

saes
group

SAES Pure Gas

The Technology of Pure Gas

AMBIENT INLINE PURIFIER 702 PURIFICATION MEDIA SPECIFICATION



**0 – 1,000 slpm Ambient Inline Purifiers.
For consistent gas quality and
Impurity removal to pptV levels.**

MicroTorr Ambient Inline Purifiers:

MicroTorr purifiers are the most complete and reliable solution for Point-of-Use (POU) gas purification. Combining model size with a selection of gas-specific purification materials, MicroTorr purifiers can be tailored to many different customer applications, while maintaining impurity removal to Part-Per-Billion (ppbV) levels or better. Optional valves and a 0.003 micron particle filter are available as well as custom subsystem configurations.

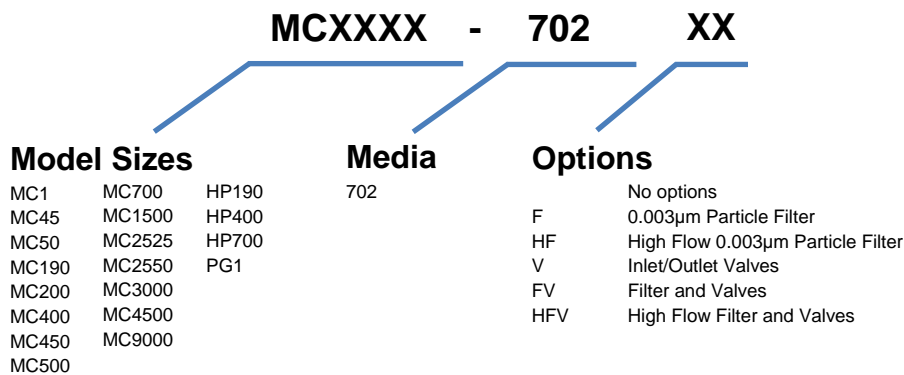
Competitive Advantages and Benefits:

- **Reliability:** Uncompromised process consistency and yield improvement.
- **Performance:** State-of-the-art purification technology, low pressure drop, and long lifetimes.
- **Regenerability:** Most MicroTorr media are factory regenerable, minimizing potentially hazardous waste.
- **Quality:** 316L stainless steel, Helium leak checked, and analytical testing to part-per-trillion (pptv) levels.
- **Support:** Lifetime estimation and regeneration service available through SAES Pure Gas Sales Network.

702 Media Purifier Properties

Gases Purified	NH3, C2H7N, C2H8N2, C2H4, C3H6, CH3SiH3, GeH4, SF6, SiH4, H2/SiH4 mixtures
Impurities Removed	H2O, O2, CO2, NMHCs, Metals to < 1 ppb
Particle Filtration	2 micron or 0.003 micron metal
Vessel construction	Stainless Steel 316L, electropolished to 10 Ra
Installation Orientation	Vertically with flow downward. Consult factory for other orientations.
Leak Rating	1 x 10 ⁻⁹ atm cc/sec of He
Operating temperature	-20 to 65 °C (-4 to 149°F) Lifetime may be effected at higher temperatures
Lifetime	Contact SAES Pure Gas for application specific lifetime calculations
Regenerability	Regenerable at SAES Pure Gas Regeneration Centers
Certification	CE Certified to the Pressure Equipment Directive (PED) Designed in accordance with ASME

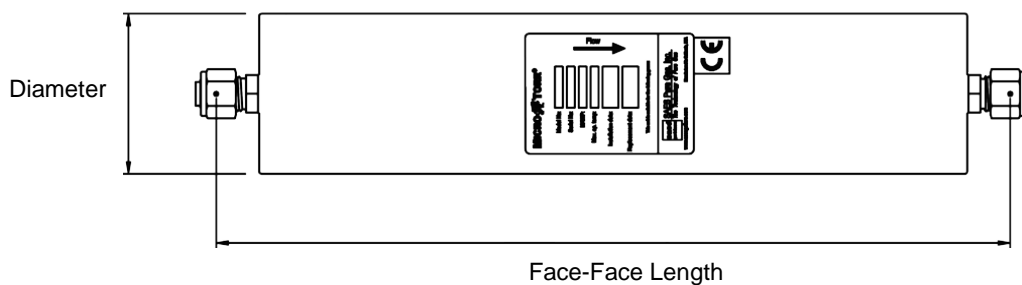
Part Number Configuration:



