

# Impact<sup>®</sup> Point-of-Use Photochemical Filters

*Rapid changeout filters featuring superior retention performance for ultra-clean, point-of-use filtration of photoresist and photochemical solvents*

Representing a lineage of in-fab production expertise and customer collaboration, Impact<sup>®</sup> point-of-use (POU) photochemical filters deliver superior filtration solutions to critical photolithography processes.

## Array of Membrane Technologies Maximizing Retention Performance and Chemical Compatibility

Impact filters utilize various membrane technologies to maximize retention performance. The asymmetric UPE membrane enables tighter retention performance and lower pressure drop than a standard symmetrical UPE membrane. The Impact Duo technology, which combines sieving and non-sieving functionality, removes difficult contaminants from specific photochemicals more efficiently than a single sieving filter. Utilizing two times the nylon membrane thickness, the nylon design improves gel retention performance at a 10 nm retention rating for market-leading contamination control. Each membrane technology is characterized for optimal performance in the most common photochemicals and blends in use.

## Innovative Design Solutions

Entegris offers innovative design solutions. Impact filters use our proven Connectology<sup>®</sup> technology to quickly and securely connect and seal the filter to the Impact manifold or IntelliGen<sup>®</sup> dispense system.



## APPLICATIONS

Filter Series	FILTER TYPE	APPLICATIONS*
<b>Impact 2 V2</b>	Impact Asymmetric Nylon	POU photoresist, ancillary photochemicals and solvent filtration
	Impact 2 UPE	POU photoresist, ancillary photochemicals and solvent filtration
	Impact 2-Duo	POU photoresist, ancillary photochemicals and solvent filtration
<b>Impact Plus</b>	Impact Plus UPE	POU photoresist, ancillary photochemicals and solvent filtration
	Impact Plus-Duo	POU photoresist, ancillary photochemicals and solvent filtration
	Impact Plus Nylon	POU photoresist, ancillary photochemicals and solvent filtration
	Impact SR-LHVD (all PTFE)	Aggressive solvents
<b>Impact HV</b>	Impact high viscosity	High viscosity chemicals; HV KrF and i-line photoresist for 3D NAND

\*Please contact your Regional Customer Service Center for specific recommendations.

## FEATURES & BENEFITS

<b>Superior cleanliness</b>	<p><b>Impact filters</b></p> <p>Superior cleanliness maintained in critical chemical processes</p> <p>High surface area and low hold-up volume help to reduce chemical usage and limit exposure to hazardous chemicals during installation and disposal</p>
<b>Array of membrane technologies maximizing retention performance</b>	<p><b>Asymmetric UPE membrane</b></p> <p>Tighter retention (down to 3 nm with Impact 8G series filters) and lower pressure drop than a standard symmetrical UPE membrane</p> <p><b>Impact Duo membrane</b></p> <p>Combines sieving and non-sieving technology into duo functionality at retention ratings down to 5 nm to remove difficult contaminants that sieving alone cannot capture from specific photochemicals</p> <p><b>Nylon membrane</b></p> <p>Optimized gel retention performance at a 10 nm retention rating for market-leading contamination control</p>
<b>Innovative design solutions</b>	<p><b>Advanced Connectology</b></p> <p>Quickly and securely connects Impact filters to Impact manifold and IntelliGen dispense systems, enabling rapid changeouts without tools</p>

