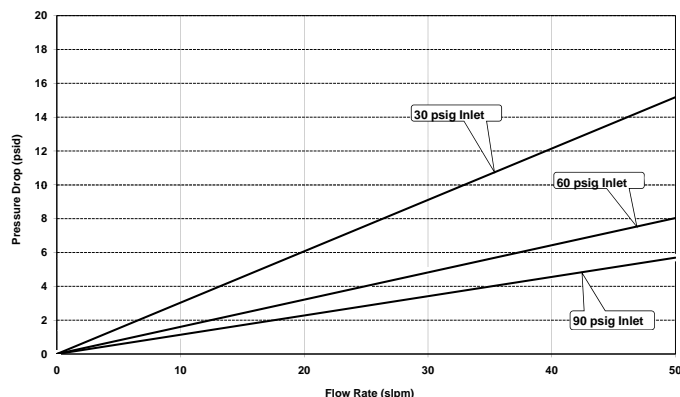


MicroTorr purifiers are the most complete and reliable solution for Point-of-Use (POU) gas purification. Combining model size with a selection of gas-specific purification materials, MicroTorr purifiers can be tailored to many different customer applications, while maintaining impurity removal to Part-Per-Billion (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, pressure tested, and analytical testing to Part-per-Trillion (pptv) levels.
- **Support.** Lifetime estimation and regeneration service available through SAES Pure Gas Sales Network.

Pressure Drop vs. Flow Rate
MC190 & MC200, 0.003 µm Particle Filter, tested in N₂



Ordering Information

XX190 - XXX XX

Model	Media	Options
MC190	202, 203, 302, 403,	No options
HP190	404, 502, 602, 702,	F 0.003µm Particle Filter
	703, 804, 802, 902,	V Inlet/Outlet Valves
	904, 905, 906	FV Filter and Valves

Example: MC190-902F

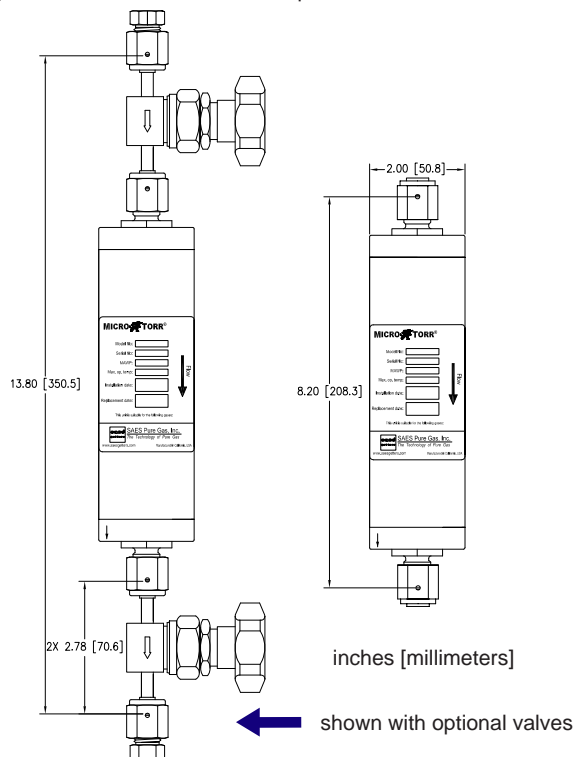
Model: MC190 Media: 902 Options: 0.003µm Particle Filter



MC190 & HP190

- **Lifetime**
Consult factory for specific lifetimes
- **Maximum Flow: 50 slpm†**
- **Nominal Flow: 5 slpm†**
- **Maximum Pressure: 250 psig (MC190)
1,000 psig (HP190)**

† See reverse for Arsine & Phosphine flowrates



Install Vertically with flow downward in direction of arrow. Consult factory for other mounting options.



SAES Pure Gas, Inc.
The Technology of Pure Gas
 4175 Santa Fe Road, San Luis Obispo, CA 93401
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MICRO TORRSM Specifications
 MC190 & HP190

Mechanical Specifications

Model Number	MC190- ^F	MC190- ^{FV}	HP190- ^F	HP190- ^{FV}
Maximum Flow	50 slpm [†]	50 slpm [†]	50 slpm [†]	50 slpm [†]
Nominal Flow	5 slpm [†]	5 slpm [†]	5 slpm [†]	5 slpm [†]
Material	Body-316L Stainless Steel			
Filter (Outlet)	Integrated 0.003 micron, metal			
Valves	N/A	1/4" manual	N/A	1/4" manual
Max Operating Press	250 psig (17.3 barg) @ 40°C		1000 psig (69 barg) @ 40°C	
Max Temperature Rating	40°C (104°F)	40°C (104°F)	40°C (104°F)	40°C (104°F)
Inlet	1/4" MVCR	1/4" FVCR	1/4" MVCR	1/4" FVCR
Outlet	1/4" MVCR	1/4" FVCR	1/4" MVCR	1/4" FVCR
Length (Face to Face)	8.20"±.03 [208.3mm±0.8]	13.80"±.05 [350.5mm±1.3]	8.20"±.03 [208.3mm±0.8]	13.80"±.05 [350.5mm±1.3]
Outside Diameter	2.00" [50.8mm]	2.00" [50.8mm]	2.00" [50.8mm]	2.00" [50.8mm]
Electropolish	Yes	Yes	Yes	Yes
Leak Rating	1x10 ⁻⁹ atm cc/sec of He	1x10 ⁻⁹ atm cc/sec of He	1x10 ⁻⁹ atm cc/sec of He	1x10 ⁻⁹ atm cc/sec of He
Weight	1.6 lbs (0.7 kg)	3.7 lbs (1.7 kg)	2.1 lbs (0.9 kg)	4.1 lbs (1.8 kg)

The 3 digit number found in the model number equates to the "Media" row in the table below.
[†]Flowrates with 502 media: Arsine/Phosphine max= 14.0 slpm, nominal= 7.0 slpm.

