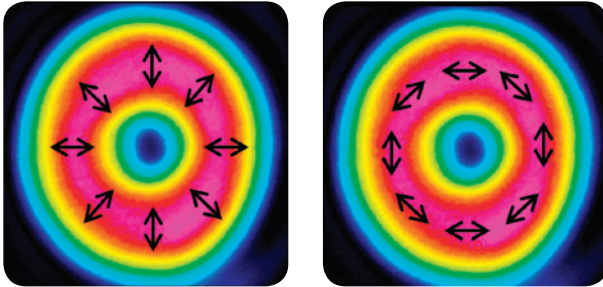


S-WAVEPLATES

S-waveplate is a super-structured waveplate which converts linear polarization to radial or azimuthal polarization. Product is unique for its high damage threshold 10 times exceeding alternative devices: according to ISO 11254 – 2 is θ 1000-on-1 = 22.80 \pm 2.74 J/cm², at (λ = 1064 nm, τ = 3.5 ns, f = 10 Hz) S-waveplate is fabricated inside UVFS bulk.



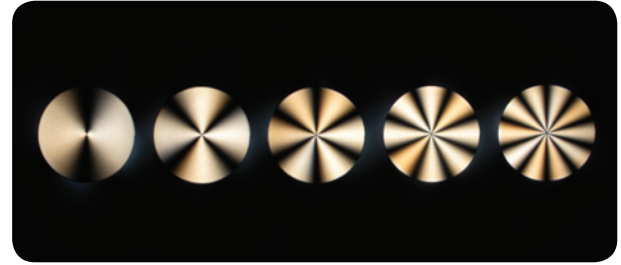
Radial (left) and azimuth (right) polarization beam intensity distributions (black arrows show electromagnetic field orientation).

Standard specifications

Material	UVFS
Diameter tolerance	+0/-0.1 mm
Thickness tolerance	\pm 0.1 mm
Surface quality	20-10 S-D
Surface flatness	$< \lambda/8@632.8$ nm
Parallelism error	< 30 arcsec

Features

- Converts linear polarization to radial or azimuthal
- Generates optical vortex (if incident polarization is circular)
- High damage threshold
- 50-90% transmission (AR coatings applicable)
- Large aperture possible (up to 10 mm or bigger; standard 6 mm)
- No "ineffective center" proble
- No segment stitching



Benefits

Radial polarization enables focusing of laser beam into smaller spot size (with high NA>0.9 optics). Focused azimuth polarization remains ring shaped. For polarization direction sensitive applications radial/azimuth polarization allows same machining properties in all directions. It is also applicable in optical tweezers, STED microscopy or any other depletion application.

Catalog Items

Product ID	Operation Wavelength, nm	Transmission	Clear Aperture, mm
RPC-488-2	488 \pm 15	>40 %	2
RPC-488-6			6
RPC-515-02	515 \pm 20	>45 %	2
RPC-515-04			4
RPC-515-06			6
RPC-632-2			2
RPC-632-4	632 \pm 20	> 50 %	4
RPC-632-6			6
RPC-800-02			2
RPC-800-04	800 \pm 25	>55 %	4
RPC-800-06			6
RPC-800-08			8
RPC-1030-02	1030 \pm 35	>65 %	2
RPC-1030-04			4
RPC-1030-06			6
RPC-1030-08			8
RPC-1550-02	1550 \pm 40	>75 %	2
RPC-1550-04			4
RPC-1550-06			6

* Custom wavelength and size converters are available on request.