



IMPACT® POINT-OF-USE PHOTOCHEMICAL FILTERS

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



superior retention performance for point-of-use photochemical filtration

Overview

The Impact® point-of-use photochemical filters represent years of in-fab production expertise and customer collaboration. Entegris is committed to developing advanced filtration products that improve customer processes and overall operational efficiency. Impact filters offer workable solutions that lower startup costs and minimize cost of ownership for existing process lines, leading to superior performance, reduced downtime and improved ease of use.

LESS HANDLING, MORE CLEANLINESS AND SAFETY

Impact filters provide ultra cleanliness when used in critical chemical processes and use the Connectology® technology to quickly connect and seal with the Impact manifold and IntelliGen® dispense systems. Impact filters provide rapid filter changeout while eliminating the handling of the filter element. The optimized surface area and hold up volume reduce chemical usage and exposure to hazardous chemicals during the filter's installation and disposal and promote a safer working environment.

INNOVATIVE FILTER TECHNOLOGY

Impact membrane and filter designs provide superior filtration alternatives that solve customer problems. The Impact 8G core-fill construction reduces filter startup costs and filter priming time, resulting in a more rapid return to a stable, repeatable production environment with lower defectivity. The Impact Duo technology removes difficult contaminants from specific resists where

a single retention technology will not meet the requirements. The combination of the UPE membrane with a polyamide or nylon layer in the Impact Duo technology provides maximum chemical compatibility and extends the lifetime of the filter. The Impact RFID filter and manifold technology enables online monitoring of filters installed at any given time in a particular coater or coater cup and ensures that the correct filter is installed in the correct cup/chemistry.

VARIETY OF FILTRATION FORMATS

Impact filters are available in several formats that remove particles and prevent microbubble formation in the most demanding photochemical applications. They incorporate various membrane technologies that satisfy critical process needs and meet superior retention requirements. The asymmetric UPE membrane design promotes tighter retention with a lower pressure drop when compared to a standard symmetrical UPE membrane. The PTFE pleated membrane, combined with the PFA construction, provides maximum chemical compatibility and can be used with all chemicals including aromatics and ketone solvents. At two times the performance of existing nylon filters, Entegris' nylon membrane's improved flow eliminates previous risks associated with tighter nylon retention filtration. 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.

The following table summarizes Impact filter attributes.

Impact Filter Attributes

Filter Series	Filter Type	Membrane	Retention	Applications*
Impact 8G	Impact 8G Impact 8G-L	Asymmetric UPE	3, 5, 10 nm	POU photoresist, ancillary photochemicals and solvent filtration
		Nylon 6	10 nm	
		Duo	5, 10 nm	
		PCM (surface modified hydrophilic UPE)	10 nm	
Impact 2 V2	Impact Asymmetric Nylon	Nylon 6	10, 20, 50 nm	POU photoresist, ancillary photochemicals and solvent filtration
	Impact 2 V2 UPE	UPE	3 nm–1 µm	POU photoresist, ancillary photochemicals and solvent filtration
	Impact 2-Duo	Sieving layers: UPE	5, 10, 30 nm	POU photoresist, ancillary photochemicals and solvent filtration
		Nonsieving layers: Nylon 6		
Impact 2 V2 Asymmetric PCM	Surface modified UPE	20 nm, 0.05 µm	Aqueous chemicals for photolithography	
Impact Plus V2	Impact Plus V2	UPE	3 nm–1 µm	POU photoresist, ancillary photochemicals and solvent filtration
	Impact Plus-Duo	Nonsieving layers: Nylon 6	10, 30 nm	POU photoresist, ancillary photochemicals and solvent filtration
		Sieving layers: UPE		
	Impact Plus Nylon	Nylon 6	10, 20, 50 nm	POU photoresist, ancillary photochemicals and solvent filtration
	Impact Plus PCM	Surface modified UPE	20 nm–0.05 µm	Aqueous chemicals for photolithography
Impact SR-LHVD	PTFE	20 nm–1 µm	Aggressive solvents	
Impact Mini	Impact Asymmetric Mini	UPE	5 nm–0.1 µm	POU Photoresist, ancillary photochemicals and solvent filtration
Impact HV	Impact high viscosity	UPE, PTFE	0.5, 1.0 µm	Polyimide process; wafer level packaging; 3-D lithography

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

Features and Benefits

Features	Benefits
Superior retention	<p data-bbox="621 369 1487 422">Available to 3 nm, Entegris' UPE asymmetric membranes promote tighter retention with a lower pressure drop when compared to a standard symmetrical UPE membrane.</p> <p data-bbox="621 432 1487 531">The Impact Duo technology utilizes dual retention mechanisms. The UPE membrane with nylon layer maximizes sieving and nonsieving retention capabilities, thereby reducing advanced process defects caused by gels, particles and/or molecular polymers in some advanced chemistries.</p> <p data-bbox="621 541 1487 594">The nylon design increases membrane contact time, thereby improving gel retention performance at a 10 nm retention rating for market-leading contamination control.</p>
Innovative filter technologies	<p data-bbox="621 604 1487 657">The Impact family of filter products provides a diverse and innovative portfolio of solutions that tackle the most demanding industry challenges.</p> <p data-bbox="621 667 1487 695">The Impact 8G core-fill construction reduces overall filter priming time and startup costs.</p> <p data-bbox="621 705 1487 758">The Impact Duo technology removes difficult contaminants from specific resists where a single retention technology will not meet the requirements.</p> <p data-bbox="621 768 1487 814">The Impact RFID filter and manifold technology, combined with IntelliGen AFS, enables online monitoring of filters installed at any given time in a particular coater or coater cup.</p>
Low hold up volume	<p data-bbox="621 825 1487 850">The low hold-up volume reduces chemical waste and lowers cost of ownership.</p>
Quick filter installation	<p data-bbox="621 861 1487 913">The advanced design limits the handling of hazardous chemicals during the installation and disposal processes.</p>

