SurfaceLine™ filters provide the industry's smallest surface-mount design.
Overview

Wafergard® SL 1.125” C-seal filters combine the industry's best filters with the industry's smallest surface-mount design. The Wafergard product line provides ultimate process protection. Whatever your process needs, the Wafergard family of filters provides ultimate purity, superior corrosion resistance and excellent compatibility with a full range of gases. Entegris' SurfaceLine™ filters consume the least amount of space on gas panels compared to standard in-line designs, while reducing parts inventories and variations. Entegris also offers additional surface-mount filters in various sizes, seals and membranes.

Features and Benefits

- Designed to meet 1.125” C-seal surface-mount interfaces
- Cleanest, most efficient all-metal filters available
- Minimizes outgassing, improves corrosion resistance and provides excellent chemical compatibility
- High-efficiency particle retention
- Reduced total flow area provides superior downstream cleanliness
- Cleanroom manufactured and cleanroom packaged

Applications

- Gas panels
- Ultra-high purity gas lines
- High-temperature applications
- Dynamic pressure applications
- Stainless steel filters for inert, hydride and CO gases; nickel filters for inert and reactive gases
- Ozone applications (gas)

Specifications

<table>
<thead>
<tr>
<th></th>
<th>NF-Micro</th>
<th>NF-Mini</th>
<th>NF-Mini XL</th>
<th>SF-Micro</th>
<th>SF-Mini</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials:</td>
<td>Filter element</td>
<td>Patented, sintered nickel membrane filter</td>
<td>Proprietary sintered stainless steel membrane filter</td>
<td></td>
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<tr>
<td>Housing, base block, end cap</td>
<td>SEMI® F20 316L electropolished stainless steel</td>
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<tr>
<td>Connections:</td>
<td>Inlet/outlet</td>
<td>SurfaceLine 1.125” C-seal</td>
<td></td>
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<tr>
<td>Downstream cleanliness:</td>
<td>Particles¹</td>
<td>&lt;0.03 particles/liter (&lt;1 particle/ft³) &gt; 0.01 μm</td>
<td></td>
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<tr>
<td></td>
<td>Volatiles²</td>
<td>Volatile outgassing of H₂O, O₂ and THC is below detectable limits (by RGA and FID at room temperature)</td>
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<tr>
<td>Removal rating:</td>
<td>≥ 0.003 μm</td>
<td></td>
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<tr>
<td>Surface finish interior:</td>
<td>≥ 5 μin Ra</td>
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<tr>
<td>Helium leak testing:</td>
<td>Qualified</td>
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</tr>
<tr>
<td>Operating conditions:</td>
<td>Maximum inlet pressure</td>
<td>34.5 bar (500 psig) @ 20°C</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Maximum forward differential pressure</td>
<td>10 bar @ 23°C (150 psid)</td>
<td>8 bar @ 23°C (115 psid)</td>
<td>8 bar @ 23°C (115 psid)</td>
<td>10 bar @ 23°C (150 psid)</td>
</tr>
<tr>
<td></td>
<td>Maximum reverse differential pressure</td>
<td>10 bar @ 23°C (150 psid)</td>
<td>8 bar @ 23°C (115 psid)</td>
<td>8 bar @ 23°C (115 psid)</td>
<td>10 bar @ 23°C (150 psid)</td>
</tr>
<tr>
<td></td>
<td>Maximum operating temperature</td>
<td>Inert gases — 400°C @ 35 bar (500 psig)</td>
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<td>Corrosive and reactive gases — 50°C @ 35 bar (500 psig)</td>
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<tr>
<td>Particle retention:</td>
<td>Greater than 99.9999999% removal of all particles³</td>
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</tr>
<tr>
<td></td>
<td>Greater than 99.999% removal of all particles³</td>
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<tr>
<td>Flow rating:</td>
<td>See performance data</td>
<td></td>
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</tbody>
</table>

¹ Particle cleanliness qualified following SEMASPEC Test Method for Particle Shedding (#93021511A-STD).
³ Referenced at the most penetrating particle size.
Performance Data

**Wafergard SL 1.125" C-Seal NF-Micro**

- **Flow Rate @ 23°C SLPM**
- **Differential Pressure (psid)**
  - 2.06 bar inlet (30 psig)
  - 1.03 bar inlet (15 psig)
  - 4.12 bar inlet (60 psig)

**Wafergard SL 1.125" C-Seal NF-Mini XL**

- **Flow Rate @ 23°C SLPM**
- **Differential Pressure (psid)**
  - 2.06 bar inlet (30 psig)
  - 1.03 bar inlet (15 psig)
  - 4.12 bar inlet (60 psig)

**Wafergard SL 1.125" C-Seal NF-Mini**

- **Flow Rate @ 23°C SLPM**
- **Differential Pressure (psid)**
  - 2.06 bar inlet (30 psig)
  - 1.03 bar inlet (15 psig)
  - 4.12 bar inlet (60 psig)

**Wafergard SL 1.125" C-Seal SF-Mini**

- **Flow Rate @ 23°C SLPM**
- **Differential Pressure (psid)**
  - 2.06 bar inlet (30 psig)
  - 1.03 bar inlet (15 psig)
  - 4.12 bar inlet (60 psig)

**Wafergard SL 1.125" C-Seal SF-Micro**

- **Flow Rate @ 23°C SLPM**
- **Differential Pressure (psid)**
  - 2.06 bar inlet (30 psig)
  - 1.03 bar inlet (15 psig)
  - 4.12 bar inlet (60 psig)
Dimensions

For More Information

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

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