Purifier Sizes

Part Number	Maximum Flow (slpm)	Average Flow (slpm)	Operating Pressure (psig) Must be in gas phase	Inlet Connection	Outlet Connection	Diameter (inches [mm])	Face to Face Length (inches [mm])	Weight (lb. [kg])
Standard Models								
MC1-702F	5	0.5	1,000	1/4" MVCR	1/4" MVCR	1.5 [38.1]	3.31 [84.1]	< 0.7 [0.3]
MC45-702 MC45-702F	10	1.5	1,000	1/4" MVCR	1/4" MVCR	1.5 [38.1]	4.50 [114.3]	< 0.9 [0.4]
MC50-702F	10	1.5	1,000	1/4" MVCR	1/4" MVCR	1.5 [38.1]	5.00 [127.0]	< 0.9 [0.4]
MC190-702F	50	5	250	1/4" MVCR	1/4" MVCR	2.0 [50.8]	8.20 [208.3]	< 1.6 [0.7]
MC200-702F	50	5	250	1/4" MVCR	1/4" MVCR	2.0 [50.8]	6.30 [160.0]	< 1.8 [0.8]
MC400-702F	60	9	250	1/4" MVCR	1/4" MVCR	3.0 [76.2]	8.20 [208.3]	< 4.9 [2.2]
MC450-702F	75	10	250	1/4" MVCR	1/4" MVCR	3.0 [76.2]	7.94 [201.7]	< 4.1 [1.8]
MC500-702F	100	12	250	1/4" MVCR	1/4" MVCR	2.0 [50.8]	12.50 [317.5]	< 2.8 [1.2]
MC700-702F	120	25	250	1/4" MVCR	1/4" MVCR	3.0 [76.2]	10.00 [254.0]	< 7.6 [3.4]
MC1500-702F	250	40	250	1/2" MVCR	1/2" MVCR	3.0 [76.2]	18.20 [462.3]	< 8.0 [3.6]
MC2525-702F	300	80	250	1/4" MVCR	1/4" MVCR	4.0 [101.6]	17.30 [439.0]	< 13.0 [5.9]
MC2550-702F	500	80	250	1/2" MVCR	1/2" MVCR	4.0 [101.6]	17.60 [447.0]	< 13.0 [5.9]
MC3000-702 MC3000-702F	500	80	250	1/2" MVCR	1/2" MVCR	4.0 [101.6]	20.00 [508.0]	< 14.0 [6.4]
MC4500-702F	500	200	250	1/2" MVCR	1/2" MVCR	6.0 [152.4]	27.64 [702.6]	< 43.0 [19.5]
MC4500-702 MC4500-702HF	1,000	200	250	1/2" MVCR	1/2" MVCR	6.0 [152.4]	27.64 [702.6]	< 43.0 [19.5]
MC9000-702 MC9000-702F	1,000	300	250	1/2" MVCR	1/2" MVCR	6.0 [152.4]	39.34 [999.7]	< 60.4 [27.4]
High Pressure Models								
HP190-702F	50	5	1,000	1/4" MVCR	1/4" MVCR	2.0 [50.8]	8.20 [208.3]	< 2.1 [0.9]
HP400-702F	60	9	1,000	1/4" MVCR	1/4" MVCR	3.0 [76.2]	8.20 [208.3]	< 4.9 [2.2]
HP700-702F	120	25	1,000	1/4" MVCR	1/4" MVCR	3.0 [50.8]	10.0 [254.0]	< 7.6 [3.4]

