Pall Corporation

Ultipleat® SP DR Filters
Ultipleat® SP DR KC Assemblies

Description

The Pall Ultipleat SP DR filter is designed specifically for high flow and improved particle removal in critical surface preparation chemical baths such as HF and BOE. The SP DR filter features a highly asymmetrical membrane construction, developed using Pall's proprietary membrane modeling technology (MMT) .

The pore size distribution of the membrane uniformly transitions from microporous to nanoporous throughout its depth. The result is a new, application-specific membrane morphology designed for deep submicron retention of particles down to 2 nanometers. This retention is achieved without the flow restriction limitations of conventional membrane pore structures.

The 2, 5 and 10 nanometer Ultipleat SP DR filters utilize a native polyarylsulfone membrane with over 40% higher surface energy than typical surface modified non-dewet PTFE membranes.

The Ultipleat SP DR SWD capsules are space-saving and low pressure drop disposable filter units. They are ideally suited for installing into single wafer cleaning systems.

Features

- MMT-enhanced dual retention of particles
- Superior HF filtration
- Higher flow rates and longer life
- Hyperfine microporous membrane matrix
- High surface energy membrane for minimized microbubble formation
- Faster tool qualification for reduced cost of ownership
- Compact space-saver small capsules

Specifications

Materials of Construction

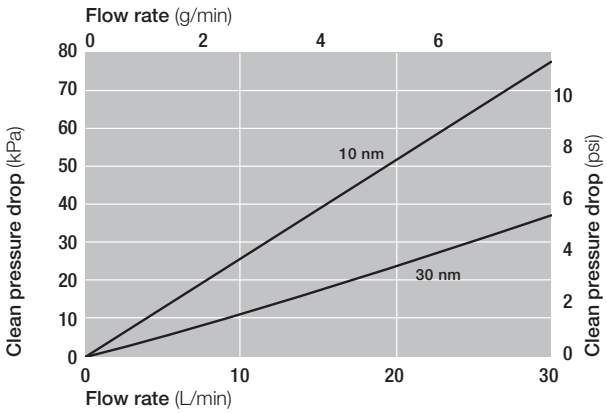
Components	Materials
Filter Medium	Polyarylsulfone
Support and drainage	Polyethylene
Core,cage and end caps	Polyethylene
Sealing method	Melt seal
Housing	Polyethylene
O-ring options	FEP encapsulated fluoroelastomer

Product Name	Ultipleat SP DR KC Assemblies		Ultipleat SP DR SWD Capsules		
Removal Ratings	30 nm	10 nm	10 nm	5 nm	2 nm
Media Wettability	Hydrophilic	Hydrophobic	Hydrophobic		
Configurations	Inline	Inline	U-flow		
Filter Areas	1.2 m^2 / 12.9 ft^2	0.8 m^2 / 8.6 ft^2	0.25 m^2 / 2.7 ft^2		0.20 m^2 / 2.2 ft^2
Maximum Operating Temperature	50 ˚C / 122 ˚F		60 ˚C / 140 ˚F		
Maximum Operating Pressure	0.39 MPaG / 57 psig < 25 ˚C / 77 ˚F 0.15 MPaG / 21 psig < 50 ˚C / 122 ˚F		0.35 MPaG / 51 psig < 38 ˚C / 100 ˚F 0.17 MPaG / 25 psig < 60 ˚C / 140 ˚F		
Maximum Forward Differential Pressure	0.1 MPa / 15 psid @ 50 ˚C / 122 ˚F		0.1 MPa / 15 psid @ 60 ˚C / 140 ˚F		

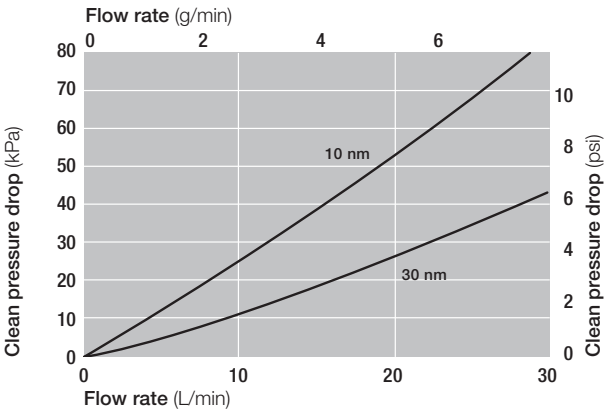
Product Name	Ultipleat SP DR Filters			
Removal Ratings	30 nm		10 nm	
Media Wettability	Hydrophilic		Hydrophobic	
Configurations	254 mm / 10 in	229 mm / 9 in	254 mm / 10 in	229 mm / 9 in
Filter Areas	1.5 m^2 / 16.1 ft^2	1.3 m^2 / 14.0 ft^2	1.0 m^2 / 10.8 ft^2	0.98 m^2 / 10.6 ft^2
Maximum Operating Temperature	70 ℃ / 158 ℉			
Maximum Forward Differential Pressure	0.1 MPa / 15 psid @ 70 ℃ / 158 ℉			

Pressure Drop vs. Liquid flow Rate[1] (Water, 20 ℃)

