

# Optimizer<sup>®</sup> ST-LX AT Filters

*Specifically designed for advanced filtration of negative tone developer (NTD) in leading-edge lithography applications*

Optimizer<sup>®</sup> ST-LX AT filters enable advanced point-of-dispense and point-of-tool filtration for negative tone developer (NTD) and aggressive solvent applications at sub-20 nm technology nodes. In NTD processes, aggressive solvents such as n-Butyl Acetate (nBA) are widely used. Traditional UPE or nylon filter membranes are incapable of providing consistent retention with this, and other, aggressive solvents.

Optimizer ST-LX AT filters, available with 10 nm, 7 nm, and 2 nm retention ratings, utilize a robust, highly retentive PTFE membrane that performs well in NTD applications. These filters also meet the strict requirements for reduced particle shedding, and low metal and organic extractables, while improving filter cleanliness with fewer on-wafer particle defects. The long capsule format enhances flow rate performance, resulting in increased process yields and shorter filter startups.

## APPLICATIONS

- Organic solvents – including negative tone developer (NTD)
- Aggressive solvents such as n-Butyl Acetate (nBA) or nBA base formulations



## FEATURES & BENEFITS

<b>Robust, highly retentive PTFE membrane</b>	<p>Enables reduced particle shedding, low metal and organic extractables, improving filter cleanliness</p> <p>Promotes excellent small particle retention, resulting in fewer on-wafer defects</p>
<b>Long capsule form factor</b>	<p>Enhances flow rate performance, increasing process yields</p> <p>Allows shorter filter startup intervals</p>
<b>High-purity fluoropolymer construction</b>	<p>Provides broad solvent compatibility including aggressive solvents such as nBA, cyclohexane, etc.</p> <p>Provides excellent overall device cleanliness for fast startup</p>

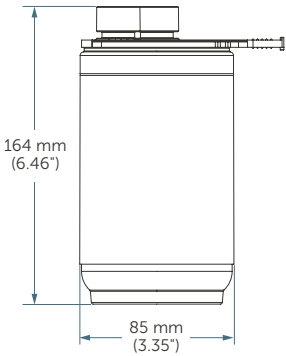
## SPECIFICATIONS

Retention rating		2 nm, 7 nm, 10 nm
Materials	Membrane	PTFE
	Supports, core, sleeve	PFA
	Housing	PFA
	O-ring	Kalrez®
Filtration surface area		4,800 cm² (5.2 ft²)
Maximum operating conditions		Maximum inlet pressure: 0.39 MPa (3.9 bar, 57 psi) @ 25°C (77°F)  Maximum forward/reverse differential pressure: 0.27 MPa (2.7 bar, 39 psi) @ 25°C (77°F)  Maximum operating temperature: 40°C (104°F)
Weight	Net	0.92 kg (2.0 lbs)
	Gross (Including packages)	1.12 kg (2.5 lbs)
Dimensions of package		18.5 cm L x 14.2 cm W x 10.3 cm H (7.3" L x 5.6" W x 4.1" H)

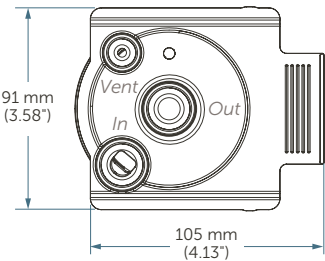
Entegris recommends that customers change filters at least annually to ensure optimal filtration performance. Routine annual changeout will also reduce the potential of chemical leakage that can result from excessive usage. Our standard warranty period is 1 year (from Entegris ship date).

## DIMENSIONS

Side View

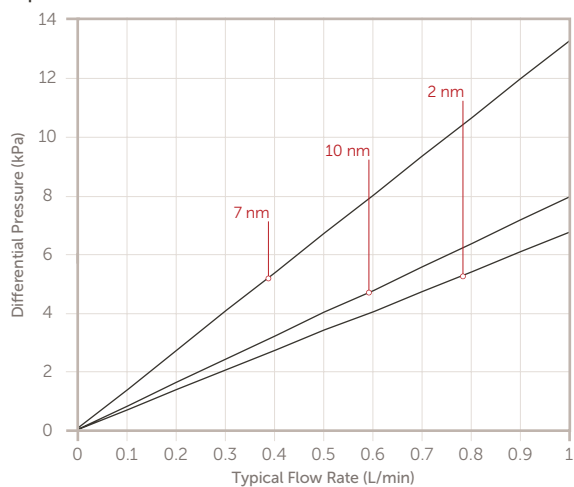


Top View



## PERFORMANCE DATA

### Optimizer ST-LX AT Filters



## ORDERING INFORMATION

Part number	Retention rating	Cleaning process	Recommended application
APFJ0SKM1ULC	2 nm	Ultra Low Carbon (ULC)	nBA
APFJ0SKM1DF1	2 nm	Ultraclean for non-nBA chemicals (DF1)	Non-nBA aggressive solvents
S4439R008Y17	7 nm	Ultraclean Plus (UCP)	nBA
APFM0SKM1T	7 nm	Standard	nBA
APFT0SKM1UC	10 nm	Ultraclean (UC)	nBA
APFT0SKM1	10 nm	Standard	nBA

# Optimizer ST AT Flushing Shell

## SPECIFICATIONS

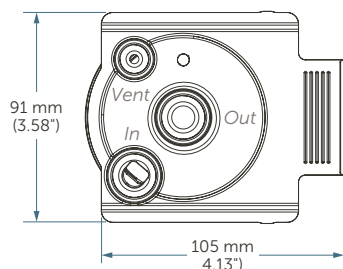
<b>Materials</b>	Shell	PFA
	O-ring	Kalrez
<b>Hold-up volume</b>	80 mL	
<b>Maximum operating conditions</b>	Maximum inlet pressure: 0.39 MPa (3.9 bar, 57 psi) @ 25°C (77°F)	
	Maximum operating temperature: 40°C (104°F)	

*Note: The flushing shell is designed for short-term use (less than 1 month) in flushing chemical lines and systems.*

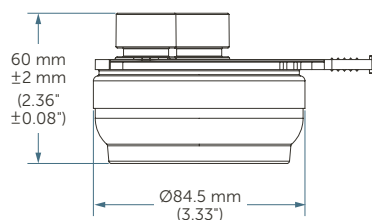
- Replace flushing shell with appropriate filter once line flushing is completed.
- Discard used flushing shells. Do not reuse.
- Do not use flushing shells in lieu of a filtration device or subject to long-term exposure to solvents in a pressurized environment.
- The warranty will be voided if the product is used in lieu of a filtration device or is subjected to long-term exposure to solvents in a pressurized environment.
- If expecting extended idle time in dispense line, we strongly urge customers to perform one of the following to avoid compromising flushing shell integrity:
  - Depressurize line while flushing shell is installed.
  - Dry the line and discontinue using the flushing shell.

## DIMENSIONS

Top View



Side View



## ORDERING INFORMATION

Part number	Description
ATH0000K1	Optimizer ST AT flushing shell, Kalrez O-ring

*Recommended for nBA applications.*

#### FOR MORE INFORMATION

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

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#### Corporate Headquarters

129 Concord Road  
Billerica, MA 01821  
USA

#### Customer Service

Tel +1 952 556 4181  
Fax +1 952 556 8022  
Toll Free 800 394 4083

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