



Microelectronics

Pall Filter Selection Guide
UltiKleen™ Series
Finer Filtration for High Purity Chemicals



UltiKleen™ Series

Filter Application

Chemicals / Application	Temperature Range	Product Name
SC-1/APM (NH ₃ /H ₂ O ₂ /H ₂ O) SC-2/HPM (HCl/H ₂ O ₂) Chemical Delivery System	R.T. up to 90 °C R.T. up to 194 °F	UltiKleen™ KC
		UltiKleen™ G2 KC
		UltiKleen™ G2 Excellar KC
		UltiKleen™ G2 Excellar ER / Excellar ERL KC
SPM/Piranha (H ₂ SO ₄ /H ₂ O ₂)	≤ 150 °C ≤ 302 °F	UltiKleen™ SPM-G2 KC (DV Type)
		UltiKleen™ G2 Excellar ERL KC (DV Type)
		UltiKleen™ G3 Excellar ER KC (DV Type)
H ₃ PO ₄	≤ 170 °C ≤ 338 °F	UltiKleen™ SPM-G2 KC
Stripper	R.T. up to 90 °C R.T. up to 194 °F	UltiKleen™ STG KC
		UltiKleen™ STP KC
Single Wafer Tool	R.T. up to 120 °C R.T. up to 248 °F	UltiKleen™ JKC
		UltiKleen™ JKC Excellar ER
		UltiKleen™ G2 Excellar KC
		UltiKleen™ G2 Excellar ER KC