Impact 8G and 8G-L Filters

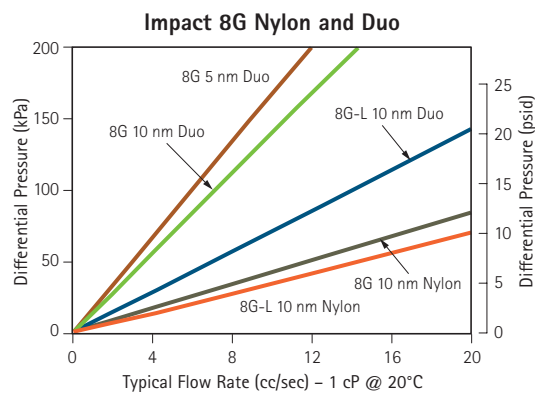
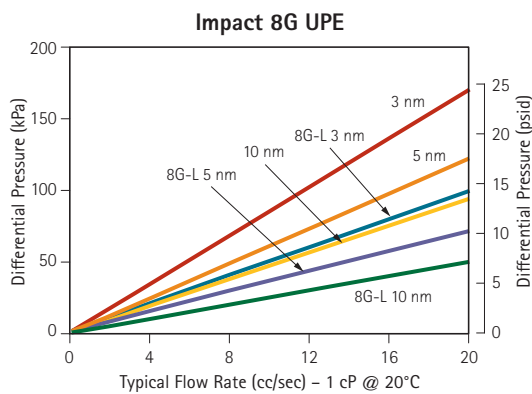
Specifications

Materials:	Membrane	UPE, nylon, Duo (UPE/nylon, PCM)		
	Surface area	8G	UPE	1200 cm ² (1.29 ft ²)
			Nylon/Duo	800 cm ² (0.86 ft ²)
			PCM	1300 cm ² (1.40 ft ²)
		8G-L	Nylon/Duo	1600 cm ² (1.72 ft ²)
			UPE	2400 cm ² (2.58 ft ²)
			PCM	2600 cm ² (2.80 ft ²)
	Supports, core shell	HDPE		
	O-ring	Kalrez® perfluoroelastomer (OF)		
Maximum operating conditions:	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)		
Hold up volume:	Impact 8G	55 cc		
	Impact 8G-L	110 cc		
Compatibility:*	PGMEA, PGME, NMP, ethyl lactate, MMP, cyclohexanone and other photochemical solvents.			
Wettability:*	Spontaneously wets in butyl acetate, PGMEA, PGME, ethyl lactate, MMP, cyclohexanone, ECA and other photochemical solvents.			
Fittings: (uses Impact 2 Manifold**)	4 mm/3 mm Flowell™ 60 Type for OF filters			
	5 mm/3 mm Flowell 60 Type for OF filters			
	6 mm/4 mm Flowell 60 Type for OF filters			
	6.35 mm/3.95 mm Flowell 60 Type for OF filters			
	6.35 mm/4.35 mm Flowell 60 Type for OF/OM filters			
	6.35 mm/3.95 mm Super Type Pillar for OF filters			
	6.35 mm/4.35 mm Super Type Pillar for OF/OM filters			

