



Ultramet-L[®] 4400 Series Assembly



Description

The Ultramet-L[®] 4400 Series Filter Assembly is available with an all 316L stainless steel housing and either a 316L stainless steel or nickel filter. It is designed for 3 nanometer (0.003 μm) filtration of semiconductor grade gases. The 4400 series filter is recommended for all applications with process gases that are compatible with 316L stainless steel or nickel. For applications with corrosive gases, such as halogen containing acid gases, the nickel filter assembly is recommended only if the gas is known to be anhydrous.

- State-of-the-art 316L stainless steel or nickel media
- Preconditioned to ultraclean levels
- Excellent particle removal efficiency vs. pressure drop
- Accommodates extremely high flow rates for the assembly size
- Excellent gas displacement and desorption characteristics
- High temperature and pressure capabilities
- Compact size for ease of installation
- Wide variety of fitting options available
- 100% helium leak tested
- Cleanroom manufactured and packaged
- Housing material meets or exceeds VIM VAR specifications.

Specifications

Materials

- Electropolished 316L stainless steel housing
- 7 μin / 0.18 mm R_a internal surface finish
- Cr:Fe (1:1) Chromium enriched internal surface chemistry
- VAR PLUS housing material meets or exceeds typical VIM/VAR specifications
- 316L stainless steel or nickel filter media

Removal Rating

- 0.003 μm

Preconditioned Cleanliness*

- < 10 ppb moisture contribution (Qualified per SEMSPEC test method #90120397B-STD)
- < 10 ppb THC contribution (Qualified per SEMSPEC test method #90120396B-STD)
- < 10 ppb O_2 contribution (Qualified per SEMSPEC test method #90120398B-STD)
- No particle contribution above background 1 particle/(ft³ or m³)

Connections

- 1/4", 1/2" Gasket Seal, Male/Male (VCR¹ or compatible)
- 1/4" Butt Weld (0.035" / 0.89 mm wall)

Operating Conditions

- Maximum Operating Pressure: 3000 psig @ 100°F/207 bar @ 38°C; 1685 psig @ 840°F/116 bar @ 450°C
- Maximum Allowable Differential Pressure: 316L Stainless Steel Filter: 125 psid @ 100°F/8.6 bar @ 38°C; 60 psid @ 840°F/4.1 bar @ 450°C
Nickel Filter: 150 psid @ 68°F/10 bar @ 38°C; 75 psid @ 800°F/5 bar @ 426°C

Particle Removal Characteristics

- 10⁹ particle reduction at 50 slpm/1.76 scfm

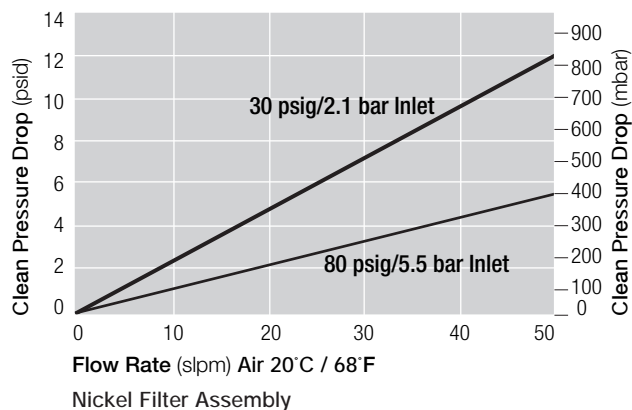
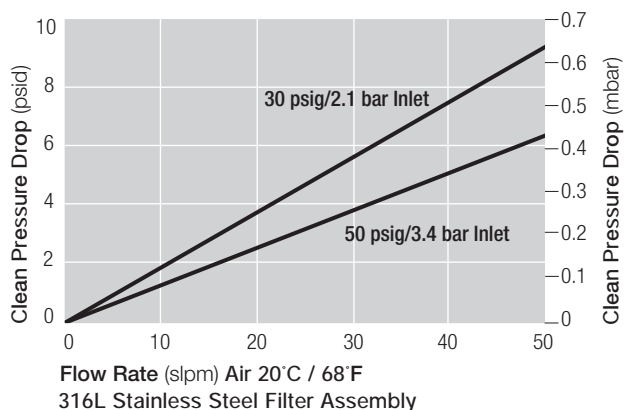
Leak Rating

- 100% helium leak tested to 10⁻⁹ atm·cm³/s
- Design validated to 10⁻¹¹ atm·cm³/s

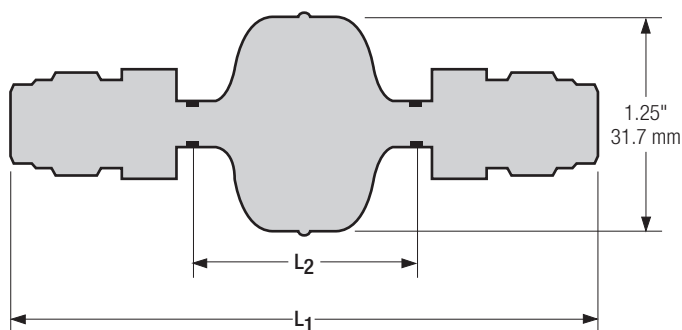
* Gasket Seal Fittings only.

¹ VCR is a trademark of Swagelok Co.

Pressure Drop vs. Gas Flow Rate



Dimensions



Part Numbers/Ordering Information

Part Number	Description	Fitting Type (in / mm)	Length (L)
GLFF4400VMM4	All 316L Stainless Steel	¼" Gasket Seal (VCR or Compatible) Male/Male	3.31 / 84 (L ₁)
GLFF4400BW4	All 316L Stainless Steel	¼" Butt Weld, 0.035" / 0.89 mm wall	1.75 / 45 (L ₂)
GLFN4400VMM4	Nickel Media, 316L Stainless Steel Housing	¼" Gasket Seal (VCR or Compatible) Male/Male	3.31 / 84 (L ₁)
GLFN4400VFM4	Nickel Media, 316L Stainless Steel Housing	¼" Gasket Seal (VCR or Compatible) Female Inlet/Male Outlet	3.31 / 84 (L ₁)
GLFN4400VMF4	Nickel Media, 316L Stainless Steel Housing	¼" Gasket Seal (VCR or Compatible) Male Inlet/ Female Outlet	2.80 / 71 (L ₁)
GLFN4400VMM8	Nickel Media, 316L Stainless Steel Housing	½" Gasket Seal (VCR or Compatible) Male/Male	3.31 / 84 (L ₁)
GLFN4400BW4	Nickel Media, 316L Stainless Steel Housing	¼" Butt Weld, 0.035" / 0.89 mm wall	1.75 / 44 (L ₂)

Unit conversion: 1 bar = 100 kilopascals



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