Specifications

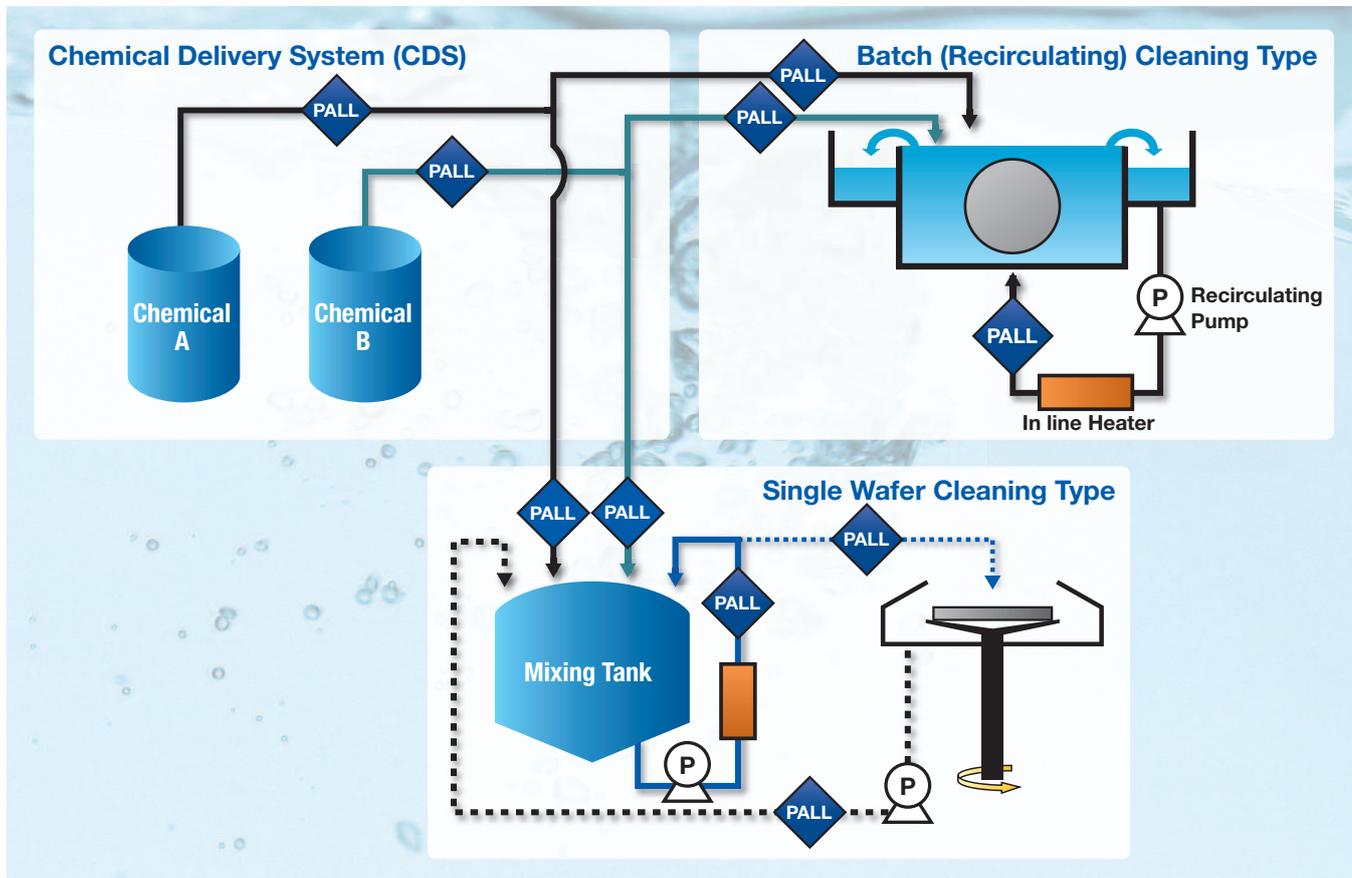
Filter	UltiKleen™			UltiKleen™ G2			UltiKleen™ G2 Excellar	
	50nm	0.1 μm	0.2 μm	50nm	0.1 μm	0.2 μm	30nm	50nm
Reference Datasheet	E98			E98, A106			E103	
Typical Application	SC-1, SC-2			SC-1, SC-2			SC-1, SC-2	
Removal Ratings	50nm	0.1 μm	0.2 μm	50nm	0.1 μm	0.2 μm	30nm	50nm
Media Material	PTFE			PTFE			Surface Modified PTFE	
Filter Areas	1.2 m ² /12.9 ft ² (10" Cartridge)			2.2 m ² /23.7 ft ² (10" Cartridge)			2.2 m ² /23.7 ft ² (10" Cartridge)	
Air Bubble Removal (Downstream Vent Construction)	N/A			Available			Available	
Features & Benefits	Improved flow characteristics with enlarged filtration area. This increases fluid turnover rate for improved cleaning bath performance.			Significantly improved flow characteristics for large-diameter wafer fabrication process. Copes with larger pump capacity.			Adopts non-dewetting PTFE membrane. Prevents filter media from drying, enabling stable circulating flow rate. Achieves flow characteristics equal to conventional 50 nm filter with a 30 nm filter.	



Removal Ratings							Features
50 μm	10 μm	0.2 μm	0.1 μm	50nm	30nm	20nm	
		●	●	●			Filter design assures stable flow with excellent flow characteristics.
		●	●	●			Significantly improves flow performance with a larger diameter, G2, cartridge design that increases filter area.
				●	●		Incorporates a non-dewetting PTFE membrane filter. Achieves the flow performance equal to a conventional 50 nm filter with a 30 nm rated filter.
						●	Incorporates a non-dewetting PTFE membrane filter. Uses a high flow 20 nm membrane filter with retention established by Pall's proven rating methodology.
		●	●	●			Has improved filter media durability for use with high temperature chemicals. The optimized filter structure enables long term stable equipment operation.
						●	Uses a non-dewetting PTFE membrane filter with a downstream vent structure designed to prevent the filter media from dewetting.
						●	Incorporates an improved Kleen-Change [®] structure with larger surface area. This achieves flow performance equal to or higher than a conventional 50 nm filter with a 20 nm rated filter.
		●	●	●			Designed to provide high and stable fluid flow performance with high viscosity chemicals.
●	●	●	●				Uses a multilayer media structure that efficiently captures gel particles and significantly extends filter service life.
		●	●	●			Reduces particle contamination by using an optimized media structure to prevent captured gel particles from passing downstream.
		●	●	●			A compact, space saving, and low pressure loss disposable assembly with a built-in high flow UltiKleen [™] filter cartridge. Easily fits commonly used tools and equipment.
						●	Incorporates a non-dewetting PTFE membrane. A compact disposable assembly with a built-in 20 nm membrane filter.
				●	●		Incorporates a high flow non-dewetting PTFE membrane. This achieves flow performance equal to or higher than a conventional 50 nm filter with a 30 nm rated filter.
						●	Incorporates a high flow design 20 nm non-dewetting PTFE membrane filter. Filter retention is established by Pall's proven rating methodology.

