**MICROCONTAMINATION CONTROL** 

# Optimizer<sup>®</sup> AUC Photochemical Filter

Ultraclean 1 nm filtration specially designed for point-of-use aqueous photochemical applications

The Optimizer® AUC 1 nm filter enables leading-edge contamination control performance in advanced photolithography processes. Designed for TMAH and aqueous chemistries, the hydrophobic polyethylene membrane ensures reduced on-wafer defects and improved yields. Optimizer AUC's enhanced ultraclean (UC) technology is the definitive standard for sub-20 nm photochemical filtration to ensure lower particles, as well as reduced organic and metal leachables resulting in faster flush-up performance and extended tool uptime.

Optimizer AUC uses Entegris' Connectology<sup>®</sup> to quickly and securely seal with the Optimizer ST2 manifold without tools. This filter-manifold combination shortens the filter changeout time to less than a minute. In addition, Optimizer AUC ships "water-wet" in ultrapure DI water, eliminating the need for prewetting prior to use. This packaging safeguards against chemical interactions and potential sources of contamination, and prevents filter dewetting that can lead to sudden flow loss and unscheduled filter changeouts.

### **APPLICATIONS**

• Sub-20 nm device nodes for 300 mm tools

 Aqueous chemistries – TMAH, surfactanated water, special rinses



### **FEATURES & BENEFITS**

Enhanced cleaning process	Ensures lower leachables, particle shedding, non-volatile residue (NVR) and metal contaminants Faster system flush-up and extended tool uptime
1 nm retention rating	Hydrophobic membrane enables leading-edge contamination control performance with reduced on-wafer defects and improved yields
"Water-wet" packaging in ultrapure DI water	Requires no prewetting prior to use Safeguards against chemical interactions and potential sources of contamination Prevents dewetting that can lead to sudden flow loss and unscheduled filter changeouts
Filter-manifold combination enabled by Entegris' Connectology	Quick and secure connection to Optimizer ST2 manifold without tools Reduces filter changeout time to under a minute
Compatibility with aqueous chemistries	Wide range of operating flexibility, including TMAH, surfactanated water and special rinse materials



# Optimizer AUC Photochemical Filter

### **SPECIFICATIONS**

Materials	Membrane	Polyethylene (PE)
	Shell (for housing)	Polyethylene (PP)
	Core, supports	High-density polyethylene (HDPE)
	Shipping cap	Perfluoroalkoxy (PFA)
	O-ring	Kalrez®
Retention rating	1 nm	
Length	160 mm (6.30")	
Diameter	87 mm (3.43")	
Membrane surface area	6.39 m² (68.71 ft²)	
Maximum operating conditions	<b>Maximum inlet pressure:</b> 0.39 MPa (57 psi) @ 25°C (77°F)	
	Maximum forward/reverse differential pressure: 0.27 MPa (39 psi) @ 25°C (77°F)	
	Maximum operating temperature: 40°C (104°F)	
Prewet fluid	Sterile DI water*	
Manifold	Optimizer ST2 manifold	

\*Six-month shelf life

### DIMENSIONS

**Top View** 





### **PERFORMANCE DATA**

Optimizer AUC 1 nm Flow Rate Compared to Optimizer ST-LX UPE 3 nm and 5 nm



### **ORDERING INFORMATION**

Part number	Description
AWTEMLKX1PW	Optimizer AUC Ultraclean Filter 1 nm

# Optimizer ST2 Manifold

### **SPECIFICATIONS**

Materials of construction	Tubes and wetted surfaces	PFA
	Nonwetted components	Stainless steel
	Release tab	POM
	O-rings	None
Operating conditions	Maximum inlet pressure	0.39 MPa (3.9 bar, 57 psi) @ 25°C (77°F)

### DIMENSIONS





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### Optimizer ST2 Manifold (with O-ring)

0-RING MATERIAL PART NUMBER		STANDARD TUBE TYPE		
EPDM	Kalrez	Inlet/Outlet	Vent	
AMVT442E1	AMVT442K1	12.70 mm (0.50")	6.35 mm (0.25")	
AMVT332E1	AMVT332K1	9.53 mm (0.38")	6.35 mm (0.25")	
AMVT222E1	AMVT222K1	6.35 mm (0.25")	6.35 mm (0.25")	
AMVT884E1	AMVT884K1	8.00 mm (0.31")	4.00 mm (0.16")	
AMVT664E1	AMVT664K1	6.00 mm (0.24")	4.00 mm (0.16")	
		THIN TUBE TYPE		
AMVT442ET	AMVT442KT	12.70 mm (0.50")	6.35 mm (0.25")	
AMVT332ET	_	9.53 mm (0.38")	6.35 mm (0.25")	
AMVT222ET	_	6.35 mm (0.25")	6.35 mm (0.25")	
		FLARETEK® FITTING TY	PE STANDARD TUBE TYPE	
AMVF442E1	AMVF442K1	12.70 mm (0.50")	6.35 mm (0.25")	
		FLOWELL™ 60 THIN TUBE TYPE		
AMVXL42ET(T)	AMVXL42KT	12.70 mm (0.50")	6.35 mm (0.25")	
AMVXL32ET(T)	AMVXL32KT	9.53 mm (0.38″)	6.35 mm (0.25")	
AMVXL22ET(T)	AMVXL22KT	6.35 mm (0.25")	6.35 mm (0.25")	

### Optimizer ST2 Manifold (without O-ring)

	STANDARD TUBE TYPE		
Part Number	Inlet/Outlet	Vent	
AMVT44201	12.70 mm (0.50")	6.35 mm (0.25″)	
AMVT33201	9.53 mm (0.38″)	6.35 mm (0.25")	
AMVT22201	6.35 mm (0.25″)	6.35 mm (0.25″)	
AMVT88401	8.00 mm (0.31")	4.00 mm (0.16")	
AMVT66401	6.00 mm (0.24")	4.00 mm (0.16")	
	THIN TUBE TYPE		
AMVT442NT	12.70 mm (0.50")	6.35 mm (0.25")	
AMVT332NT	9.53 mm (0.38″)	6.35 mm (0.25")	
AMVT222NT	6.35 mm (0.25")	6.35 mm (0.25")	

#### FOR MORE INFORMATION

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