# Impact 2 V2 Filters

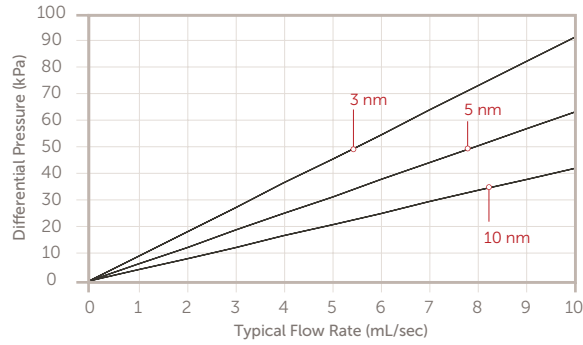
## SPECIFICATIONS

<b>Materials</b>	Membrane	UPE, nylon, Duo, PCM
	Surface area	<p><b>Asymmetric UPE:</b> 1250 cm<sup>2</sup> (1.45 ft<sup>2</sup>)</p> <p><b>UPE:</b> 1140 cm<sup>2</sup> (1.20 ft<sup>2</sup>) for 0.5 μm, 1.0 μm 1270 cm<sup>2</sup> (1.37 ft<sup>2</sup>) for 0.05 μm, 0.1 μm, 0.2 μm 1350 cm<sup>2</sup> (1.45 ft<sup>2</sup>) for 20 nm, 10 nm 2500 cm<sup>2</sup> (2.69 ft<sup>2</sup>) for Long 20 nm, 0.05 μm</p> <p><b>Asymmetric nylon:</b> 800 cm<sup>2</sup> (0.86 ft<sup>2</sup>)</p> <p><b>Asymmetric PCM:</b> 1350 cm<sup>2</sup> (1.45 ft<sup>2</sup>)</p> <p><b>Duo, nylon:</b> 800 cm<sup>2</sup> (0.86 ft<sup>2</sup>) 850 cm<sup>2</sup> (0.92 ft<sup>2</sup>)</p>
	Supports (upstream, downstream, mold)	HDPE
	O-ring	Kalrez perfluoroelastomer
<b>Retention rating</b>	Nylon	10 nm, 20 nm, 0.05 μm
	Asymmetric UPE	3 nm, 5 nm, 10 nm
	UPE	10 nm, 20 nm, 0.05 μm, 0.1 μm, 0.2 μm, 0.5 μm, 1.0 μm
	Duo	10 nm, 30 nm
	PCM (surface-modified UPE)	10 nm, 20 nm
<b>Maximum operating conditions</b>	Maximum inlet pressure: 0.34 MPa (3.4 bar, 50 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)	
<b>Hold up volume</b>	Short: 55 mL Long: 110 mL	
<b>Compatibility*</b>	PGMEA, PGME (contact your local Entegris applications engineer for details)	
<b>Wettability*</b>	Spontaneously wets in PGMEA, PGME, and other photochemical solvents. (contact your local Entegris applications engineer for details)	

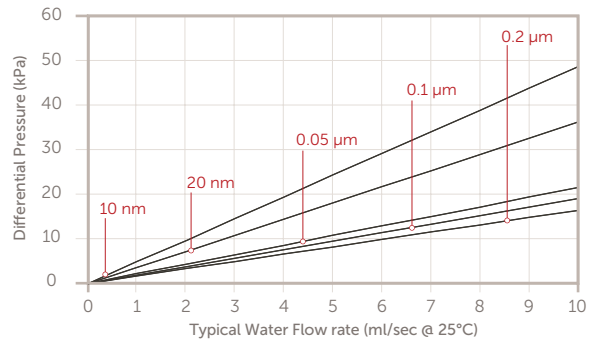
\*Please contact your Regional Customer Service Center for specific recommendations.

