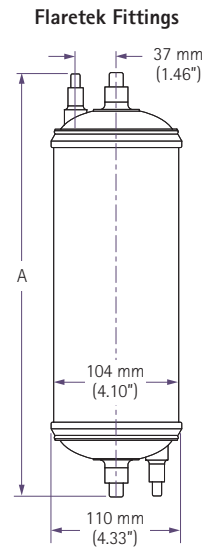
### CHEM-LINE II (PFA) DISPOSABLE FILTERS



I/O Size	10" Filter
1/2"	355 mm (13.96")
3/4"	364 mm (14.31")
1"	397 mm (15.62")

Vent/drain all versions: 1/4"

### CHEM-LINE II (PFA) DISPOSABLE FILTERS

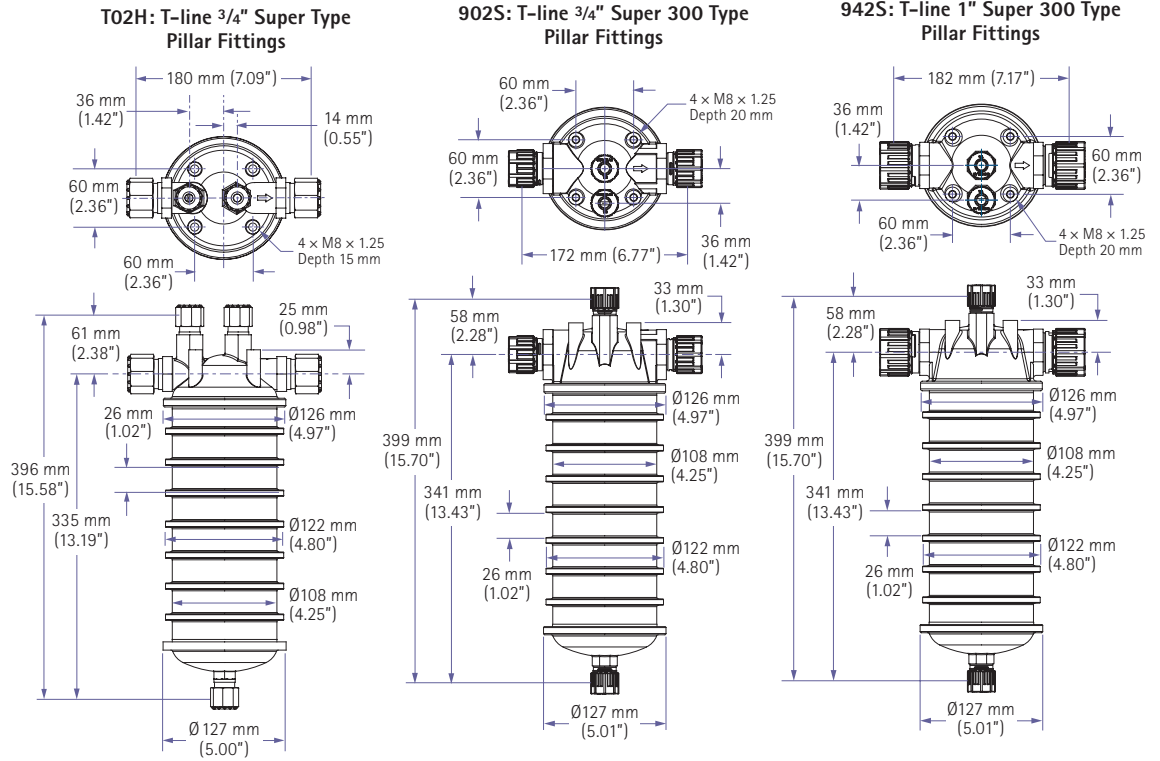


I/O Size	10" Filter
1/2"	370 mm (14.58")
3/4"	373 mm (14.68")
1"	382 mm (15.02")

