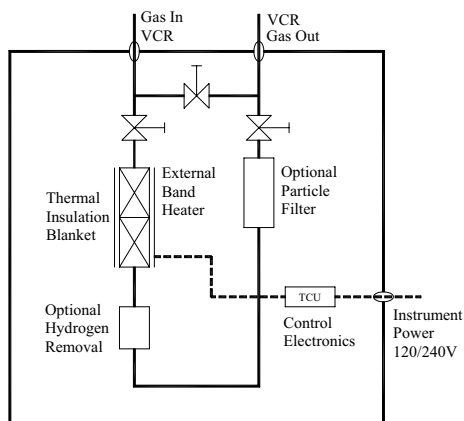


UltraPure® High Flow Gas Purifiers and Bulk Gas Component Sets



Typical Installation

FEATURES

- ◆ Cost effective alternative to a turnkey system
- ◆ Easy-to-assemble.
- ◆ Sub-ppb removal of impurities from Inert gases, Nitrogen, Hydrogen, Acid Gases, and Oxygen.
- ◆ Certified temperature control unit and electronics box designed for simple operation and reliability.
- ◆ 316L stainless steel (< 15Ra) electropolished wetted surface finish
- ◆ In-Situ regeneration and bakeable to 450°C

APPLICATIONS

- ◆ Semiconductor Industry
- ◆ High Purity Welding
- ◆ Fab Construction
- ◆ Temporary Gas Purifier
- ◆ Purge Gases

UltraPure® High Flow Gas Purifiers and Bulk Gas Component Sets (BGCS) allow for the simple fabrication of Gas Purifier Systems for flows ranging from 30 - 2250 slpm, for most process gases including Nitrogen, Argon, Helium, Hydrogen and Oxygen. The UltraPure® High Flow Gas Purifiers and BGCS will reduce gaseous impurities, H₂O, O₂, CO, N₂, CO₂, CH₄ and (H₂)¹ to sub-ppb levels.

High pressure purifiers (max 3000 psig) are available upon request, ideal for gas bottle filling plants and other similar high pressure applications.

LISTING OF GASES PURIFIED / FILTERED

Inert Gases	Hydrogen / Hydrides	Acid Gases	Oxygen
Impurities Removed H ₂ O, O ₂ , CO, CO ₂ , H ₂ ¹ (N ₂ , CH ₄) ²	Impurities Removed H ₂ O, O ₂ , CO ₂ , CO, (N ₂) ³	Impurities Removed H ₂ O	Impurities Removed H ₂ O, CO ₂ , (H ₂ , CO, CH ₄) ⁴
Argon Helium Nitrogen	Hydrogen Argon/Hydrogen Nitrogen/Hydrogen Ammonia Silane	Hydrogen Chloride	Oxygen Air Nitrous Oxide

1 - Only with purchase of -H model. 2 - Additional impurities removed from Ar, He & N₂ only using heated getter.

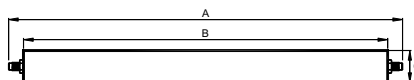
3 - Nitrogen and Methane removed from Hydrogen, Argon/Hydrogen and Nitrogen/Hydrogen, using heated getter.

4 - Only with purchase of optional heated catalyst.

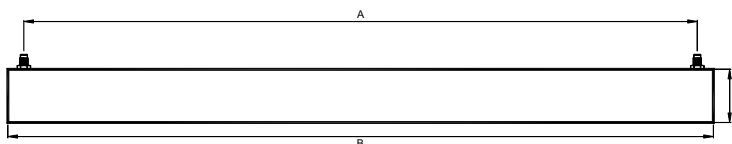
UltraPure® High Flow Purifier Vessels

Dimensional and Performance Specifications

Model 3,500 - 10,000



Model 20,000 - 50,000



Model	A inches	B inches	C inches	Fittings inches	Average Flows (slpm) ¹ 1 year lifetime (removal of impurities per chart page 1)	Max Flow (slpm) @ 150 psig Heated	Max Flow (slpm) @ 150 psig Room Temp
3500	13.5"	11.0"	3.5"	1/2"	30	160	280
5000	32.4"	30.4"	3.0"	1/2"	45	225	395
10,000	47.0"	45.0"	4.0"	1/2"	90	450	790
20,000	63.0"	66.0"	5.0"	1/2"	180	900	1,575
30,000	63.0"	66.0"	6.0"	1/2"	270	1,350	2,376
50,000	63.0"	66.0"	7.5"	3/4"	450	2,250	4,000
Maximum Pressure 250 psig (USA)/9.9 kg/cm ³ G (Japan) Materials 316L S.S. (< 15 Ra Max) Operating Temperature Room Temperature or 375-450°C Fittings MVCR Leak Rate < 2 x 10 ⁻¹⁰ atm cc/sec He Gas Inlet VLSI grade (99.9995% nominal) ¹							

¹ - Lifetime is inversely proportional to the total inlet impurity level and to the average flow. Lifetime for H₂O/O₂ removal only using getter purifiers is approx. **4 years** at the stated flows / inlet gas. Room temperature getter purifiers require periodic regeneration to achieve this total lifetime

Optional Accessories

- ◆ UHP High Flow Gas Valves
- ◆ 0.003 µm Ceramic or Metal Particle Filter
- ◆ Pressure Transducer with digital display
- ◆ High Pressure Vessels (ASME Code)
- ◆ Heat Exchanger
- ◆ External Band Heater (See note below)
- ◆ Thermal Insulation Blanket
- ◆ High Flow Mass Flow Meters
- ◆ TCU Electronics Assembly
- ◆ APIMS testing for all impurities

Note: For regeneration and for applications requiring removal of all impurities, an external band heater TCU electronics assembly is required.

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