## PERFORMANCE DATA

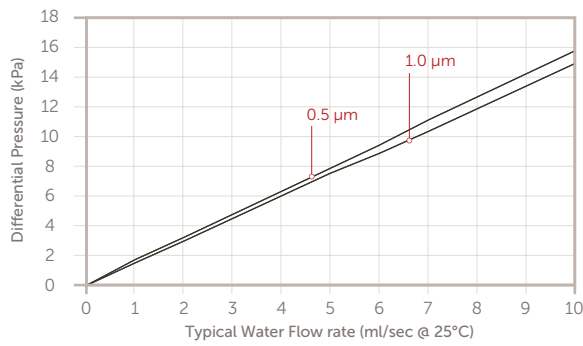
Impact 2 V2 Asymmetric UPE Filters



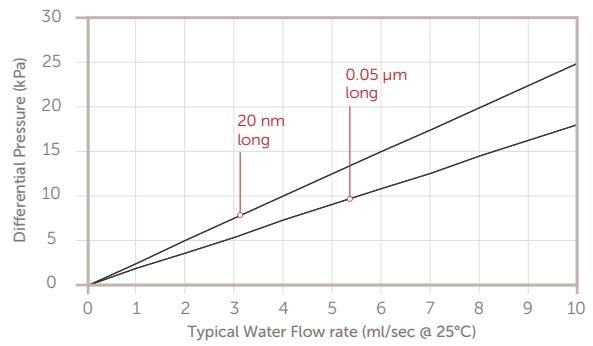
Impact 2 V2 UPE Filters



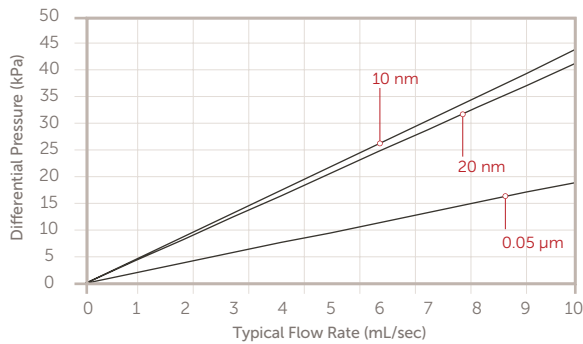
Impact 2 V2 UPE Filters



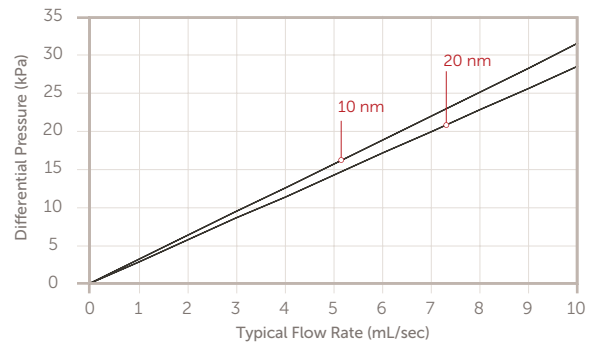
Impact 2 V2 UPE Long Filters



Impact 2 V2 PCM Filters



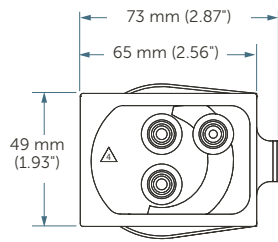
Impact 2 V2 Asymmetric Nylon Filters



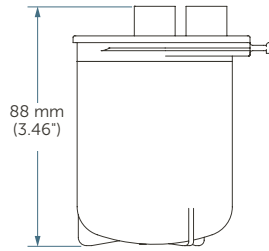
## DIMENSIONS

### Impact 2 V2 Filter

Top View

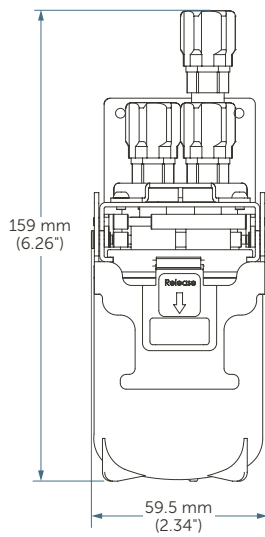


Side View

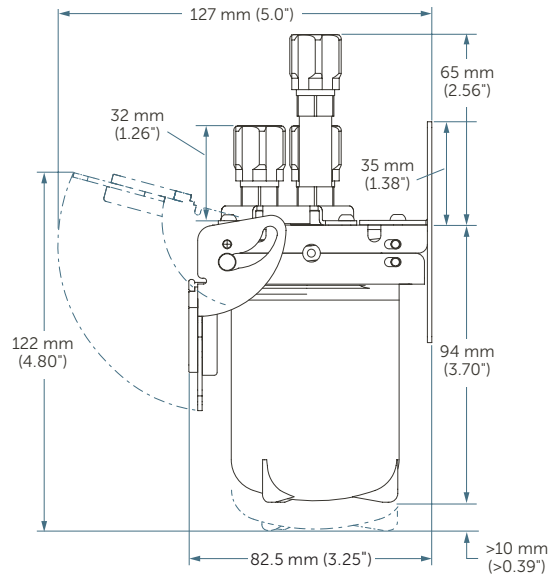


### Impact 2 V2 Filter with Impact 2 Manifold

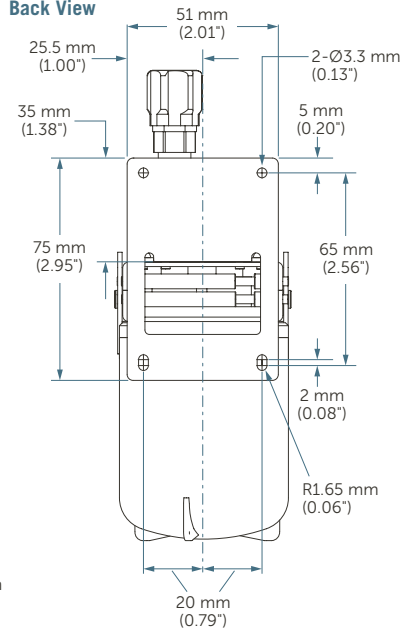
Front View



Side View



Back View



## ORDERING INFORMATION

### Impact 2 V2 Filters

Part number	Membrane	Retention rating	Configuration	O-ring
A2SK20MK1	Asymmetric UPE	3 nm	Short	OF Kalrez
A2SF20MK1	Asymmetric UPE	5 nm	Short	OF Kalrez
A2ST20MK1	Asymmetric UPE	10 nm	Short	OF Kalrez
A2AX20MK1	UPE	20 nm	Short	OF Kalrez
A2AX2LMK1	UPE	20 nm	Long	OF Kalrez
A2AT20MK1	UPE	10 nm	Short	OF Kalrez
A2AZ200K1	UPE	0.05 µm	Short	OF Kalrez
A2AZ2LMK1	UPE	0.05 µm	Long	OF Kalrez
A2AV200K1	UPE	0.1 µm	Short	OF Kalrez
A2AG200K1	UPE	0.2 µm	Short	OF Kalrez
A2UH200K1	UPE	0.5 µm	Short	OF Kalrez
A2UA200K1	UPE	1.0 µm	Short	OF Kalrez
A2BZ200K1	DI	0.05 µm	Short	OF Kalrez
A2DT200K1	Duo	10 nm	Short	OF Kalrez
A2DY200K1	Duo	0.03 µm	Short	OF Kalrez