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

**See the Impact 2 V2 Filters section for information about the Impact 2 Manifold.

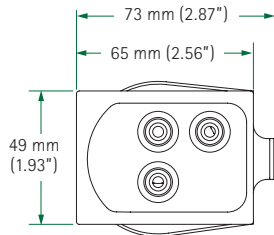
Performance Data



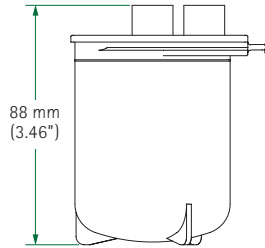
Dimensions

IMPACT 8G/8G-L

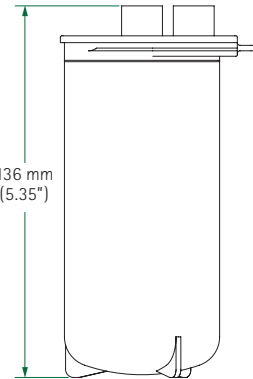
Top View: 8G, 8G-L



Side View: 8G

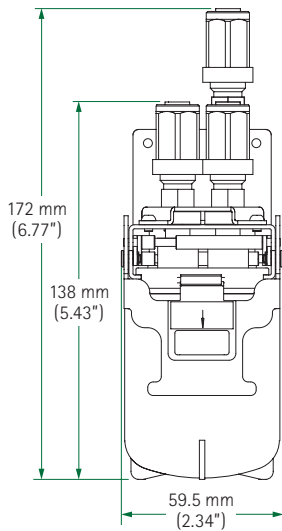


Side View: 8G-L

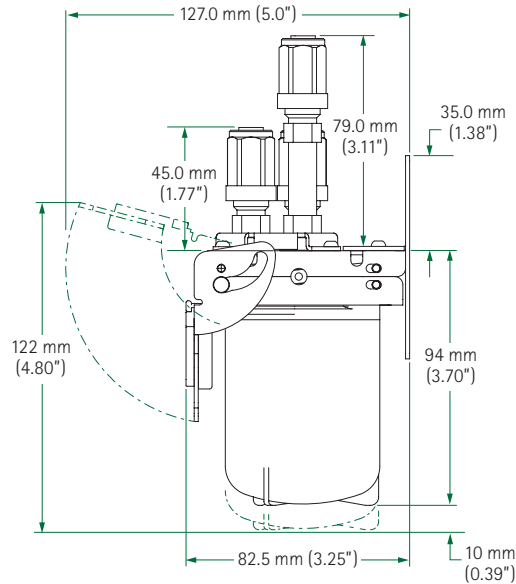


IMPACT 8G WITH MANIFOLD

Front View



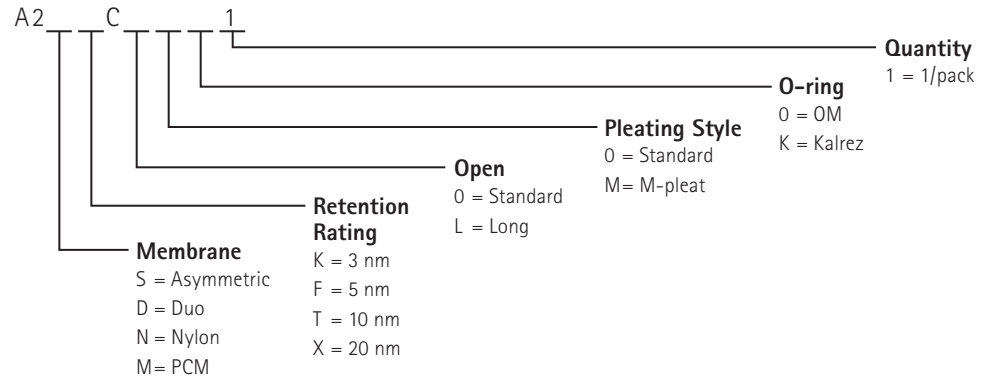
Side View



Ordering Information*

Impact 8G and 8G-L Filters

Part Number



*This information serves as a guide. Please contact your local representative to confirm part numbers.

Impact 2 V2 Filters

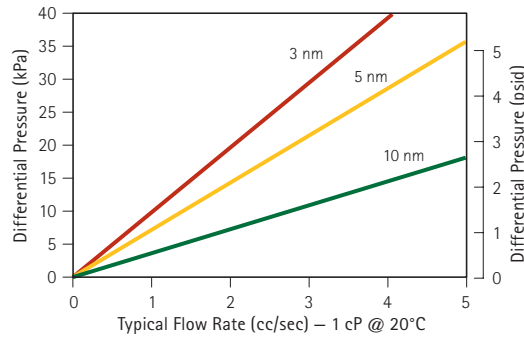
Specifications

Materials:	Membrane	UPE, nylon, Duo (UPE/nylon), PCM	
	Surface area	Asymmetric nylon	800 cm ² (0.86 ft ²)
		Asymmetric PCM	1350 cm ² (1.45 ft ²)
		Duo, nylon	800 cm ² (0.86 ft ²) 850 cm ² (0.92 ft ²)
	Supports (upstream, downstream, mold)	HDPE	
	O-ring	Kalrez perfluoroelastomer	
Maximum operating conditions:	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)	
Hold up volume:	≤55 cc		
Compatibility:*	PGMEA, PGME, NMP, ethyl lactate, MMP and cyclohexanone. Not recommended for use with photochemicals containing aromatic hydrocarbons.		
Wettability:*	Spontaneously wets in butyl acetate, PGMEA, PGME, ethyl lactate, MMP, cyclohexanone, ECA, NMP and other photochemical solvents.		
Fittings: (uses Impact 2 Manifold)	4 mm/3 mm Flowell 60 Type for OF filters		
	5 mm/3 mm Flowell 60 Type for OF filters		
	6 mm/4 mm Flowell 60 Type for OF filters		
	6.35 mm/3.95 mm Flowell 60 Type for OF filters		
	6.35 mm/4.35 mm Flowell 60 Type for OF/OM filters		
	6.35 mm/3.95 mm Super Type Pillar for OF filters		
	6.35 mm/4.35 mm Super Type Pillar for OF/OM filters		

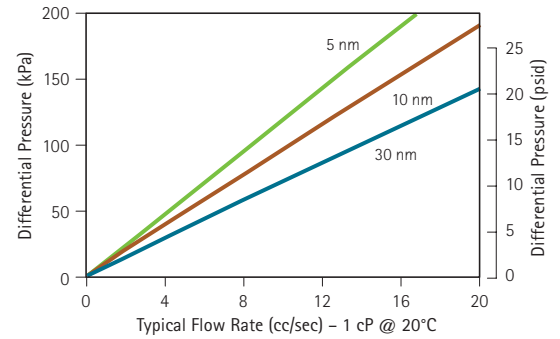
*Please contact your Regional Customer Service Center for specific recommendations.

