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

MICRO TORR® Specifications
MC400 & HP400

SAES is the worldwide leader in gas purification technology. We offer a complete line of gas purifiers for virtually all bulk and specialty gases.

Extensive experience in the interaction of gases and materials, combined with an uncompromising dedication to quality and service, has made **SAES** the world's leading supplier of gas purifiers. Our total-integration approach to manufacturing, from purification materials development to purifier installation at customer facilities, ensures not only the best product, but also unparalleled service and support throughout the world.

MicroTorr® ambient temperature gas purifiers are designed to remove impurities from many different gases, including nitrogen, rare gases, hydrogen, ammonia, arsine and phosphine, HCl, and many others. Impurities in these gases are reduced to less than 1 part-per-billion, in most cases.

The **MicroTorr** line was designed with total application flexibility in mind. In addition to sizes based on flow rate, a wide variety of valve and filter configurations is also available.

MicroTorr purifiers are manufactured with the same superior quality found in all SAES products. Analytical testing is performed utilizing APIMS technology to certify maximum performance. All models are CE/PED compliant.

MC400 & HP400

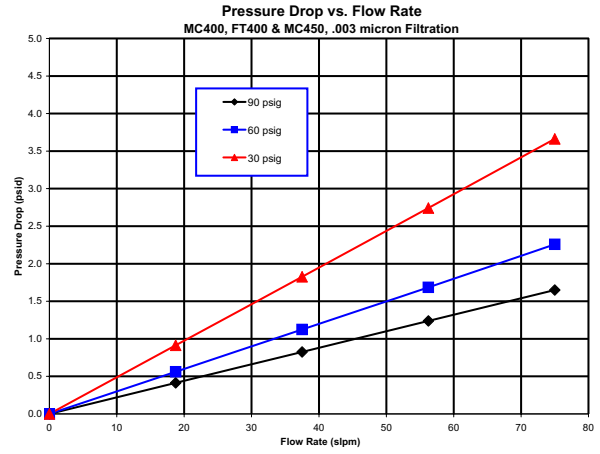
☐**Lifetime**
1 year based on typical 5-9 grade gas at nominal flow.
(Consult factory for specific lifetimes.)

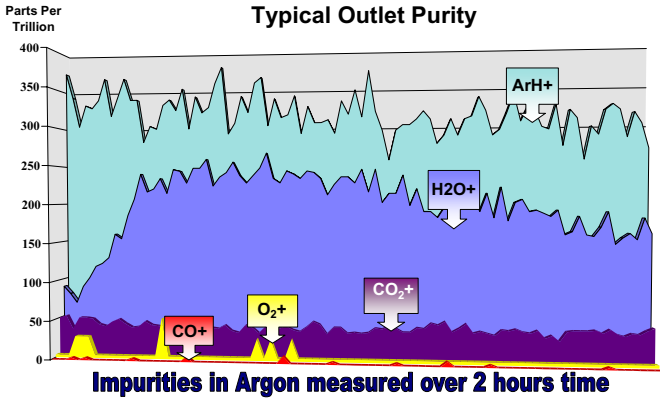
☐**Maximum Flow:** 60 slpm*

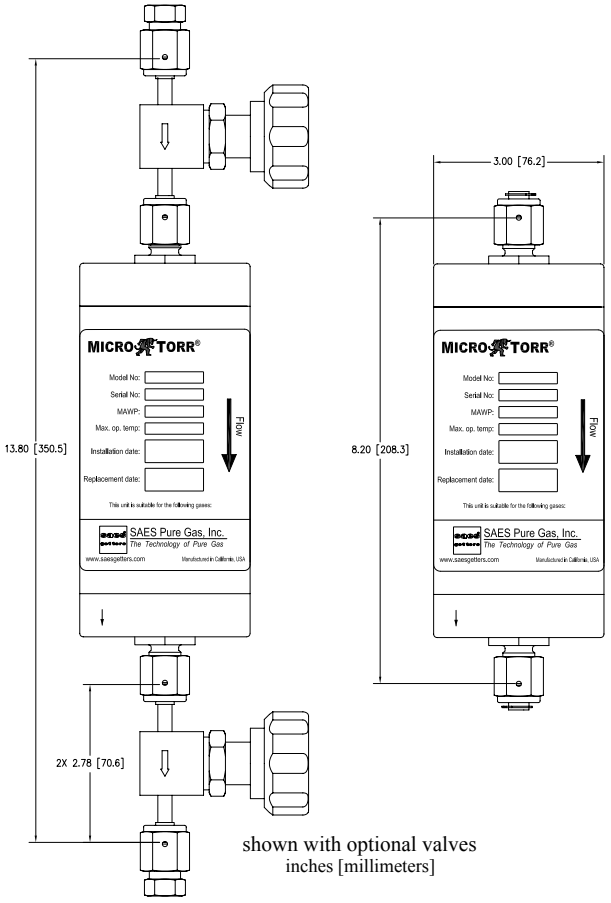
☐**Nominal Flow:** 9 slpm*

☐**Maximum Pressure:** 250 psig (MC400)
1,000 psig (HP400)