A2HV200K1	DEV	0.1 µm	Short	OF Kalrez
A2MX20MK1	PCM	20 nm	Short	OF Kalrez
A2MT20MK1	PCM	10 nm	Short	OF Kalrez
A2NX200K1	Nylon	20 nm	Short	OF Kalrez
A2NT200K1	Nylon	10 nm	Short	OF Kalrez
A2NZ200K1	Nylon	0.05 µm	Short	OF Kalrez

# Impact Plus V2, Plus Duo, and Impact SR LHVD Filters

## SPECIFICATIONS

		IMPACT PLUS V2	IMPACT PLUS DUO	IMPACT SR LHVD
<b>Materials</b>	Membrane	UPE, nylon, PCM	UPE/nylon	PTFE
	Surface area	10 nm asymmetric 1300 cm <sup>2</sup> (1.46 ft <sup>2</sup> )	850 cm <sup>2</sup> (0.92 ft <sup>2</sup> )	600 cm <sup>2</sup> (0.65 ft <sup>2</sup> )
		10 nm, 20 nm 1400 cm <sup>2</sup> (1.51 ft <sup>2</sup> )		
		20 nm PCM 1400 cm <sup>2</sup> (1.51 ft <sup>2</sup> )		
		All others 1200 cm <sup>2</sup> (1.29 ft <sup>2</sup> )		
	Supports and molded components	HDPE		—
	Supports, core, sleeve, shell	—		PFA
O-ring	Kalrez perfluoroelastomer			
<b>Retention rating</b>	Nylon	10 nm, 20 nm, 0.05 μm		
	UPE	3 nm–1 μm		
	Duo	10, 30 nm		
	PCM (surface-modified UPE)	20 nm–0.05 μm		
	PTFE	20 nm–1 μm		
<b>Maximum operating conditions</b>	Maximum inlet pressure	0.34 MPa (3.4 bar, 50 psi) @ 25°C (77°F)	0.39 MPa (3.9 bar, 56.6 psi) @ 25°C (77°F)	
	Maximum forward/reverse differential pressure	0.27 MPa (2.7 bar, 39 psi) @ 25°C (77°F)	0.29 MPa (2.9 bar, 42 psi) @ 25°C (77°F)	
	Maximum operating temperature	40°C (104°F)	30°C (86°F)	
<b>Hold up volume</b>	≤55 cc		≤45 cc	

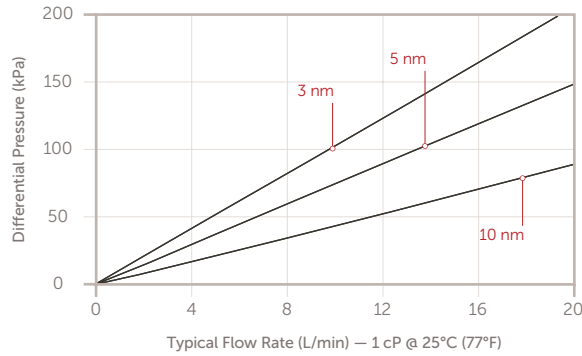
## SPECIFICATIONS (CONTINUED)

