

ULTRA-THIN WAVEPLATE/RETARDER

UTWR Series

(Single-Plate, Wideband, True Zero-Order Version)

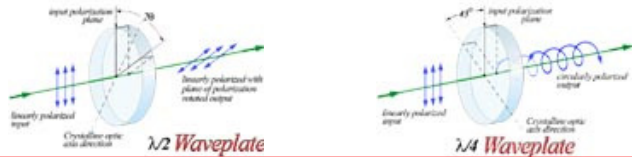


FREE SPACE LASER USE

Call for single mode fiber pigtailed modules

FEATURES

- True zero-order design;
- Single plate, very thin for lowest dispersion
- Most excellent thermal stability
- Low tolerance with wideband operation
- High damage threshold > 1GW/cm²
- Ring mounted for safe & easy mounting



Principles of Waveplate:

Waveplates (retardation plates/phase shifters) are made from materials which exhibit birefringence effect. The velocities of the extraordinary and ordinary rays through the birefringence materials vary inversely with their refractive indices. The difference in velocities gives rise to a phase difference when the two beams recombine. In the case of an incident linearly polarized beam this is given by $a=2\pi d(n_e-n_o)/\lambda$ (a : phase difference; d : thickness of waveplate; n_e , n_o : refractive indices of extraordinary and ordinary rays respectively; λ : wavelength). At any specific wavelength the phase difference is governed by the thickness of the retarder.

Main Specifications:

Substrate Materials:	Crystal quartz typ. (or MgF ₂ crystal upon request)
Clear Aperture(CA):	Ø5mm, Ø10mm, Ø12.7mm, Ø15mm, Ø20mm, Ø25.4 Ø30mm, Ø38.1mm, Ø50.8mm typ; per request
Operation Wavelength(nm):	244, 248, 266, 355, 400, 450, 488, 514, 532, 546, 633, 650, 670, 780, 800, 850, 980, 1030, 1060, 1300, 1480, 1550, 1610, or, per custom requested.
Waveplate Thickness:	< 0.100mm typ (ultra-thin/single plate, without cement)
Operation Bandwidth:	> 30nm typ; >50nm upon request
Retardance Accuracy:	< $\lambda/300$ typ.; Special request for $\lambda/500$
Beam Deviation (max):	10 arc-second
Wavefront Distortion:	< $\lambda/10$
Surface Quality:	10 - 5 Scratch-Dig(MIL standard)
Outer Diameter (OD):	All with ring-mounted; 05=Ø0.5"; 10=Ø1", 15=Ø1.5" ; 20=Ø2"
OD Tolerance:	-0.10, +0.00mm
Damage Threshold:	> 1GW/cm ² peak power for pulsed laser
AR Coated:	< 0.1% reflectivity @ center wavelength specified

Warranty: 12 months standard. All products are guaranteed to be free from defects in materials and workmanship for a period of one year from date of purchase. Photonik reserves the right to repair or replace defective products at our option. This warranty does not apply to failure of the product due to misuse, abuse, accident, or neglect. Our liability is limited to the price of the part or service we are providing.

Photonik reserves the rights to change product designs and specifications at any time without notice.

Ordering Information:

UTWR	CA/OD SIZE	WAVELENGTH	RETARDATION	COATING
Product Code	Define CA/OD e.g. 15/10 is for CA=15mm with 1" OD	Center Wavelength(nm): 244, 248, 266, 355, 400, 450, 488, 514, 532, 546, 633, 650, 670, 780, 800, 850, 980, 1030, 1060, 1300, 1480, 1550, 1610. S: per requested.	Retardation: 1/4 : Quarter-Wave; 1/2 : Half-Wave; S : User specified;	Coating Type: NC : No coating; DAR : Double side AR at center wavelength S : Custom coating

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