Performance Data

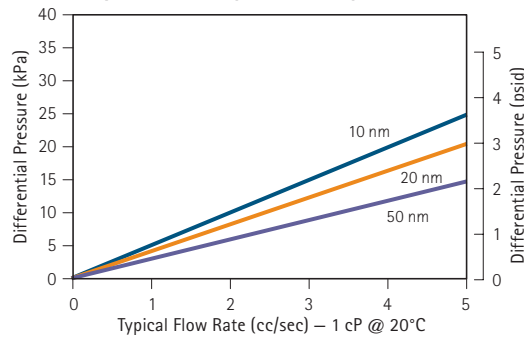
Impact 2 V2 Asymmetric UPE Filters



Impact 2-Duo

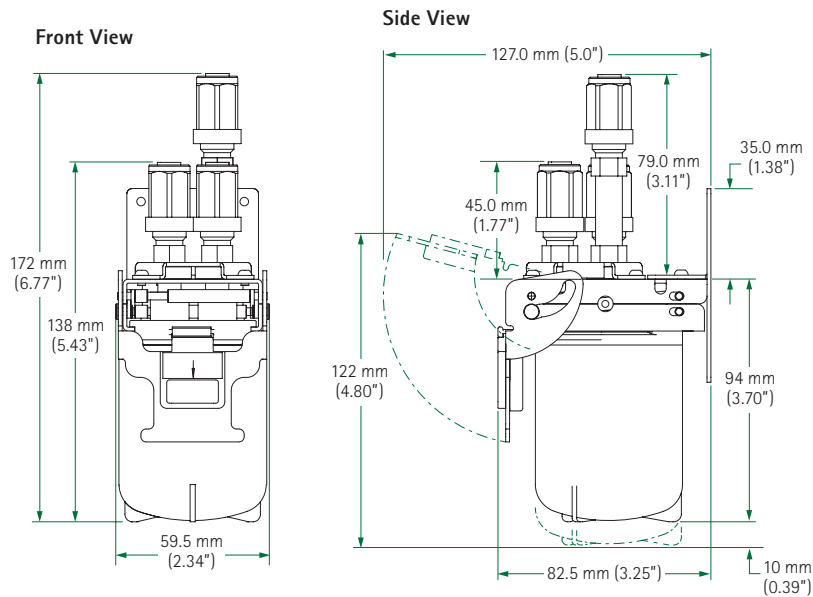


Impact 2 V2 Asymmetric Nylon Filters

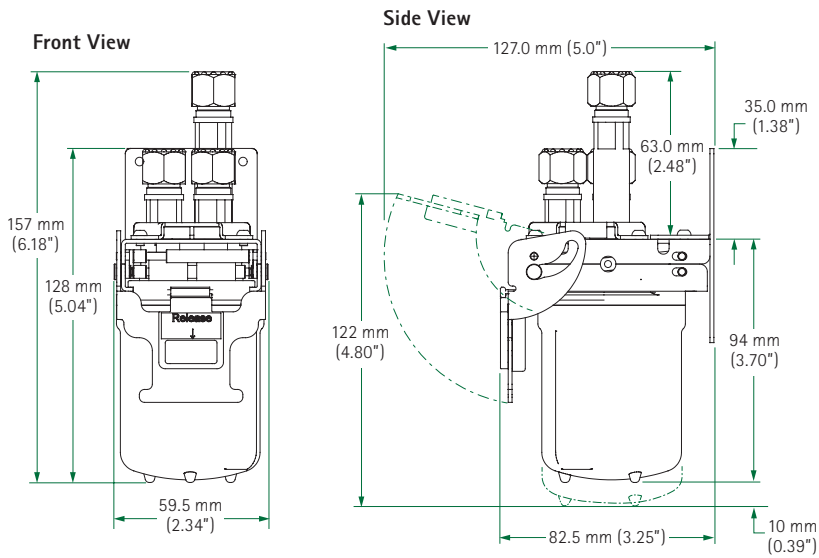


Dimensions

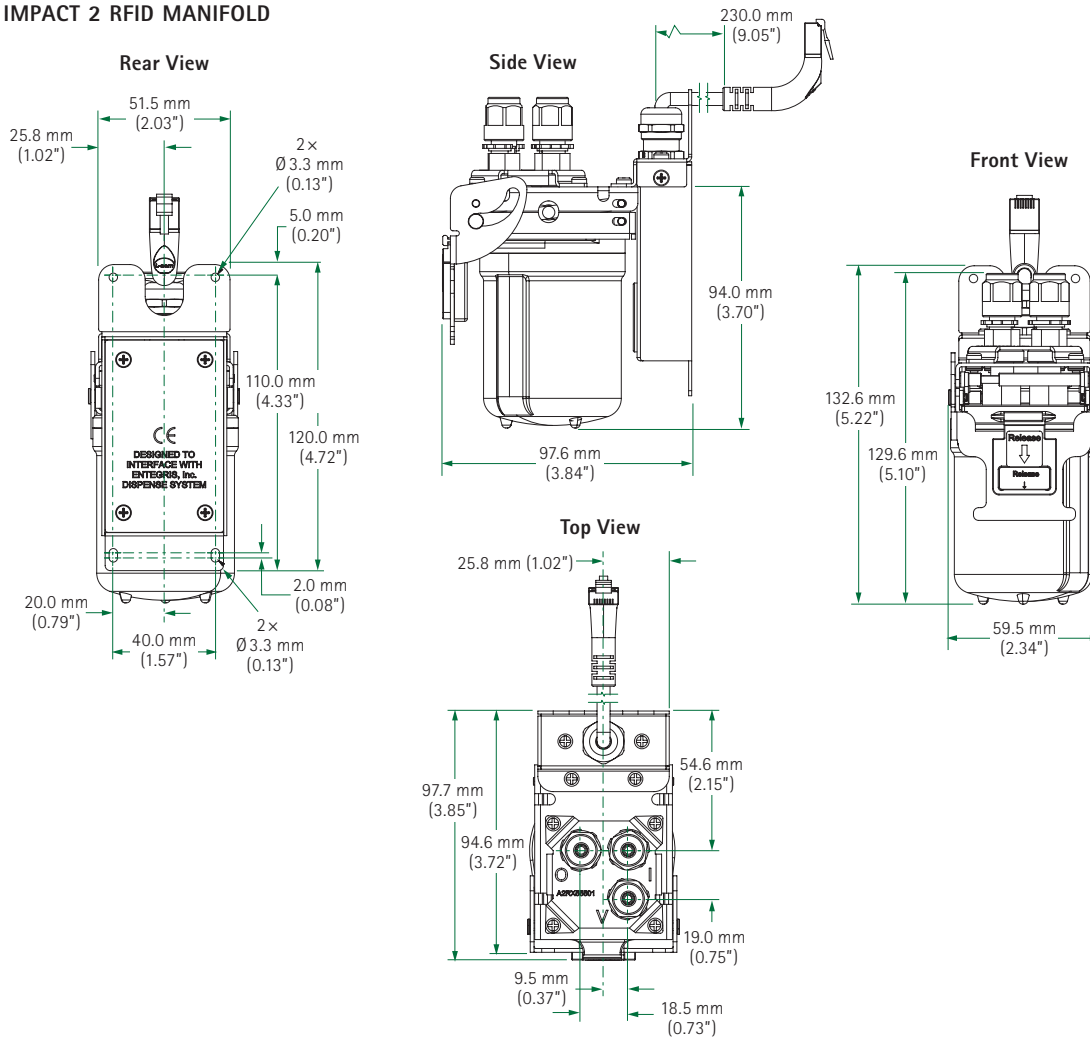
IMPACT 2 V2 FILTER WITH IMPACT 2 MANIFOLD – 6.35 MM FLOWELL 60 TYPE



