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632nm Radial Polarization Converter

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General

Type:
Polarization Converter

Physical & Mechanical Properties

Clear Aperture CA (mm):
6.0

Diameter (mm):
25.40

Thickness (mm):
3.00 ±0.1

Dimensional Tolerance (mm):
+0.0/-0.1

Construction:
Self-Organized Nanogratings

Optical Properties

Design Wavelength DWL (nm):
632

Substrate:
Fused Silica (Corning 7980)

Surface Quality:
20-10

Transmission (%):
80-94 (wavelength dependent)

Wavelength Range (nm):
612 - 652

Surface Flatness (P-V):
λ/8

Damage Threshold, By Design:
20 J/cm^2 @ 1064nm, 3.5ns

Regulatory Compliance

RoHS 2015:
Compliant

Certificate of Conformance:
View

Reach 247:
Compliant

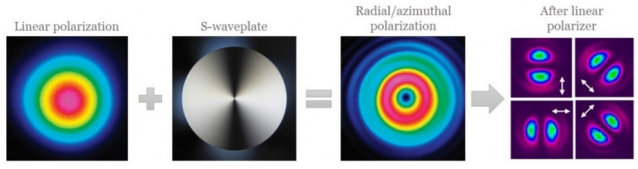
Product Details

- Converts Linear Polarization to Radial or Azimuthal
- Converts Circular Polarization to an Optical Vortex (Donut-Shaped Beam)
- High Damage Thresholds in the Nano- and Femtosecond Range
- Higher-Order Versions Can Generate Higher Order Polarization Patterns and Optical Vortices

Radial Polarization Converters (S-waveplates) are space-variant retarders designed to convert linear polarization to radial or azimuthal polarization to reduce laser beam spot size. Alternatively, they can be used to convert circularly polarized light to an optical vortex (donut-shaped beam). The converters are manufactured by inscribing self-organized nanogratings inside fused silica using a femtosecond laser. Radial Polarization Converters (S-waveplates) are beneficial for a variety of polarization-sensitive applications. Radially polarized beams are highly efficient at micro-drilling high aspect-ratio features in metal, while vortex (donut-shaped) beams are ideal for STED or two-photon excitation fluorescence microscopy, laser micromachining, and optical tweezer applications (multiple particle trapping).

Higher Order Radial Polarization Converters (S-Waveplates) can generate higher order polarization patterns, optical vortices with increased topological charge, or vector Bessel beams when used in combination with **axicons**. These types of beams are used in micromachining applications, such as microhole drilling of transparent materials.

Technical Information



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