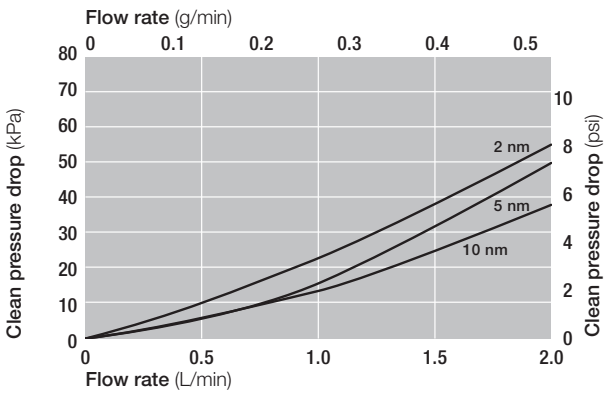
Ultipleat SP DR KC assemblies Inline, Inlet: 1 inch



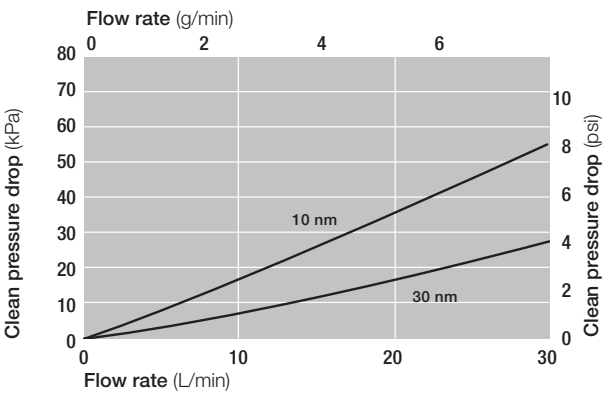
Ultipleat SP DR KC assemblies Inline, Inlet: 3/4 inch



Ultipleat SP DR SWD Capsules



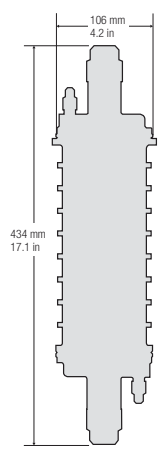
Ultipleat SP DR filters



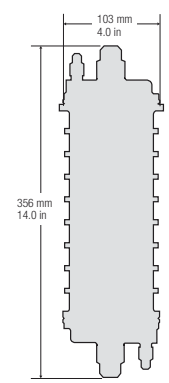
[1] Typical flow rates. For liquids with viscosity differing from water, multiply the pressure drop by the viscosity in centipoise.

Dimensions (Nominal)

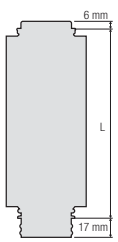
Ultipleat SP DR KC assemblies Inline, Inlet: 1 inch



Ultipleat SP DR KC assemblies Inline, Inlet: 3/4 inch



Ultipleat SP DR filters



Part Numbers / Ordering Information[3]

Ultipleat SP DR KC Assemblies

LDDN09 [1] [2] E51 [3]

Table 1

Code	Removal Ratings
HSVH	10 nm
UHSQ	30 nm

Table 2

Code	Inlet / Outlet	Vent / Drain	Flow
12	¾ in male flare style	½ in male flare style	Inline
164	1 in male flare style	¼ in male flare style	Inline

Table 3

Code	Prewet Option	Scope
None	Dry	30 nm only
-K3	Prewet filter (packaged in DI water)	10 nm only
-K6	Dry, Low metal extractables[2]	30 nm only
-K13C	Prewet filter (packaged in DI water), Low metal extractables[2]	10 nm only

Ultipleat SP DR SWD Capsules

SWD03 [1] 4E71 [2]

Table 1

Code	Removal Ratings
HSAH	2 nm
HSSH	5 nm
HSVH	10 nm

Table 2

Code	Prewet Option	Scope
-K13C	Prewet filter (packaged in DI water), Low metal extractables[2]	5 nm, 10 nm only
-K13D	Prewet filter (packaged in DI water), Low metal extractables[2]	2 nm only

Connections (Inlet/Outlet, Vent: ¼ in , Super Pillar[4] 300 P series (Nippon Pillar)

Ultipleat SP DR Filters

ABD [1] [2] 3EH1 [3]

Table 1

Code	Cartidge Length (Nominal)
04	102 mm / 4 in
09	229 mm / 9 in
1	254 mm / 10 in
2	508 mm / 20 in
3	762 mm / 30 in

Table 2

Code	Removal Ratings
HSVH	10 nm
UHSQ	30 nm

Table 3

Code	Prewet Option	Scope
None	Dry	30 nm only
-K3	Prewet filter (packaged in DI water)	10 nm only
-K6	Dry, Low metal extractables[2]	30 nm only
-K13C	Prewet filter (packaged in DI water), Low metal extractables[2]	10 nm only

[2] Please contact Pall for the extractable conditions.
[3] Part numbers in combination with all codes are not always available. Please contact Pall for the part number availability.
[4] Pillar is a trademark of Nippon Pillar Packing Co.

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