UltiKleen [™] G2 Exceller ER	UltiKleen [™] G2 Exceller ERL	UltiKleen [™] G3 Exceller ER	UltiKleen [™] SPM-G2		
E114	—	—	MEUKSPM		
SC-1, SC-2, SPM	SC-1, SC-2, SPM	SC-1, SC-2, SPM	SPM, H ₃ PO ₄		
20nm	20nm	20nm	50nm	0.1 μm	0.2 μm
Surface Modified PTFE	Surface Modified PTFE	Surface Modified PTFE	PTFE		
1.9 m ² /20.5 ft ² (10" Cartridge)	3.0 m ² /32 ft ² (10" Cartridge)	4.4 m ² /47 ft ² (10" Cartridge)	1.7 m ² /18 ft ² (10" Cartridge)		
Available	Available	Available	Only available for 50nm		
20nm filter proven by Pall's original rating method. Highly durable filter for high-temperature, high-viscosity fluid contributes to long-term stable operation of equipment.	Improved filter cartridge structure increases effective filtration area. The result is significantly higher flow performance suitable for the demands of large diameter wafer fabrication processes.	Kleen-Change [®] structure redesigned for larger filtration area than ever and high flow rate. 20nm microfiltration and increased circulating flow rate inside the bath contribute to significantly improved in-bath replacement speed.	Structure for improving filter media durability at high temperatures and preventing damages to filter media. Enables long-term stable equipment operation.		

Application at wet cleaning process



Specifications

Filter	UltiKleen™ STG	UltiKleen™ STP	UltiKleen™ JKC
Reference Datasheet	E107	E112	A97
Typical Application	Stripper for Photo Resist	Stripper for Photo Resist	Compact size for small flow
Removal Ratings	0.1 μm 0.2 μm 10 μm 50 μm	50nm 0.1 μm 0.2 μm	50nm 0.1 μm 0.2 μm
Media Material	PTFE	PTFE	PTFE
Filter Areas	Refer to datasheet	1.2 m ² /12.9 ft ² (10" type) 1.7 m ² /18.3 ft ² (G2 type)	0.13 m ² /1.4 ft ²
Air Bubble Removal (Downstream Vent Construction)	Only available for G2 Type	Only available for G2 Type	N/A
Features & Benefits	Optimized pore size and thickness of prefilter layer to capture large quantities of large-size gel particles. Demonstrates high foreign particle filtering capacity and significantly extends filter life.	Optimized structural design for significantly improved gel particle removal performance. Reduces particles on a wafer and extends filter life.	Compact, low pressure loss filter with space-saving footprint, suitable for use as a chemical filter for wafer cleaning equipment or spin coater immediately before fluid is discharged.



