Vortex Lens **V-193-10**

### Specifications

**Wavelength:** 193 nm  
**Topological numbers:** $m = 1-8, 16$  
**Sectors:** 1-8, 16 for $m = 1-8, 16$ resp.  
**Number of steps:** 64  
**Measured total depth:** 345 nm  
**Material:** UV-grade fused silica  
**Coating:** none

### Dimensions

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIA x T</td>
<td>$\phi 12.7 \pm 0.1$ mm x $\phi 10 \pm 0.8 \pm 0.05$ mm x 2.5$ \pm 0.05$ mm</td>
</tr>
<tr>
<td>Thickness</td>
<td>$5.625^\circ (n, 4)$</td>
</tr>
</tbody>
</table>

### Applications

- STED-microscopy  
- Optical vortex coronographs  
- Lithography  
- Optical tweezers and manipulations  
- Data transfer

### Application Notes

1) Ensure a good quality of the laser beam. We recommend:  
   a) a Gaussian beam profile (TEM00) and circular polarization  
   b) a high laser wavelength stability over time and power  
2) Mount the vortex lens into a XY translation stage (best way to match the optical axis of the vortex lens)  
   a) The vortex lens can be placed into a 1/2 inch lens mount  
   b) The lens can be placed into a rectangular mount (11x11 mm)  
3) Expand the laser beam over the whole working aperture of the vortex lens (10 mm)  
4) After the vortex lens, adjust the beam size to match your focussing optics  
5) Avoid touching the surface of the vortex lens.  
6) Always use laser safety goggles!