Purification and Removal Capabilities

Media	Gases Purified	Impurities Removed	Outlet Performance	Regenerable	Dangerous Goods (DG) Classification
202	Ar, CDA, H ₂ , He, Kr, N ₂ , Ne, O ₂ , Xe, CO ₂ , N ₂ O, D ₂ , NO	H ₂ O	< 1 ppbV	YES	Non-DG
203	Ar, CDA, H ₂ , He, Kr, N ₂ , Ne, O ₂ , Xe, N ₂ O, D ₂	H ₂ O, CO ₂	< 100 pptV	YES	Non-DG
		Volatile Acids, Organics, Refractory Compounds*	< 1 pptV		
		Volatile Bases*	< 5 pptV		
302	B ₂ H ₆ , BCl ₃ , BF ₃ , CCl ₄ , Cl ₂ , CO ₂ , GeCl ₄ , GeH ₄ , H ₂ S, H ₂ Se, HBr, HCl, N ₂ O, NF ₃ , NO, SiCl ₄ , SiF ₄ , SiH ₂ Cl ₂ , SiHCl ₃ , SO ₂ , CHCl ₃	H ₂ O, Metals	< 1 ppbV	NO	Non-DG
403	Ar, CDA, H ₂ , He, Kr, N ₂ , Ne, O ₂ , Xe, CO ₂	Volatile Acids, Organics, Refractory Compounds*	< 1 pptV	NO	Non-DG
		Volatile Bases*	< 5 pptV		
404	Ar, CDA, H ₂ , He, Kr, N ₂ , Ne, O ₂ , Xe, CO ₂ , C ₂ H ₂ , C ₃ H ₆ , C ₂ H ₄ , NH ₃	Organics*	< 1 ppbV	YES	Non-DG
502**	PH ₃ , AsH ₃	H ₂ O, O ₂	< 1 ppbV	NO	Non-DG
602	CO	H ₂ O, O ₂ , CO ₂ , Acids, Bases, Organics, Refractories*	< 1 ppbV	NO	DG - UN3089 Class 4.1
702	NH ₃ , C ₂ H ₇ N, C ₂ H ₈ N ₂ , C ₂ H ₄ , C ₃ H ₆ , CH ₃ SiH ₃ , GeH ₄ , H ₂ -SiH ₄ mix, SF ₆	H ₂ O, O ₂ , CO ₂ , Metals	< 1 ppbV	YES	DG - UN3089 Class 4.1
703	NH ₃	H ₂ O, O ₂ , CO ₂ , NMHCs, Metals*	< 1 ppbV	YES	DG - UN3089 Class 4.1
804	CO ₂	H ₂ O, O ₂ , CO, H ₂	< 1 ppbV	YES	DG - UN2881 Class 4.2
		Volatile Acids, Refractories, Condensable Organics (>100amu), Volatile Base	< 5 pptV		
		Non-Condensable Organics (>45 amu)	< 100pptV		
802	SiH ₄	H ₂ O, O ₂ , CO, CO ₂ , NMHCs, Sulphur compounds	< 1 ppbV	NO	DG - UN2881 Class 4.2
902	Ar, He, Kr, N ₂ , Ne, Xe	H ₂ O, O ₂ , CO, CO ₂ , H ₂	< 100 pptV	YES	DG - UN2881 Class 4.2
		Volatile Acids, Organics, Refractory Compounds*	< 1 pptV		
		Volatile Bases*	< 5 pptV		
904	H ₂ , H ₂ -Inerts Mix, D ₂	H ₂ O, CO, CO ₂ , O ₂	< 100 pptV	YES	DG - UN2881 Class 4.2
		Volatile Acids, Organics, Refractory Compounds*	< 1 pptV		
		Volatile Bases*	< 5 pptV		
905	C ₂ F ₆ , C ₂ H ₆ , C ₃ F ₈ , C ₃ H ₈ , C ₂ F ₄ H ₂ , C ₄ F ₈ , C ₄ H ₁₀ , CC _l ₄ , CF ₄ , CH ₄ , CHF ₃ , SF ₆	H ₂ O, O ₂ , CO, CO ₂ , H ₂ NMHC*	< 1 ppbV	YES	DG - UN2881 Class 4.2
906	CDA, O ₂ , N ₂ O	H ₂ O, CO, CO ₂ , NMHC*	< 1 ppbV	YES	Non-DG

*NMHCs = Organics (C>4); Volatile Acids are compounds including SO₂, NO_x, HCl, H₂S, etc; Volatile Bases are basic compounds including NH₃ and amines; Refractories are hydrocarbons with etheroatoms such as Si, Halogens, P, B, S, or metals.

Other Sizes Available

Model Number	MC1	MC50	MC190	MC200	MC400	MC450	MC500	MC700	MC1500	MC2525	MC2550	MC3000	MC4500	MC9000
Maximum Flow (slpm)	5	10	50	50	60	75	100	120	250	300	500	500	1000	1000
Average Flow (slpm)	0.5	1.5	5	5	9	10	12	25	40	80	80	80	200	300

Piping Options Available: 3 Valve Bypass

S110-474_S, DCN 5322

www.saespuregas.com

Specifications subject to change