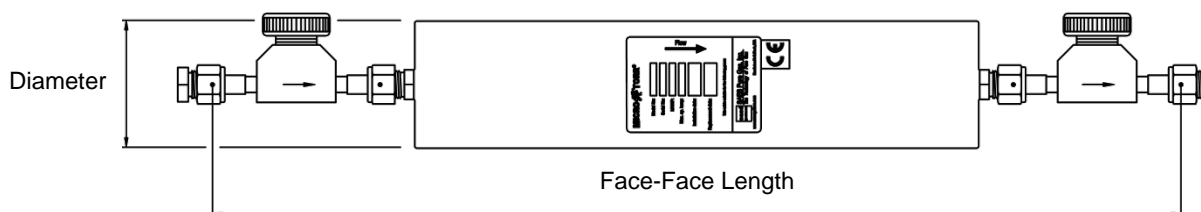
F = 0.003 micron particle filter



Purifier Sizes, with inlet and outlet isolation valves

Part Number	Maximum Flow (slpm)	Average Flow (slpm)	Operating Pressure (psig) Must be in gas phase	Inlet Connection	Outlet Connection	Diameter (inches [mm])	Face to Face Length with valves (inches [mm])	Weight with valves (lb. [kg])
Standard Models								
MC1-702FV	5	0.5	1,000	1/4" FVCR	1/4" FVCR	1.5 [38.1]	8.91 [226.3]	< 2.6 [1.2]
MC45-702V MC45-702FV	10	1.5	1,000	1/4" FVCR	1/4" FVCR	1.5 [38.1]	10.10 [256.5]	< 2.9 [1.3]
MC50-702FV	10	1.5	1,000	1/4" FVCR	1/4" FVCR	1.5 [38.1]	10.60 [269.2]	< 2.9 [1.3]
MC190-702FV	50	5	250	1/4" FVCR	1/4" FVCR	2.0 [50.8]	13.80 [350.5]	< 3.7 [1.7]
MC200-702FV	50	5	250	1/4" FVCR	1/4" FVCR	2.0 [50.8]	11.90 [302.3]	< 3.8 [1.8]
MC400-702FV	60	9	250	1/4" FVCR	1/4" FVCR	3.0 [76.2]	13.80 [350.5]	< 6.8 [3.1]
MC450-702FV	75	10	250	1/4" FVCR	1/4" FVCR	3.0 [76.2]	13.54 [343.9]	< 6.0 [2.7]
MC500-702FV	100	12	250	1/4" FVCR	1/4" FVCR	2.0 [50.8]	18.10 [459.7]	< 4.5 [2.0]
MC700-702FV	120	25	250	1/4" FVCR	1/4" FVCR	3.0 [76.2]	15.60 [396.2]	< 9.6 [4.4]
MC1500-702FV	250	40	250	1/2" FVCR	1/2" FVCR	3.0 [76.2]	28.84 [732.5]	< 12.5 [5.8]
MC2525-702FV	300	80	250	1/4" FVCR	1/4" FVCR	4.0 [101.6]	23.20 [589.0]	< 15.0 [6.8]
MC2550-702FV	500	80	250	1/2" FVCR	1/2" FVCR	4.0 [101.6]	28.20 [716.0]	< 17.7 [8.0]
MC3000-702V MC3000-702FV	500	80	250	1/2" FVCR	1/2" FVCR	4.0 [101.6]	30.64 [778.3]	< 18.7 [8.5]
MC4500-702FV	500	200	250	1/2" FVCR	1/2" MVCR	6.0 [152.4]	38.30 [972.8]	< 48.7 [22.1]
MC4500-702V MC4500-702HFV	1,000	200	250	1/2 FVCR	1/2 MVCR	6.0 [152.4]	38.30 [972.8]	< 48.7 [22.1]
MC9000-702V MC9000-702FV	1,000	300	250	1/2" FVCR	1/2" MVCR	6.0 [152.4]	50.00 [1270.0]	< 66.0 [29.9]
High Pressure Models								
HP190-702FV	50	5	1,000	1/4" FVCR	1/4" FVCR	2.0 [50.8]	13.80 [350.5]	< 4.1 [1.8]
HP400-702FV	60	9	1,000	1/4" FVCR	1/4" FVCR	3.0 [76.2]	13.80 [350.5]	< 6.8 [3.1]
HP700-702FV	120	25	1,000	1/4" FVCR	1/4" FVCR	3.0 [50.8]	15.60 [396.2]	< 9.6 [4.4]
"U" Shaped Manifold								
PG1-702FV	15	10	250	1/4" FVCR	1/4" MVCR	2.0 [50.8]	13.80 [350.5]	< 5.1 [2.3]