	IMPACT PLUS V2	IMPACT PLUS DUO	IMPACT SR LHVD
<b>Compatibility*</b>	PGMEA, PGME (contact your local Entegris applications engineer for details)		All photochemical solvents
<b>Wettability*</b>	Spontaneously wets in PGMEA, PGME, and other photochemical solvents (contact your local Entegris applications engineer for details)		Prewetting should be considered with higher surface tension solvents such as NMP, cyclohexanone, GBL, EGMEA ethyl lactate and MMP.

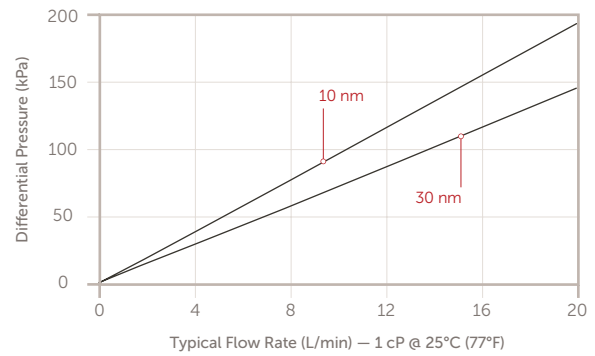
\*Please contact your Regional Customer Service Center for specific recommendations.

