GateKeeper® GPU MC190 and HP190 Gas Purifiers

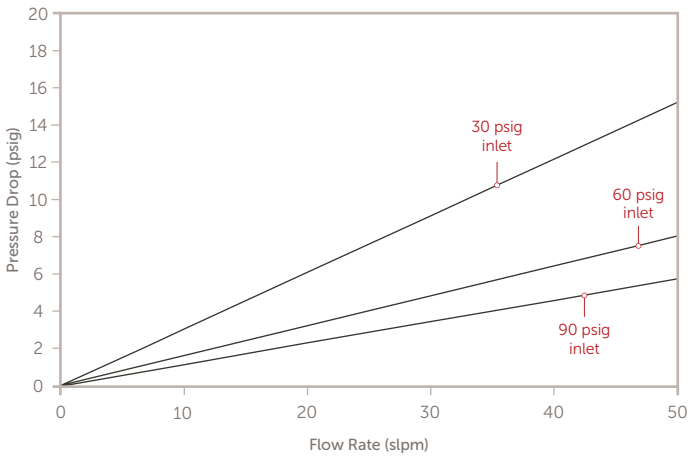
Superior purity control

GateKeeper® GPU 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, GateKeeper GPU 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 GateKeeper GPU 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 the Entegris, Inc.

Pressure Drop Vs. Flow Rate
MC190 and MC200, 0.003 µm Particle Filter, Tested in N_2



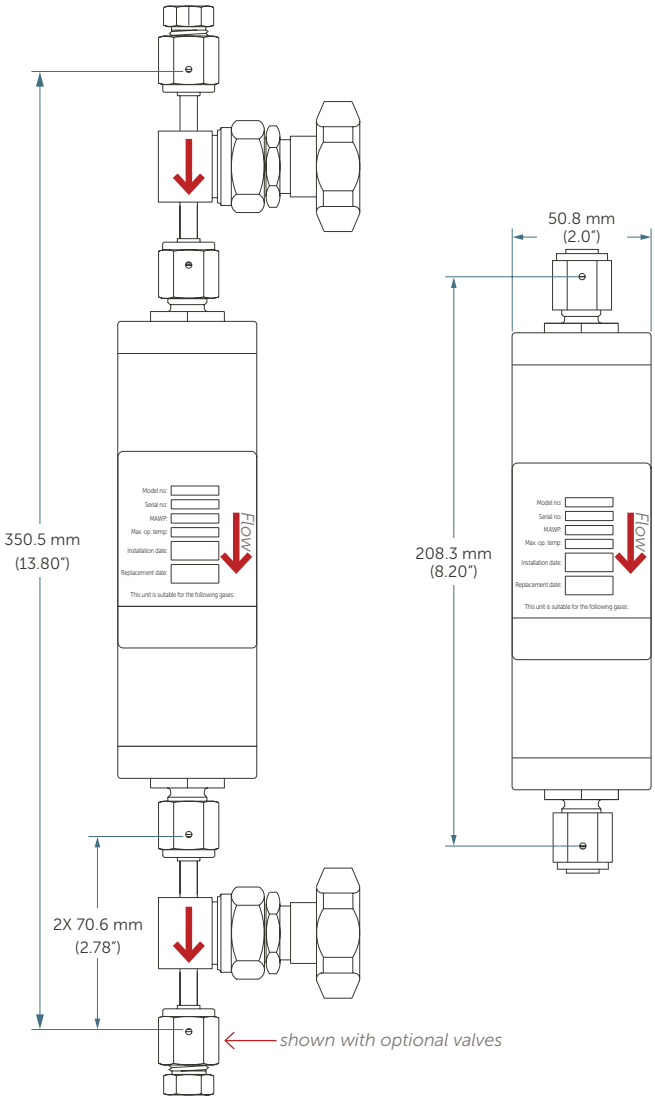
SPECIFICATIONS

Lifetime	Consult factory for specific lifetimes
Maximum flow	50 slpm†
Nominal flow	5 slpm†
Operating pressure	250 psig (MC190), 1,000 psig (HP190)

†See next page for arsine and phosphine flowrates.

DIMENSIONS

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



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	¼" manual	N/A	¼" manual
Max operating pressure	17.3 barg (250 psig) @ 65°C		69 barg (1000 psig) @ 65°C	
Max temperature rating	-20° – 65°C (-4° – 149°F)			
Inlet	¼" MVCR	¼" FVCR	¼" MVCR	¼" FVCR
Outlet	¼" MVCR	¼" FVCR	¼" MVCR	¼" FVCR
Length	208.3 ±0.8 mm (8.20 ±0.03")	350.5 ±1.3 mm (13.80 ±0.05")	208.3 ±0.8 mm (8.20 ±0.03")	350.5 ±1.3 mm (13.80 ±0.05")
Outside diameter	50.8 mm (2.0")	50.8 mm (2.0")	50.8 mm (2.0")	50.8 mm (2.0")
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	0.7 kg (1.6 lbs)	1.7 kg (3.7 lbs)	0.9 kg (2.1 lbs)	1.8 kg (4.1 lbs)

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

†Flowrates with 502 media: arsine/phosphene max = 14.0 slpm, nominal = 15.0 slpm.

