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

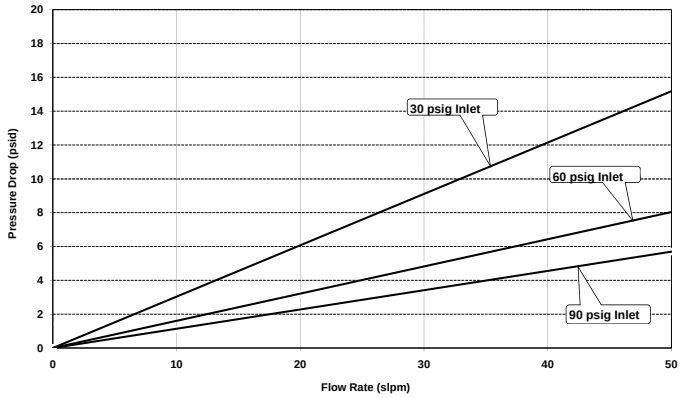
MC190 & HP190

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

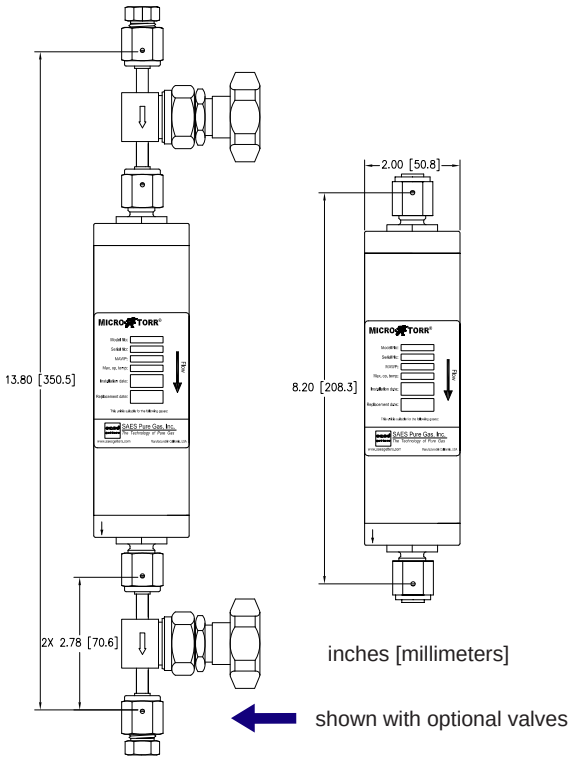
Model	Media	Options
MC190 HP190	202, 203, 302, 403, 404, 502, 602, 702, 703, 802, 902, 904, 905, 906	No options F 0.003µm Particle Filter V Inlet/Outlet Valves FV Filter and Valves

Example: 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
Tel: 1 (805) 541-9299 | Fax: 1 (805) 541-9399

MICRO TORR® 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"±.08 [350.5mm±2.0]	8.20"±.03 [208.3mm±0.8]	13.80"±.08 [350.5mm±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	1.6 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_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, BF_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, $CHClF_2$	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 pptV		
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, O_2, CO, CO_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
**Not available in HP Models

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