

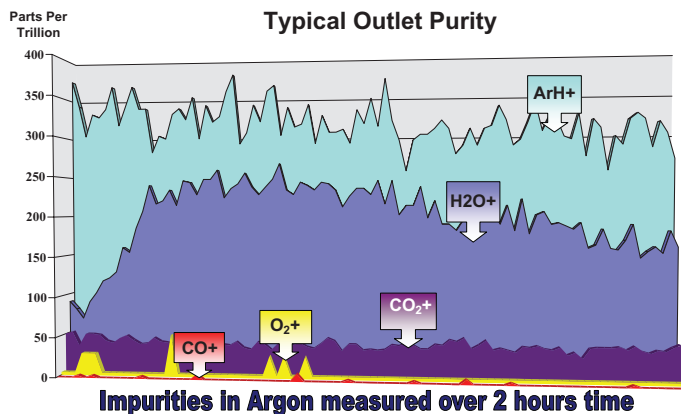
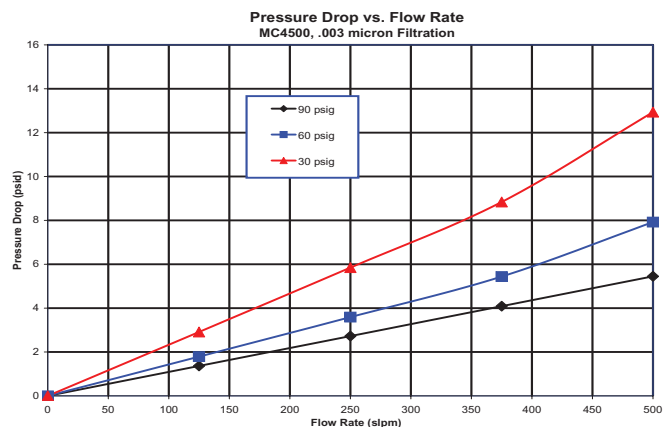
SAES is the worldwide leader in gas purification technology. We offer a complete line of gas purifiers for virtually all bulk and specialty gases.

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.



MC4500

□ Lifetime

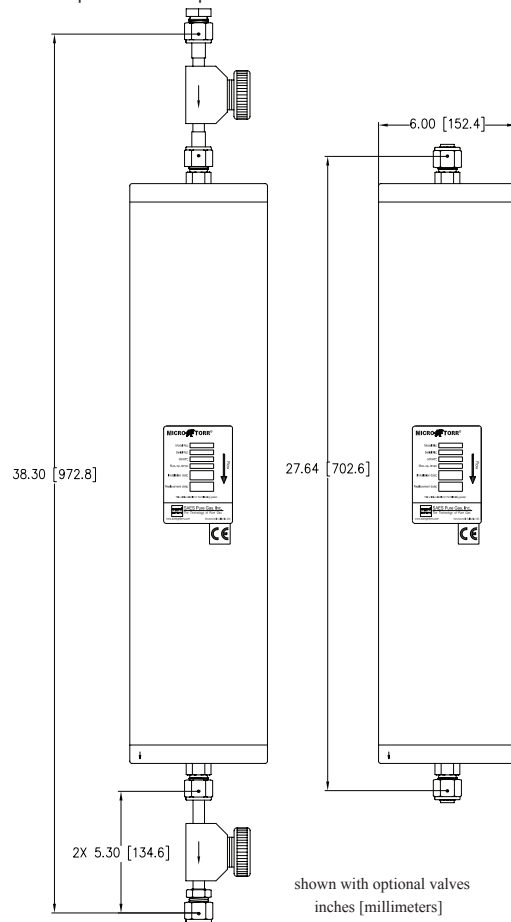
1 year based on typical 5-9 grade gas at nominal flow.
(Consult factory for specific lifetimes.)

□ Maximum Flow: 1000 slpm*

□ Nominal Flow: 200 slpm

□ Maximum Pressure: 250 psig

*500 slpm with filter option. See reverse for more information.



Mechanical Specifications

Model ()=Option	MC4500-*(V)	MC4500-*(F(V))	MC4500-*(HF) [†]	MC4500-*(HFV) [†]
Maximum Flow	1000 slpm	500 slpm	1000 slpm	1000 slpm
Nominal Flow	200 slpm	200 slpm	200 slpm	200 slpm
Filter	2.0 micron outlet metal	Integrated 0.003 micron, metal	Integrated "High Flow" 0.003 micron, metal	
Material	Body-316L Stainless Steel		Body-316L Stainless Steel	
Valve (Option)	(V) 1/2" manual		N/A	1/2" manual
Max Operating Pressure	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)	
Inlet	1/2" MVCR, (with valves 1/2" FVCR)		1/2" MVCR	1/2" FVCR
Outlet	1/2" MVCR, (with valves 1/2" MVCR)		1/2" MVCR	1/2" MVCR
Length (Face to Face)	27.64" [702.6mm] (with valves 38.30" [972.8mm])		27.64" [702.6mm]	38.30" [972.8mm]
Outside Diameter	6.0" [152.4]		6.0" [152.4]	
Electropolish	Yes		Yes	
Helium Leak Test	1x10 ⁻⁹ atm cc/sec of He		1x10 ⁻⁹ atm cc/sec of He	
Weight	43.1 lbs (19.5 kg) (with valves 48.7 lbs (22.1 kg))		43.1 lbs (19.5 kg)	48.7 lbs (22.1 kg)

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

† "HF" = high flow filter option

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 ₂ O	< 1 ppb	B	MSDS-202
203	Ar, CDA, H ₂ , He, Kr, N ₂ , Ne, O ₂ , Xe	H ₂ O, CO ₂	< 100 ppt	B	MSDS-203
		Acids, Bases, Organics, Refractory Compounds *	< 10 ppt others		
206	CO	H ₂ O	< 1 ppb	A	MSDS-206
402	AsH ₃	H ₂ O, O ₂	< 1 ppb	A	MSDS-402
403	CDA	Acids, Bases, Organics, Refractory Compounds*	< 10 ppt	A	MSDS-403
404	CO ₂ , C ₂ H ₂ (Acetylene)	NMHC	< 1 ppb	B	MSDS-404
502	PH ₃	H ₂ O, O ₂	< 1 ppb	A	MSDS-502
702	DMHz, NH ₃	H ₂ O, O ₂ , CO ₂	< 1 ppb	A	MSDS-702
902	Ar, He, Kr, N ₂ , Ne, Xe	H ₂ O, O ₂ , CO, CO ₂ , H ₂ NMHC	< 1 ppb	B	MSDS-902
903	Ar, He, Kr, N ₂ , Ne, Xe	O ₂ , H ₂ O, CO, CO ₂ , H ₂	< 100 ppt	B	MSDS-903
		Acids, Bases, Organics, Refractory Compounds*	< 10 ppt		
904	H ₂	H ₂ O, O ₂ , CO, CO ₂ , NMHC	< 1 ppb	A	MSDS-904
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 , CCl ₄ , CF ₄ , CH ₄ , CHF ₃ , SF ₆	H ₂ O, O ₂ , CO, CO ₂ , H ₂ NMHC	< 1 ppb	A	MSDS-905
906	CDA, O ₂	H ₂ O, CO, CO ₂ , NMHC	< 1 ppb	B	MSDS-906

*Organic/NMHC compounds (C5-C30..) measured as Toluene

Acid compounds (SO₂, NO_x, 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			