Flow Characteristics - 10" Kleen-Change® Assembly

Product Name (Kleen-Change®)	Removal Ratings					Liquid Flow Rate [L/min] (at 30kPa)						
	20nm	30nm	50nm	0.1 μm	0.2 μm	10	15	20	25	30	35	40
UltiKleen™			●	●	●			●	●	●		
UltiKleen™ G2			●	●	●					●	●	●
UltiKleen™ SPM-G2			●	●	●				●	●	●	●
UltiKleen™ G2 Excellar		●	●						●	●		
UltiKleen™ G2 Excellar ER	●						●					
UltiKleen™ G2 Excellar ERL	●							●				
UltiKleen™ G3 Excellar ER	●										●	

* Liquid Flow Rate : In case of 3/4" T-Flow, Only UltiKleen G3 Excellar-ER 1" T-Flow

Flow Characteristics - 5" Kleen-Change® Assembly

Filter (Kleen-Change®)	Removal Ratings					Liquid Flow Rate [L/min] (at 30kPa)							
	20nm	30nm	50nm	0.1 μm	0.2 μm	0	2	4	6	8	10	12	14
UltiKleen™			●	●	●					●	●	●	
UltiKleen™ Excellar		●	●						●	●			
UltiKleen™ Excellar ER	●								●				

* Liquid Flow Rate : In case of 1/2" Inline Flow

Flow Characteristics - JKC Assembly

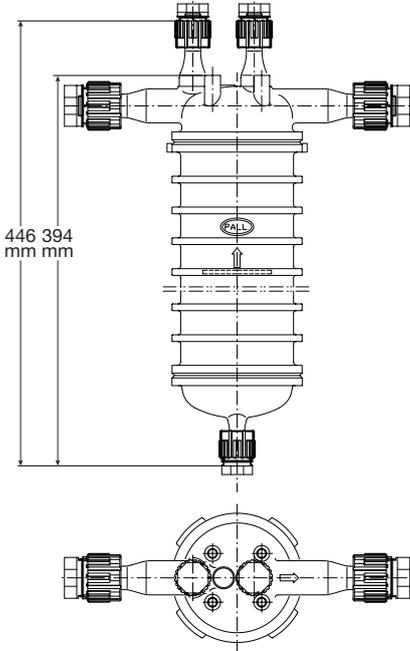
Filter (Kleen-Change®)	Removal Ratings					Liquid Flow Rate [L/min] (at 20kPa)					
	20nm	30nm	50nm	0.1 μm	0.2 μm	0	1	2	3	4	5
UltiKleen™ JKC			●	●	●			●	●	●	
UltiKleen™ JKC Excellar ER	●						●				

For liquids with a different viscosity from water, multiply the pressure drop by the viscosity in centipoise.

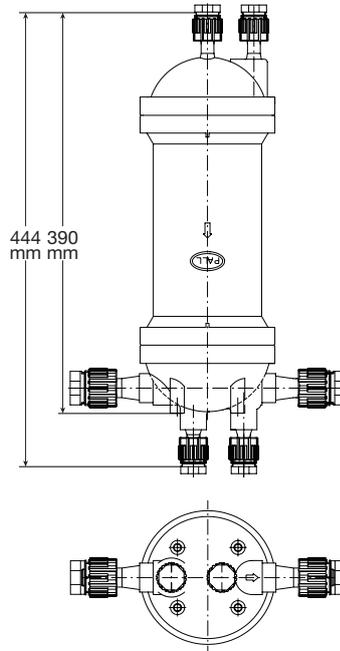
UltiKleen™ Series

Dimensions

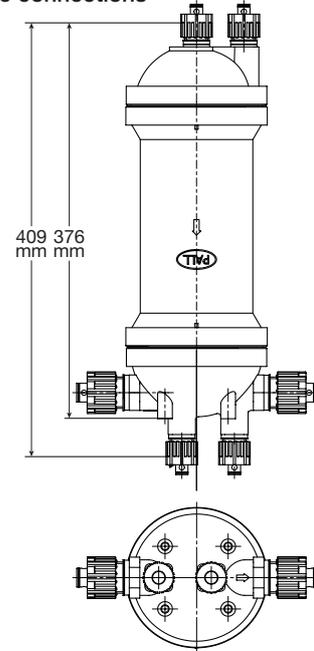
UltiKleen™ KC
(3/4" Pillar Super 300P Series)