## PERFORMANCE DATA

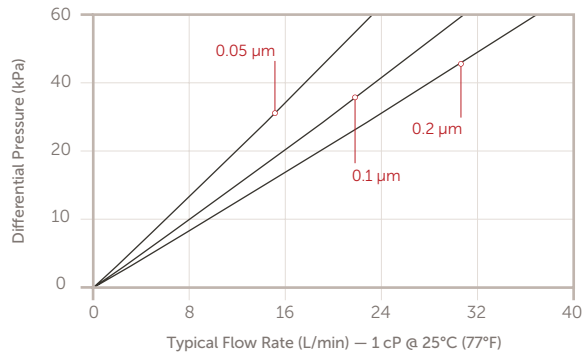
Impact Plus V2 Asymmetric UPE



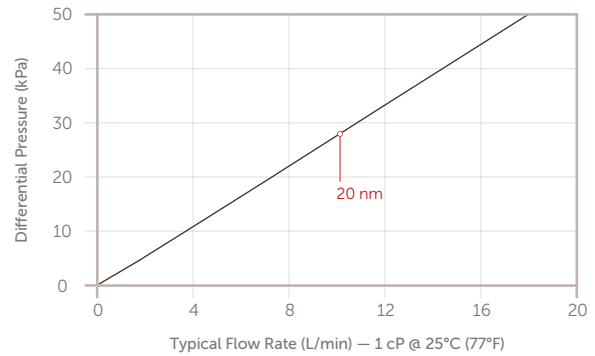
Impact Plus Duo



Impact Plus V2 UPE



Impact SR LHVD

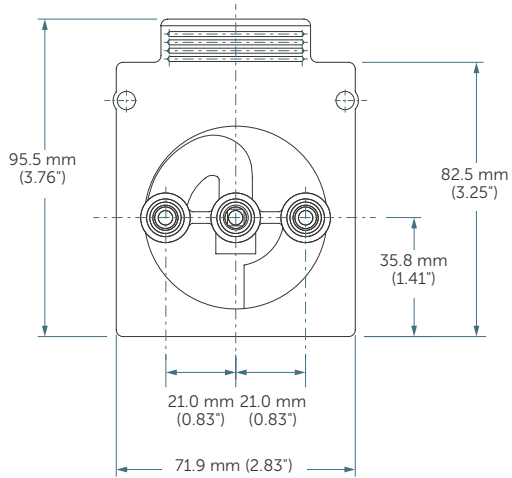




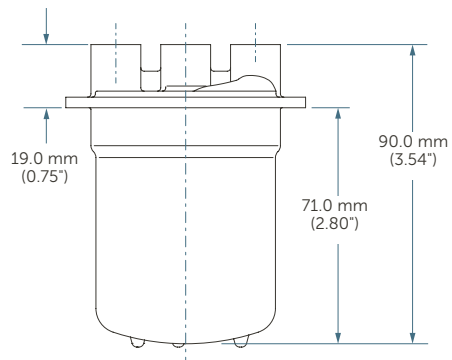
## DIMENSIONS

### Impact Plus V2, Impact Plus Duo, Impact SR LHVD Filters

Top View

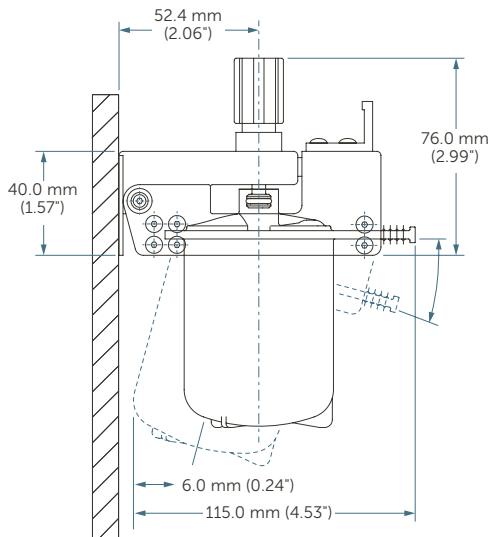


Side View

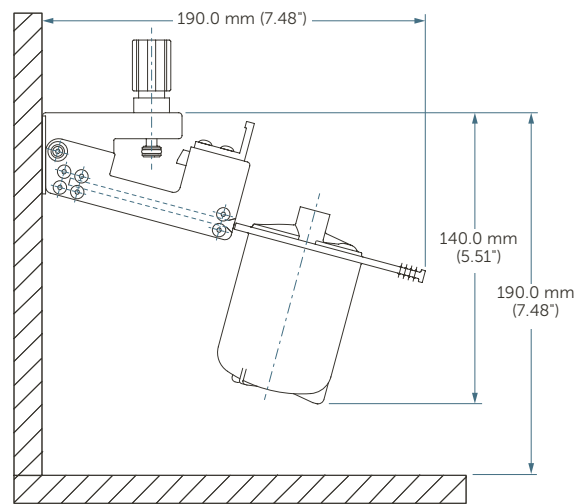


### Impact Plus V2, Impact Plus Duo, Impact SR LHVD Filters with Impact ST Manifold

Side View



Side View with required filter changeout space for filters



## ORDERING INFORMATION

### Impact Plus V2 Filters

Part number	Membrane	Retention rating	O-ring
APAG20001	UPE	0.2 µm	OM
APAG200K1	UPE	0.2 µm	OF Kalrez
APAT20M01	UPE	10 nm	OM
APAT20MK1	UPE	10 nm	OF Kalrez
APAV20001	UPE	0.1 µm	OM
APAV200K1	UPE	0.1 µm	OF Kalrez
APAX20M01	UPE	20 nm	OM
APAX20MK1	UPE	20 nm	OF Kalrez
APAZ20001	UPE	0.05 µm	OM
APAZ200K1	UPE	0.05 µm	OF Kalrez
APDT20001	Duo	10 nm	OM
APDT200K1	Duo	10 nm	OF Kalrez
APDY20001	Duo	0.03 µm	OM
APDY200K1	Duo	0.03 µm	OF Kalrez
APMX20M01	PCM	20 nm	OM
APMX20MK1	PCM	20 nm	OF Kalrez
APNT20001	Nylon	10 nm	OM
APNT200K1	Nylon	10 nm	OF Kalrez
APNX20001	Nylon	20 nm	OM
APNX200K1	Nylon	20 nm	OF Kalrez
APNZ20001	Nylon	0.05 µm	OM
APNZ200K1	Nylon	0.05 µm	OF Kalrez
APSF20M01	Asymmertic UPE	5 nm	OM
APSF20MK1	Asymmertic UPE	5 nm	OF Kalrez
APSK20M01	Asymmertic UPE	3 nm	OM
APSK20MK1	Asymmertic UPE	3 nm	OF Kalrez
APST20M01	Asymmertic UPE	10 nm	OM
APST20MK1	Asymmertic UPE	10 nm	OF Kalrez
APUA20001	UPE	1.0 µm	OM
APUA200K1	UPE	1.0 µm	OF Kalrez