IMPACT 2 V2 FILTER WITH IMPACT 2 MANIFOLD – 6.35 MM SUPER TYPE PILLAR



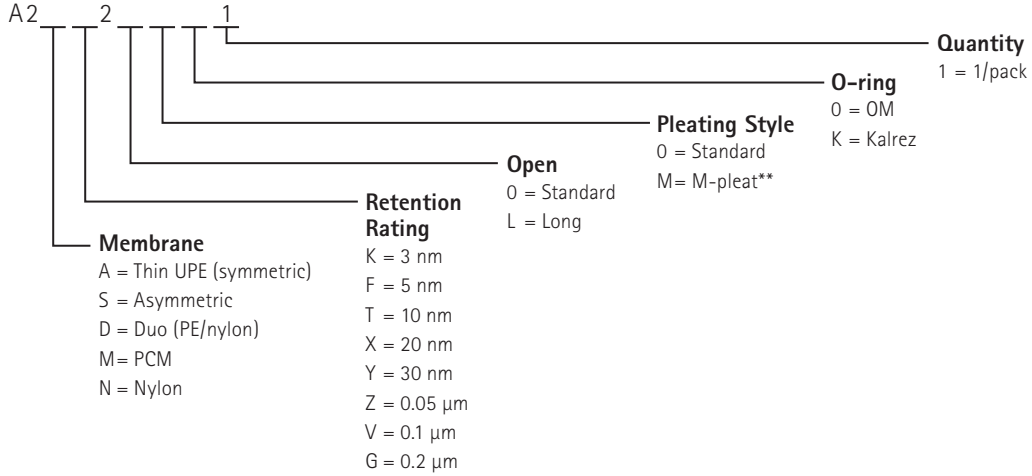
IMPACT 2 RFID MANIFOLD



Ordering Information*

Impact 2 V2 Filters

Part Number



**The M-pleat style only applies to Impact filters with a UPE membrane of up to 30 nm.

Impact 2 Manifolds (for Impact 8G and Impact 2 V2), Impact 2 RFID Manifolds

Part Number	Description
A2MX222K1	Impact 2 manifold, Flowell 60, 6.35 mm OD and 3.95 mm ID, Kalrez o-ring (for OM filters)
A2MX22201	Impact 2 manifold, Flowell 60, 6.35 mm OD and 3.95 mm ID, no o-ring (for OF filters)
A2MX222KT	Impact 2 manifold, Flowell 60, 6.35 mm OD and 4.35 mm ID, Kalrez o-ring (for OM filters)
A2MX222ET	Impact 2 manifold, Flowell 60, 6.35 mm OD and 4.35 mm ID, EPDM o-ring (for OM filters)
A2MX2220T	Impact 2 manifold, Flowell 60, 6.35 mm OD and 4.35 mm ID, no o-ring (for OF filters)
A2MX44401A	Impact 2 manifold, Flowell 60, 4 mm OD and 3 mm ID, no o-ring (for OF filters)
A2MX55501A	Impact 2 manifold, Flowell 60, 5 mm OD and 3 mm ID, no o-ring (for OF filters)
A2MX66601A	Impact 2 manifold, Flowell 60, 6 mm OD and 4 mm ID, no o-ring (for OF filters)
A2MP222K1	Impact 2 manifold, Super Type Pillar, 6.35 mm OD and 3.95 mm ID, Kalrez o-ring (for OM filters)
A2MP222KT	Impact 2 manifold, Super Type Pillar, 6.35 mm OD and 4.35 mm ID, Kalrez o-ring (for OM filters)
A2MP22201	Impact 2 manifold, Super Type Pillar, 6.35 mm OD and 3.95 mm ID, no o-ring (for OF filters)
A2MP2220T	Impact 2 manifold, Super Type Pillar, 6.35 mm OD and 4.35 mm ID, no o-ring (for OF filters)
A2RX55501	Impact 2 RFID manifold, Flowell 60, 5 mm OD and 3 mm ID, no o-ring (for OF filters)
A2RX66601	Impact 2 RFID manifold, Flowell 60, 6 mm OD and 4 mm ID, no o-ring (for OF filters)

* This information serves as a guide. Please contact your local representative to confirm part numbers.