UltiKleen™ G2 KC
DV (Downstream Vent) Type
(3/4" Pillar Super 300P Series)



UltiKleen™ G2 KC
DV (Downstream Vent) Type
(3/4" Pillar Super 300P Series)
Male connections



UltiKleen™ KC
(Non connection)



UltiKleen™ G2 KC
DV (Downstream Vent) Type
(3/4" Pillar Super 300P Series)



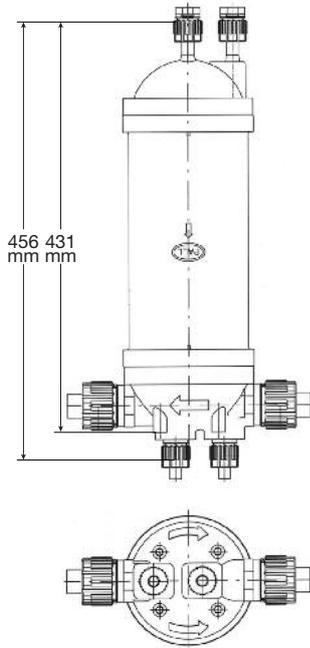
UltiKleen™ G2 KC
DV (Downstream Vent) Type
(3/4" Pillar Super 300P Series)
Male connections



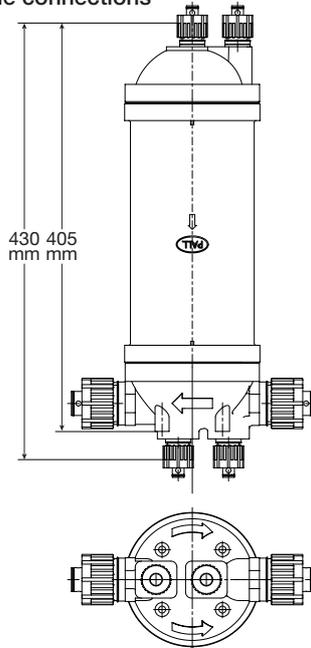


Dimensions

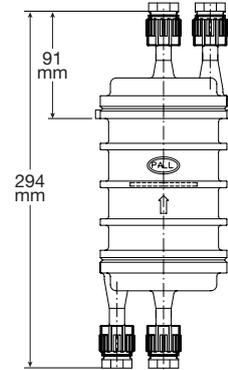
**UltiKleen™ G3 KC
DV (Downstream Vent) Type
(1" Pillar Super 300P Series)**



**UltiKleen™ G3 KC
DV (Downstream Vent) Type
(1" Pillar Super 300P Series)
Male connections**



**5inch Size UltiKleen™ KC
(1/2" Pillar Super 300P Series)**



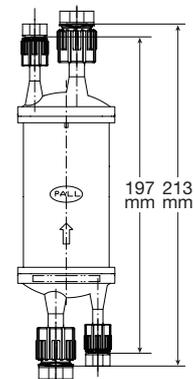
**5inch Size UltiKleen™ KC
(Non connection)**



**UltiKleen™ G3 KC
DV (Downstream Vent) Type
(1" Pillar Super 300P Series)**



**UltiKleen™ JKC
(3/8" Pillar Super 300P Series)**



Pillarfitting is a trademark of Nippon Pillar Packing Co., Ltd.



PALL Microelectronics

Corporate Headquarters
25 Harbor Park Drive
Port Washington, NY 11050
+1 516 484 3600 telephone
+1 800 360 7255 toll free US
Microelectronics@pall.com

Nihon Pall Head Office
6-5-1, Nishishinjuku,
Shinjuku-ku
Tokyo 163-1325 Japan
Phone: +81.3.6901.5710
Fax: +81.3.5322.2109

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