SAES Pure Gas, Inc.
The Technology of Pure Gas
4175 Santa Fe Road, San Luis Obispo, CA 93401
Tel: 1 (805) 541-9299 | Fax: 1 (805) 541-9399

MICRO TORR® Specifications

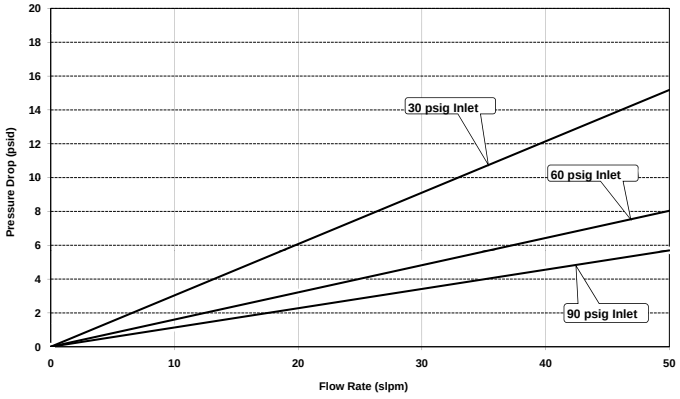
MC200

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

MC200 - XXX XX

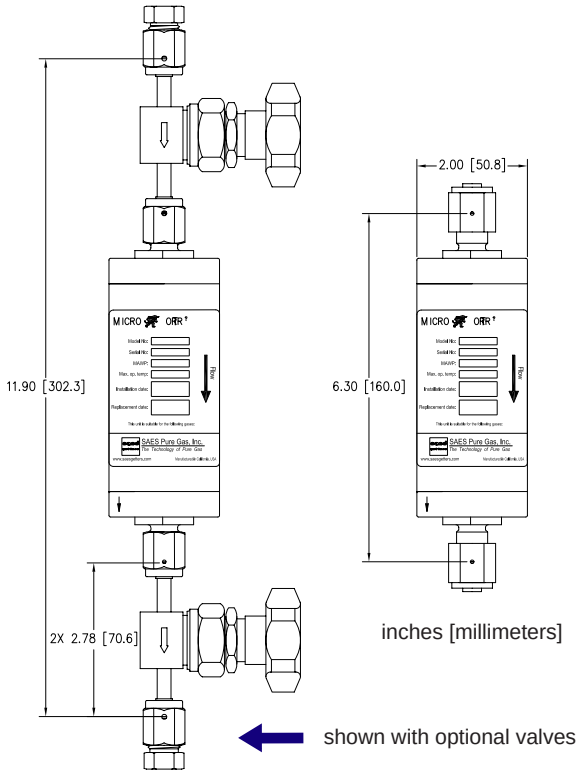
Model	Media	Options
MC200	202, 203, 302, 403, 404, 502, 602, 702, 703, 802, 902, 904, 905, 906	No options F 0.003µm Particle Filter V Inlet/Outlet Valves FV Filter and Valves

Example: MC200-902F
Model: MC200 Media: 902 Options: 0.003µm Particle Filter

MC200

- Lifetime
  Consult factory for specific lifetimes
- Maximum Flow: 50 slpm†
- Nominal Flow: 5 slpm†
- Maximum Pressure: 250 psig

† See reverse for Arsine & Phosphine flowrates



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

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Mechanical Specifications

Model	MC200-*	MC200-*V	MC200-*F	MC200-*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 - 2 micron metal		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		250 psig (17.3 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)	6.30"±.03 [160mm±0.8]	11.90"±.08 [302.3mm±2.0]	6.30"±.03 [160mm±0.8]	11.90"±.08 [302.3mm±2.0]
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	1.8 lbs (0.8 kg)	3.7 lbs (1.7 kg)	1.8 lbs (0.8 kg)	3.7 lbs (1.7 kg)

*The 3 digit number found in the model number equates to the "Media" row in the table below.
†Flowrates with 502 media: Arsine/Phosphene max= 10.0 slpm, nominal= 5.0 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_2O, CO, D_2	H_2O	< 1 ppbV	YES	Non-DG
203	Ar, CDA, H_2, He, Kr, N_2, Ne, O_2, Xe, N_2O, CO, D_2	H_2O, CO_2,	< 100 pptV	YES	Non-DG
		Acids, Organics, Refractory Compounds*	< 1 pptV		
		Bases*	< 5 pptV		
302	B_2H_6, BCl_3, $CClH_3$, Cl_2, CO_2, $GeCl_4$, GeH_4, H_2S, H_2Se, HBr, HCl, N_2O, NF_3, NO, $SiCl_4$, SiF_4, SiH_2Cl_2, $SiHCl_3$, SO_2, $CHClF_2$, BF_3	H_2O	< 1 ppbV	NO	Non-DG
		Metals Removal	< 1 ppbW		
403	Ar, CDA, H_2, He, Kr, N_2, Ne, O_2, Xe, CO_2	Acids, Bases, Organics, Refractory Compounds*	< 1 pptV	NO	Non-DG
		Bases*	< 5 pptV		
404	Ar, CDA, H_2, He, Kr, N_2, Ne, O_2, Xe, CO_2, C_2H_2, C_3H_6, C_2H_4, NH_3	Organics*	< 1 ppbV	YES	Non-DG
502	PH_3, AsH_3	H_2O, O_2	< 1 ppbV	NO	Non-DG
602	CO	H_2O, O_2, CO_2, Acids, Bases, Organics, Refractories*	< 1 ppbV	NO	DG - UN3089 Class 4.1
702	NH_3, C_2H_7N, $C_2H_8N_2$, C_2H_4, C_3H_6, CH_3SiH_3, GeH_4, H_2-SiH_4 mix, SF_6	H_2O, O_2, CO_2	< 1 ppbV	YES	DG - UN3089 Class 4.1
703	NH_3	H_2O, O_2, CO_2, NMHCs	< 1 ppbV	YES	DG - UN3089 Class 4.1
802	SiH_4	H_2O, 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_2O, O_2, CO, CO_2, H_2	< 100 pptV	YES	DG - UN2881 Class 4.2
		Acids, Organics, Refractory compounds*	< 1 pptV		
		Bases*	< 5 ppbV		
904	H_2, H_2-Inerts Mix, D_2	H_2O, CO, CO_2, O_2	< 100 pptV	YES	DG - UN2881 Class 4.2
		Acids, Organics, Refractory Compounds*	< 1 pptV		
		Bases*	< 5 pptV		
905	C_2F_6, C_2H_6, C_3F_8, C_3H_8, $C_2F_4H_2$, C_4F_8, C_4H_{10}, CCl_4, CF_4, CH_4, CHF_3, SF_6,	H_2O, CO, CO_2, O_2, H_2 NMHC	< 1 ppbV	YES	DG - UN2881 Class 4.2
906	CDA, O_2, N_2O	H_2O, CO, CO_2, NMHC	< 1 ppbV	YES	Non-DG

*Organic compounds (C>5) measured as Toluene. Acid compounds (SO2, NOx, H2S..) measured as SO2. Base compounds (NH3, amines..) measured as NH3. Silicon/Refractory compounds (HMDSA, HMDSO, TMS) measured as HMDSO

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