Impact Plus V2, Plus Duo and Impact SR LHVD Filters

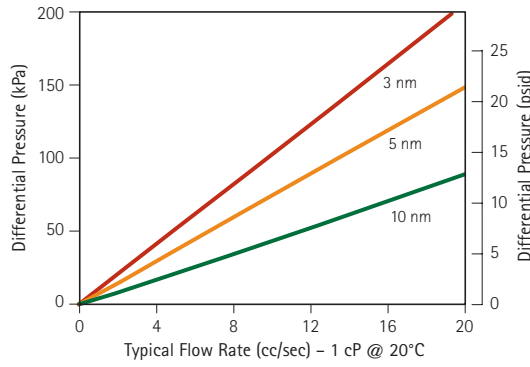
Specifications

		Impact Plus V2	Impact Plus Duo	Impact SR LHVD
Materials:	Membrane	UPE, nylon, PCM	UPE/nylon	PTFE
	Surface area	10 nm asymmetric 1300 cm ² (1.46 ft ²)	850 cm ² (0.92 ft ²)	600 cm ² (0.65 ft ²)
		10 nm, 20 nm 1400 cm ² (1.51 ft ²)		
		0.05 µm PCM 1300 cm ² (1.40 ft ²)		
		20 nm PCM 1400 cm ² (1.51 ft ²)		
		All others 1200 cm ² (1.29 ft ²)		
	Supports and molded components	HDPE		—
Supports, core, sleeve, shell	—		PFA	
O-ring	Kalrez perfluoroelastomer			
Maximum operating conditions:	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)
Hold up volume:	≤55 cc		≤45 cc	
Compatibility:*	PGMEA, PGME, NMP, ethyl lactate, MMP and cyclohexanone. Not recommended for use with photochemicals containing aromatic hydrocarbons.		All photochemical solvents	
Wettability:*	Spontaneously wets in butyl acetate, PGMEA, PGME, ethyl lactate, MMP, ECA, NMP and other photochemical solvents.		Prewetting should be considered with higher surface tension solvents such as NMP, cyclohexanone, GBL, EGMEA ethyl lactate and MMP.	
Fittings: (uses Impact 2 Manifold)	1/4" Flaretek®			

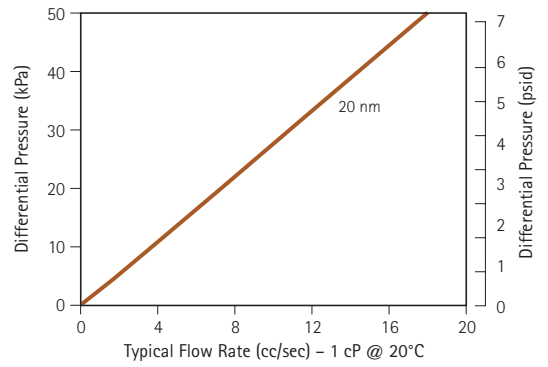
*Please contact your Regional Customer Service Center for specific recommendations.