## ORDERING INFORMATION

### Impact SR LHVD Filters

Part number	Description	Membrane	Retention rating	O-ring
ATFA000K1	IMPACT SR LHVD OF 1.0UM KALREZ	PTFE	1.0 µm	OF Kalrez
ATFG00001	IMPACT SR LHVD 0.2UM	PTFE	0.2 µm	OM
ATFV00001	IMPACT SR LHVD 0.1UM	PTFE	0.1 µm	OM
ATFV000K1	IMPACT SR LHVD OF 0.1UM KALREZ	PTFE	0.1 µm	OF Kalrez
ATFZ00001	IMPACT SR LHVD 0.05UM	PTFE	0.05 µm	OM
ATFZ000K1	IMPACT SR LHVD OF 0.05UM KALREZ	PTFE	0.05 µm	OF Kalrez
ATTX00001	IMPACT SR LHVD TR 20NM	PTFE	20 nm	OM

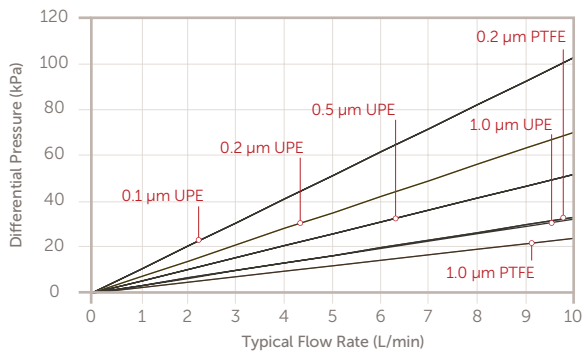
# Impact HV Filters

## SPECIFICATIONS

<b>Materials</b>	Membrane	UPE, PTFE	
	Surface area	3400 cm <sup>2</sup> (3.66 ft <sup>2</sup> )	
	Supports, core, sleeve	HDPE	
	O-ring	Kalrez perfluoroelastomer	
<b>Retention rating</b>	UPE	0.1 μm, 0.2 μm, 0.5 μm, 1.0 μm	
	PTFE	0.2 μm, 1.0 μm	
<b>Maximum operating conditions</b>	Maximum inlet pressure:	0.34 MPa (3.4 bar, 50 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)	
<b>Available manifold connections</b>	Dispense system — IntelliGen HV two-stage dispense system		
	Standalone (Optimizer ST2 manifold)	Inlet/outlet	1/4", 3/8", and 1/2" Flowell 60 1/4", 3/8", 1/2" and 6 mm tube stubs
		Vent/drain	1/4" Flowell 60 1/4" and 4 mm tube stubs

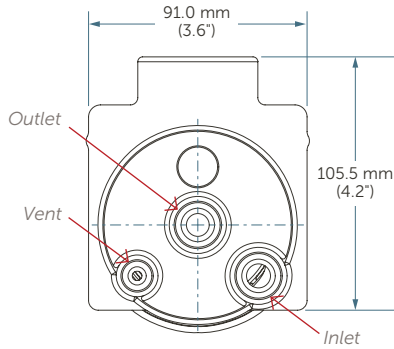
## PERFORMANCE DATA

### Impact HV Filters

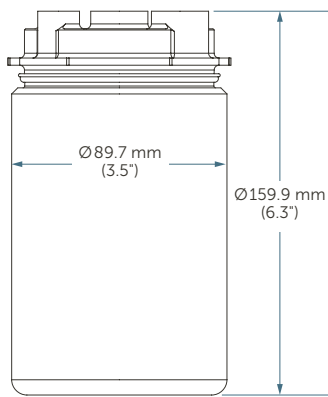


## DIMENSIONS

### Top View



### Side View



## ORDERING INFORMATION

### Impact HV filters

Part Number	Description
ATAG0LKM1	Impact HV PTFE 0.2 $\mu\text{m}$ OF Kalrez O-ring
ATAA0LKM1	Impact HV PTFE 1.0 $\mu\text{m}$ OF Kalrez O-ring
AWAV0LK1	Impact HV UPE 0.1 $\mu\text{m}$ OF Kalrez O-ring
AWAG0LK1	Impact HV UPE 0.2 $\mu\text{m}$ OF Kalrez O-ring
AWAA0LKM1	Impact HV UPE 1.0 $\mu\text{m}$ OF Kalrez O-ring
AWAH0LKM1	Impact HV UPE 0.5 $\mu\text{m}$ OF Kalrez O-ring

## FOR MORE INFORMATION

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