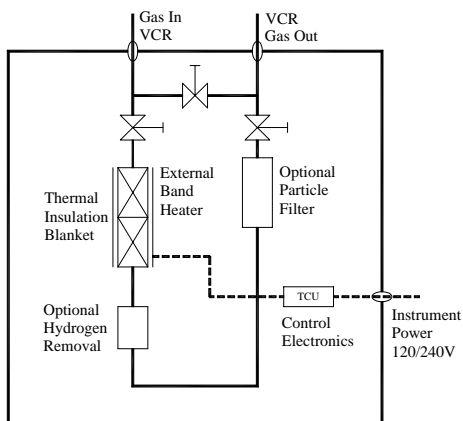


UltraPure® High Flow Gas Purifiers and Bulk Gas Component Sets



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

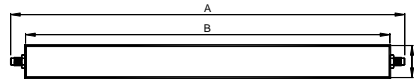
Inert Gases	Hydrogen / Hydrides	Acid Gases	Oxygen
Impurities Removed H ₂ O, O ₂ , CO, CO ₂ , H ₂ ¹ (N ₂ , CH ₄) ²	Impurities Removed H ₂ O, O ₂ , CO ₂ , CO, (N ₂) ³	Impurities Removed H ₂ O	Impurities Removed H ₂ O, CO ₂ , (H ₂ , CO, CH ₄) ⁴
Argon Helium Nitrogen	Hydrogen Argon/Hydrogen Nitrogen/Hydrogen 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.

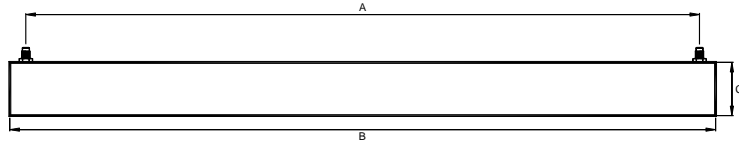
UltraPure® High Flow Purifier Vessels

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.

NuPure III

67 Iber Road, Unit 107,
Ottawa ON K2S 1E7 Canada
Tel: (613) 836-0336 Fax: (613) 836-0297
E-mail: sales@nupure.com Web-site: www.nupure.com

Or Contact:



Teesing B.V. tel: +(31) 70 413 07 00
Verrijn Stuaartlaan 40 fax: +(31) 70 413 07 30
2288 EL Rijswijk mail: info@teesing.com
The Netherlands site: www.teesing.com