Performance Data

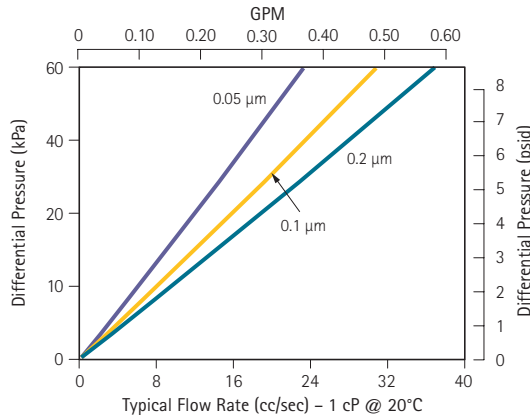
Impact Plus V2 Asymmetric UPE



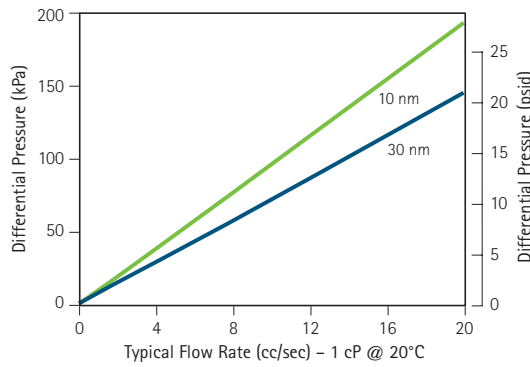
Impact SR LHVD



Impact Plus V2 UPE



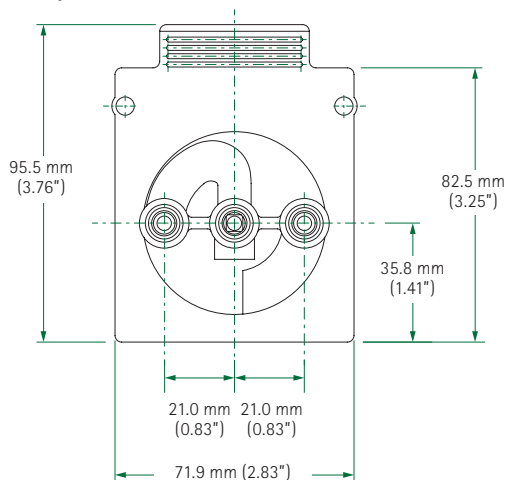
Impact Plus Duo



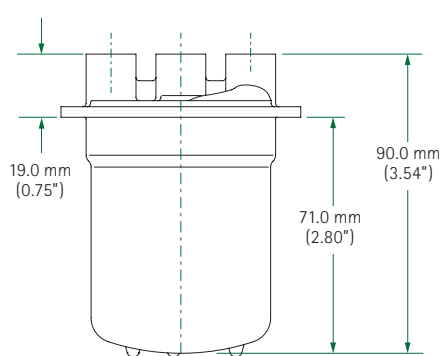
Dimensions

IMPACT PLUS V2, IMPACT PLUS DUO, IMPACT SR LHVD FILTERS

Top View

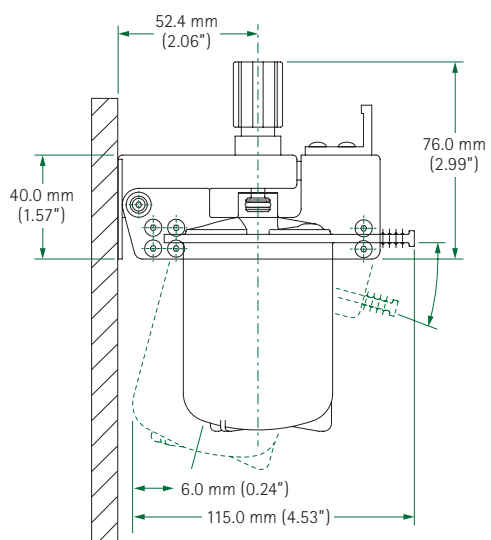


Side View

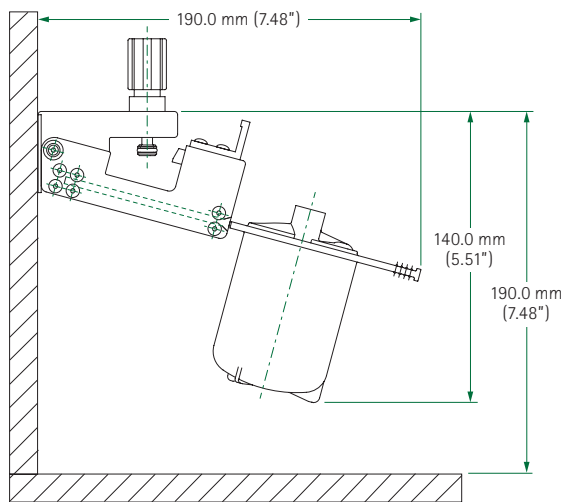


IMPACT PLUS V2, IMPACT PLUS DUO, IMPACT SR LHVD FILTERS WITH IMPACT ST MANIFOLD

Side View



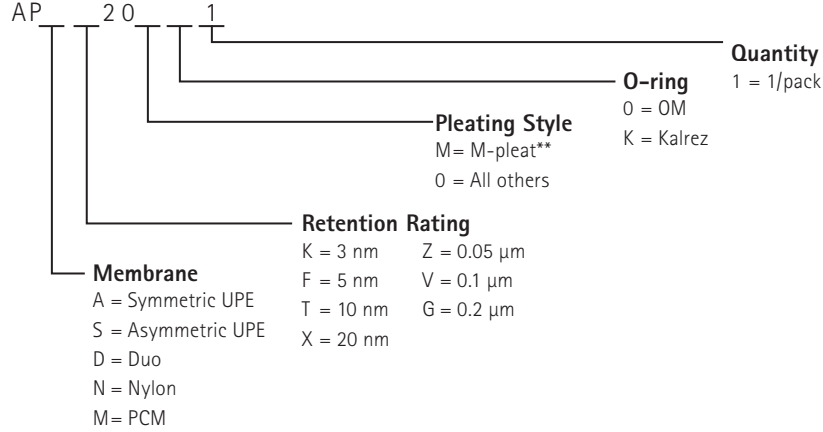
Side View with required filter changeout space for filters



Ordering Information*

Impact Plus V2 Filters

Part Number



*This information serves as a guide. Please contact your local representative to confirm part numbers.

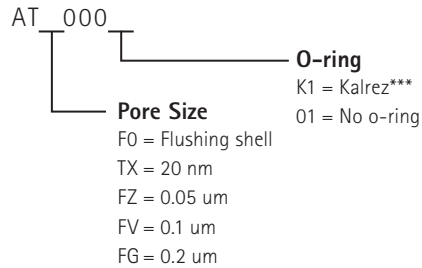
**The M-pleat style only applies to Impact filters with a UPE membrane of up to 30 nm.