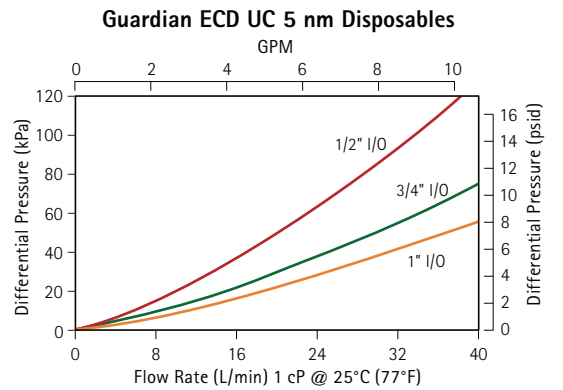
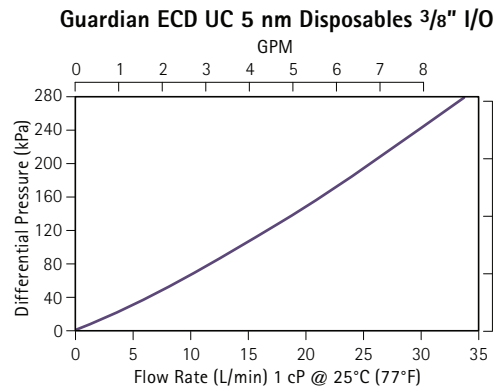
Vent/drain all versions: 1/4"

Dimensions (continued)

CHEM-LINE I (PFA) DISPOSABLE FILTERS



Performance Data

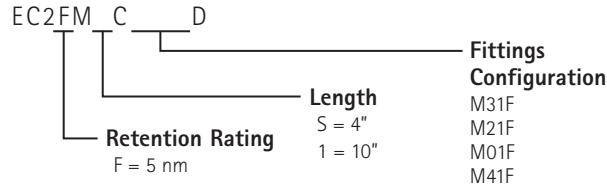


**Ordering Information**

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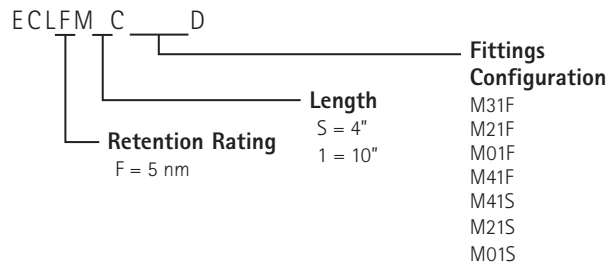
**Guardian ECD UC Chem-line II (PP) Disposable Filters**

**Part Number**



**Guardian ECD UC Chem-line II (PFA) Disposable Filters**

**Part Number**

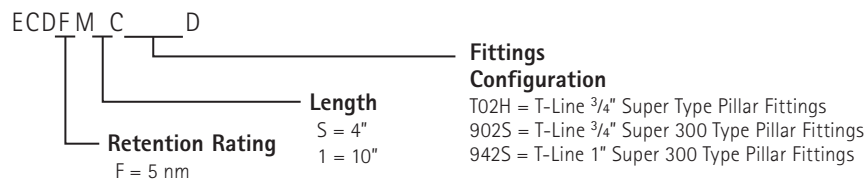


**Fitting Key**

Key	Configuration	Inlet/Outlet	Vent/Drain	Fitting
M01F	In-line	3/4"	1/4"	Flaretek
M21F	In-line	1/2"	1/4"	Flaretek
M31F	In-line	3/8"	1/4"	Flaretek
M41F	In-line	1"	1/4"	Flaretek
M01S	In-line	3/4"	1/4"	Super 300 Type Pillar
M21S	In-line	1/2"	1/4"	Super 300 Type Pillar
M41S	In-line	1"	1/4"	Super 300 Type Pillar

**Guardian ECD UC Chem-line I (PFA) Disposable Filters**

**Part Number**



## For More Information

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit [www.entegris.com](http://www.entegris.com) and select the Customer Service link for the center nearest you.

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