*See reverse for Arsine & Phosphine flowrates







shown with optional valves
inches [millimeters]

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

MICRO TORR® Specifications
MC400 & HP400

Mechanical Specifications

Model ( )=Option	MC400-*(F)	MC400-*(F)V	HP400-*(F)	HP400-*(F)V
Maximum Flow	60 slpm†	60 slpm†	60 slpm†	60 slpm†
Nominal Flow	9 slpm†	9 slpm†	9 slpm†	9 slpm†
Material	Body-316L Stainless Steel			
Filter	2.0 micron outlet metal; (F) Optional Integrated 0.003 micron, metal			
Valves	N/A	1/4" manual	N/A	1/4" manual
Max Operating Pressure	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 [208.3±0.8]	13.80"±.08 [350.5±2.0]	8.20"±.03 [208.3±0.8]	13.80"±.08 [350.5±2.0]
Outside Diameter	3.00" [76.2]	3.00" [76.2]	3.00" [76.2]	3.00" [76.2]
Electropolish	Yes	Yes	Yes	Yes
Helium Leak Test	$1x10^{-9}$ 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	4.9 lbs (2.2 kg)	6.8 lbs (3.1 kg)	4.9 lbs (2.2 kg)	6.8 lbs (3.1 kg)

* The 3 digit number found in the model number equates to the "Media" row in the table below.

† Flowrates with 402 media: max=17.0 slpm, nominal=11.0 slpm. Flowrates with 502 media: max=32.0 slpm, nominal=15.0 slpm.

MC400/HP400 Purification and Removal Capabilities

Media	Gases Purified	Impurities Removed	Outlet Performance	Conditioning (Refer to Manual)	MSDS
202	Ar, CDA, H_2, He, Kr, N_2, Ne, O_2, Xe	H_2O	< 1 ppb	B	MSDS-202
203	Ar, CDA, H_2, He, Kr, N_2, Ne, O_2, Xe	H_2O, CO_2,	< 100 ppt	B	MSDS-203
		Acids, Bases, Organics, Refractory Compounds *	< 10 ppt others		
206	CO	H_2O	< 1 ppb	A	MSDS-206
302	B_2H_6, BCl_3, BF_3, $CClH_3$, Cl_2, CO_2, DCS, $GeCl_4$, GeH_4, H_2S, H_2Se, HBr, HCl, N_2O, NF_3, NO, $SiCl_4$, SiF_4, SiH_2Cl_2, $SiHCl_3$, SO_2	H_2O	< 1 ppb	B	MSDS-302
402	AsH_3	H_2O, O_2	< 1 ppb	A	MSDS-402
403	CDA	Acids, Bases, Organics, Refractory Compounds*	< 10 ppt	A	MSDS-403
404	CO_2, $C2H_2$ (Acetylene)	NMHC	< 1 ppb	B	MSDS-404
502	PH_3	H_2O, O_2	< 1 ppb	A	MSDS-502
702	DMHz, NH_3	H_2O, O_2, CO_2	< 1 ppb	A	MSDS-702
902	Ar, He, Kr, N_2, Ne, Xe	H_2O, O_2, CO, CO_2, H_2 NMHC	< 1 ppb	B	MSDS-902
903	Ar, He, Kr, N_2, Ne, Xe	O_2, H_2O, CO, CO_2, H_2,	< 100 ppt	B	MSDS-903
		Acids, Bases, Organics, Refractory Compounds*	< 10 ppt		
904	H_2	H_2O, O_2, CO, CO_2, NMHC	< 1 ppb	A	MSDS-904
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 ppb	A	MSDS-905

*Organic/NMHC compounds (C5-C30..) 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	SP70	MC190 HP190	MC200	MC400 HP400	FT400	MC450	MC500	SP300	MC1500	SP600	MC3000	MC4500	MC9000
Maximum Flow	5 slpm	10 slpm	40 slpm	50 slpm	50 slpm	60 slpm	75 slpm	75 slpm	100 slpm	200 slpm	250 slpm	400 slpm	500 slpm	1000 slpm	1000 slpm
Nominal Flow	0.5 slpm	1.5 slpm	1.5 slpm	5 slpm	5 slpm	9 slpm	10 slpm	10 slpm	12 slpm	10 slpm	40 slpm	15 slpm	80 slpm	200 slpm	300 slpm

Model Numbering Information

MC1	-902	F	V
Indicates the size and flow rate of the unit.	Media. Indicates the gases this purifier can process and which impurities can be removed.	Indicates .003 µm filter. (Note: standard on some units. Refer to Mechanical Specifications above.)	Indicates valve option.
Example: MC1-202FV			