Impact ST Manifolds

Part Number	Description
DZUM 044 C1	Impact ST manifold
DZUM 044 E1	Impact ST manifold, no o-ring

Impact SR LHVD Filters

Part Number



*** Flushing shell and 0.05 μm only.

Impact Mini Filters

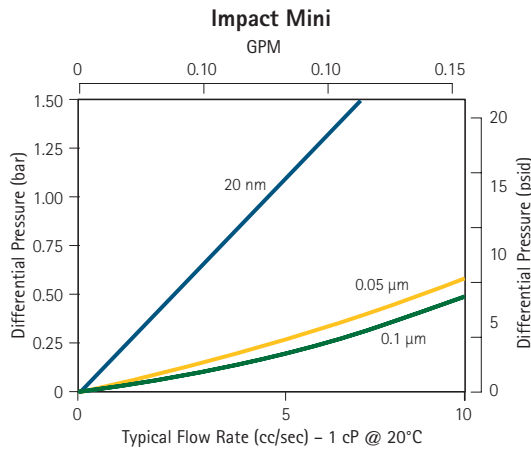
Specifications

Materials:	Membrane	UPE
	Surface area	250 cm ² (0.27 ft ²)
	Supports (upstream, downstream, mold)	HDPE
	O-ring	Kalrez perfluoroelastomer (on filter)
Maximum operating conditions:	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)
Hold up volume:	≤15 cc	
Compatibility:*	PGMEA, PGME, NMP, ethyl lactate, MMP and cyclohexanone. Not recommended for use with photochemicals containing aromatic hydrocarbons.	
Wettability:*	Spontaneously wets in butyl acetate, PGMEA, PGME, ethyl lactate, MMP, cyclohexanone, ECA, NMP and other photochemical solvents.	

Note: The Impact Asymmetric Mini uses a pump (Entegris IntelliGen Mini or IntelliGen ASF) instead of a manifold.

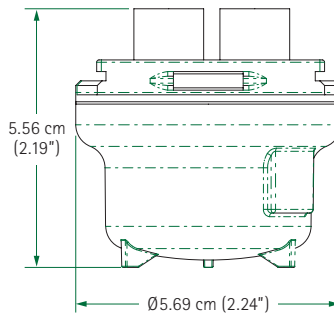
*Please contact your Regional Customer Service Center for specific recommendations.

Performance Data

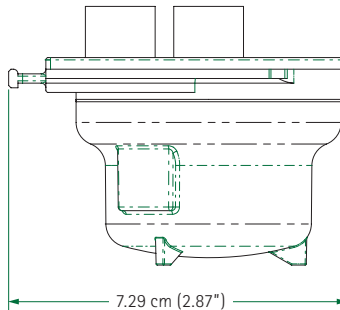


Dimensions

Front View



Side View

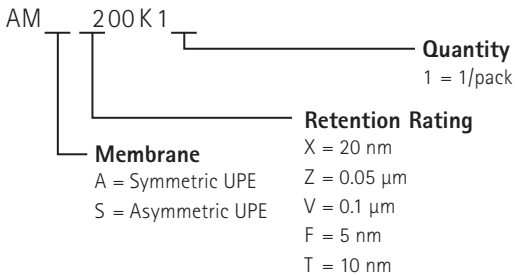


Note: The top view dimensions of Impact Mini are the same as Impact 2 V2.

Ordering Information**

Impact Mini Filters

Part Number



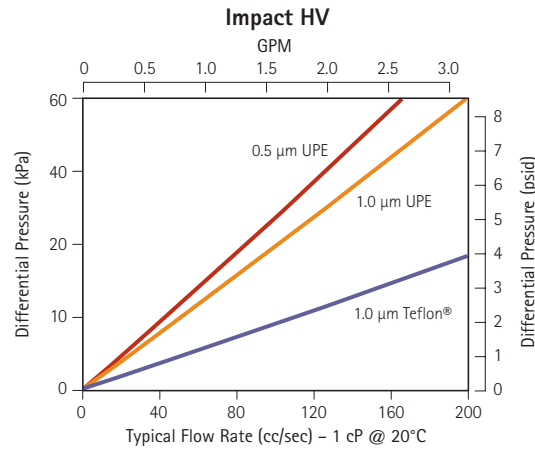
**This information serves as a guide. Please contact your local representative to confirm part numbers.

Impact HV Filters

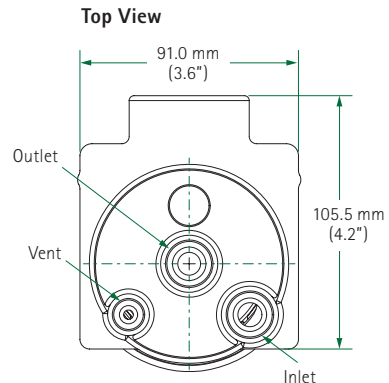
Specifications

Materials:	Membrane	UPE, PTFE	
	Surface area	3400 cm ² (3.66 ft ²)	
	Supports, core, sleeve	HDPE	
	O-ring	Kalrez perfluoroelastomer	
Maximum operating conditions:	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)	
Available manifold connections:	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	

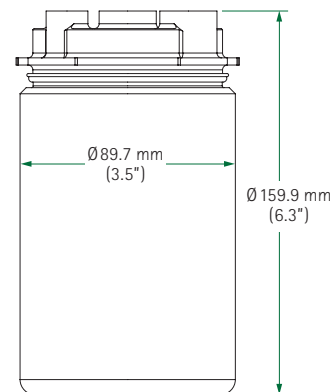
Performance Data



Dimensions



Side View



Ordering Information

Impact HV Filters

Part Number	Description
ATAAOLKM1	Impact HV PTFE 1.0 µm OF Kalrez o-ring
AWAAOLKM1	Impact HV 1.0 µm OF Kalrez o-ring
AWAHOLKM1	Impact HV 0.5 µm OF Kalrez o-ring

For More Information

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