PURIFICATION AND REMOVAL CAPABILITIES

Media	Gases Purified	Impurities Removed	Outlet Performance	Regenerable	Dangerous Goods (DG) Classification
202	CDA, O_2, N_2, Ar, He, Kr, Ne, Xe, H_2, D_2, CO_2, N_2O, NO, CF_4	H_2O	<1 ppb	Yes	Non-DG
203	CDA, O_2, N_2, Ar, He, Kr, Ne, Xe, H_2, D_2, N_2O, NO, CF_4	H_2O, CO_2	<100 ppt	Yes	Non-DG
		Volatile acids, organics, refractory compounds	<1 ppt		
		Metals	<1 ppb		
302	HCl, Cl_2, B_2H_6, BCl_3, $CClH_3$, $GeCl_4$, GeH_4, H_2S, H_2Se, HBr, NF_3, $SiCl_4$, SiF_4, SiH_2Cl_2, $SiHCl_3$, SO_2, $CHClF_2$, BF_3	H_2O	<1 ppb	No	Non-DG
		Metals	<1 ppb		
403	N_2, Ar, He, Kr, Ne, Xe, H_2, CDA, O_2	Volatile acids, organics, refractory compounds	<1 ppt	No	Non-DG
		Volatile bases	<5 ppt		
		Metals	<1 ppb		
404	N_2, Ar, He, Kr, Ne, Xe, H_2, CDA, O_2, CO_2, C_2H_2, C_3H_6, C_2H_4, NH_3, C_2H_6, C_3H_8, C_4H_{10}	Organics	<1 pptv	Yes	Non-DG
		Metals	<1 ppbv		
502	AsH_3, PH_3	H_2O, O_2	<1 ppb	No	Non-DG
		Metals	<1 ppbv		
503	H_2 with up to 1% O_2; O_2 with up to 2% H_2	H_2 in O_2, or O_2 in H_2	<1 ppmv	No	Non-DG
602	CO	H_2O, O_2, CO_2, acids, bases, organics, refractories compounds, metals	<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, SF_6, SiH_4, H_2/SiH_4 mixtures	H_2O, O_2, CO_2, NMHCs, metals	<1 ppb	Yes	DG – UN3089 Class 4.1
804	CO_2	H_2O, O_2, CO, H_2	<100 ppt	Yes	DG – UN2881 Class 4.2
		Volatile acids, organics, refractory compounds	<1 ppt		
		Volatile bases	<5 ppt		
		Metals	<1 ppbv		

Media	Gases Purified	Impurities Removed	Outlet Performance	Regenerable	Dangerous Goods (DG) Classification
805	CO_2	H_2O	<100 ppt	Yes	Non-DG
		Volatile acids, organics, refractory compounds	<1 ppt		
		Volatile bases	<5 ppt		
		Metals	<1 ppbv		
902	N_2, Ar, He, Kr, Ne, Xe, CH_4, C_2H_6, C_3H_8, C_4H_{10}, SF_6, fluorocarbons	H_2O, O_2, CO, CO_2, H_2	<100 ppt	Yes	DG – UN2881 Class 4.2
		Volatile acids, organics, refractory compounds	<1 ppt		
		Volatile bases	<5 ppt		
		Metals	<1 ppbv		
904	H_2, D_2, H_2-Inerts mix	H_2O, O_2, CO, CO_2	<100 ppt	Yes	DG – UN2881 Class 4.2
		Volatile acids, organics, refractory compounds	<1 ppt		
		Volatile bases	<5 ppt		
		Metals	<1 ppbv		
906	CDA, O_2, N_2O	H_2O, CO, CO_2, NMHC	<1 ppb	Yes	Non-DG
		Metals	<1 ppbv		

**NMHCs = organics (C>4); volatile acids are compounds including SO_2, Nox, HCl, H_2S, etc; volatile bases are basic compounds including NH_3 and amines; refractory compounds are hydrocarbons with etheroatoms such as Si, Halogens, P, B, S, or metals.*

OTHER SIZES AVAILABLE

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

ORDERING INFORMATION

MC190 ____ ____

Model
MC190
HP190

Media
202, 203, 302, 403, 404, 502, 503, 602, 702, 804, 805, 902, 904, 906

Options
= No options
F = 0.003 µm particle filter
V = Inlet/outlet valves
FV = Filter and valves

Example: MC190-902F

Model: MC190
Media: 902
Options: 0.003 µm particle filter

FOR MORE INFORMATION

Please call your Regional Customer Service Center today to learn what Entegris can do for you. Visit entegris.com and select the Contact Us link to find the customer service center nearest you.

TERMS AND CONDITIONS OF SALE

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Entegris

Corporate Headquarters
129 Concord Road
Billerica, MA 01821
USA

Customer Service
Tel +1 952 556 4181
Fax +1 952 556 8022
Toll Free 800 394 4083