F = 0.003 micron particle filter
V = inlet and outlet isolation valves



Bypass and Dual Purifier Manifold Assemblies:

Many configurations are available; please consult the factory for details.

Other Purification Media's Available:

Media	Gases Purified	Impurities Removed
202	CDA, O ₂ , N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , D ₂ , CO ₂ , N ₂ O, NO, CF ₄	H ₂ O to < 1 ppb
203	CDA, O ₂ , N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , D ₂ , N ₂ O, NO, CF ₄	H ₂ O, CO ₂ to < 100 ppt; Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppb
302	HCl, Cl ₂ , B ₂ H ₆ , BCl ₃ , CCl ₄ , GeCl ₄ , GeH ₄ , H ₂ S, H ₂ Se, HBr, NF ₃ , SiCl ₄ , SiF ₄ , SiH ₂ Cl ₂ , SiHCl ₃ , SO ₂ , CHClF ₂ , BF ₃	H ₂ O to < 1 ppb; Metals < 1 ppb
403	N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , CDA, O ₂	Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppb
404	N ₂ , Ar, He, Kr, Ne, Xe, H ₂ , CDA, O ₂ , CO ₂ , C ₂ H ₂ , C ₃ H ₆ , C ₂ H ₄ , NH ₃ , C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀	Organics < 1 pptV, Metals < 1 ppbV
502	AsH ₃ , PH ₃	H ₂ O, O ₂ to < 1 ppb, Metals < 1 ppbV
503	H ₂ with up to 1% O ₂ ; O ₂ with up to 2% H ₂	H ₂ in O ₂ or O ₂ in H ₂ < 1 ppmV
602	CO	H ₂ O, O ₂ , CO ₂ , Acids, Bases, Organics, Refractory Compounds, Metals < 1 ppbV
702 Covered by this Specification	NH₃, C₂H₇N, C₂H₈N₂, C₂H₄, C₃H₆, CH₃SiH₃, GeH₄, SF₆, SiH₄, H₂/SiH₄ mixtures	H₂O, O₂, CO₂, NMHCs, Metals to < 1 ppb
802	SiH ₄	H ₂ O, O ₂ , CO, CO ₂ , NMHCs, Sulphur compounds, Metals removal < 1 ppb
804	CO ₂	H ₂ O, O ₂ , CO, H ₂ to < 100 ppt; Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppbV
805	CO ₂	H ₂ O < 100 ppt; Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppbV
902	N ₂ , Ar, He, Kr, Ne, Xe, CH ₄ , C ₂ H ₆ , C ₃ H ₈ , C ₄ H ₁₀ , SF ₆ , Fluorocarbons	H ₂ O, O ₂ , CO, CO ₂ , H ₂ to < 100 ppt; Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppbV
904	H ₂ , D ₂ , H ₂ -Inerts Mix	H ₂ O, O ₂ , CO, CO ₂ to < 100 ppt; Volatile Acids, Organics, Refractory Compounds to < 1 ppt; Volatile Bases < 5 ppt, Metals < 1 ppbV
906	CDA, O ₂ , N ₂ O	H ₂ O, CO, CO ₂ , NMHC to < 1 ppb, Metals < 1 ppbV

Purifier Regeneration:

Available from any SAES Pure Gas Regeneration Center.



CE Directive:

All MicroTorr Purifiers meet CE directive requirements and come with the CE Marking.

