Waveplate

Waveplate is an optics in which the polished faces contain the optical axis.All light incidents normal to the surface are composed of components polarized paralle and perpendicular to the axis.In such a device,light polarized parallel to the axis will propagate slower than light polarized perpendicular to the axis.As the light propagates through the optic,the phase shift between the two components increases with thickness.The phase shift is called te retardance.The most popular retarders are quarter and half wave.

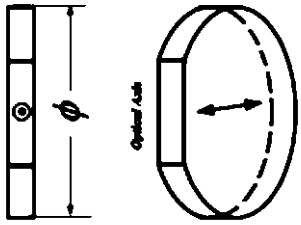
With an appropriate choice of thickness,any degree of retardance may be achieved at any wavelength for which quartz is transparent.However,the minimum thickness necessary to achieve a mechanically strong part corresponds to several full waves of retardance.

Hontec Optics can produce: Low Order Waveplate, Zero Order Waveplate, Dual Wavelength Waveplate, Achromatic Waveplate.

Low Order Waveplate

The low (multiple) order waveplate is designed to give a retardance of several full waves, plus the desired fraction. This result in a single, physically robust component with desired performance

Single Plate Low Order Waveplate



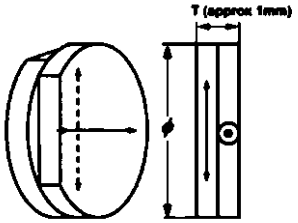
Single Plate Low Order Waveplate

The low order waveplate Specifications:
Material:Quartz
Dimension Tolerance:+0.0/-0.1mm
Surface Quality:20/10
Flatness:λ/8@633nm
Parallelism:<1 arc Second
Retardation Tolerance:λ/300
Clear Aperture: >90%
AR Coated:R<0.2%@Wavelength
Standard WaveLength:266nm,355nm,532nm,63.28nm,780nm, 808nm,850nm,980nm,1064nm,1310nm,1480nm,1550nm

Cemented Zero Order Waveplate

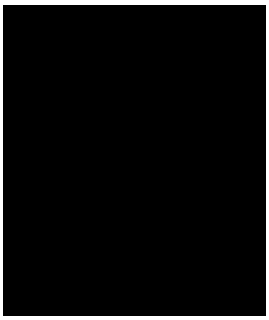
Cemented zero order waveplate is constructed by two quartz plates with their fast axis crossed, the two plates are cemented by UV epoxy. The difference in thickness between the two plates determines the retardance. Zero order waveplates offer a substantially lower dependence on temperature and wavelength change than multi-order waveplates

Zero Order Waveplate – Optical Cemented



Optical Cemented
High Damage Threshold
AR Coated, R<0.2%
Better Temperature Bandwidth
Wide Wavelength Bandwidth

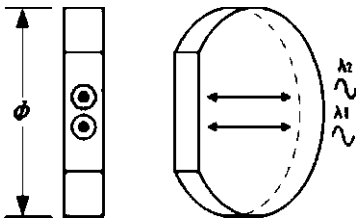
Zero Order Waveplate Specifications:
Specification
Material:Quartz
Dimension Tolerance:+0.0/-0.1mm
Surface Quality:20/10 Scratch/Dig
Flatness:λ/8@633nm
Parallelism:<1 arc Second
Retardation Tolerance:λ/500
Clear Aperture: >90%
AR Coated:R<0.2%@Wavelength
Standard Wavelength:266nm,355nm,532nm,63.28nm,780nm,
808nm,850nm,980nm,1064nm,1310nm,1480nm,1550nm



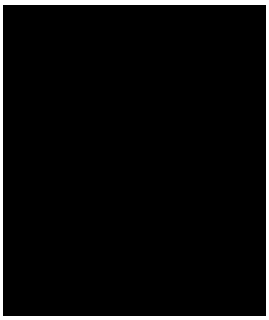
Dual Wavelength Waveplate

This waveplate is a special kind of multi order waveplate. Dual wavelength waveplate is designed to be used in dual wavelength setups, for example, it can be operated as a quarter wave-plate @1064nm and as a half waveplate @532nm at the same time. It's always used to manage the states of polarization of laser beams to obtain maximum conversion efficiency.

Thickness: < 2.0mm
Optional wavelength available
High damage threshold
RoHS Compliant



Dual wavelength waveplate Specifications:
Specifications:
Material:Quartz
Dimension Tolerance:+0.0/-0.1mm
Surface Quality:20/10
Flatness:λ/8@633nm
Parallelism:<1 arc Second
Retardation Tolerance:λ/300
Clear Aperture: >90%
AR Coated:R<0.2%@Wavelength
Standard WaveLength:800nm&400nm,1064nm&532nm,



Achromatic Waveplate

Achromatic waveplate is similar to zero order waveplate except that the two plates are made from different birefringent crystals. Since the dispersion of the birefringence of two materials is different, it is possible to specify the retardation values at a broad wavelength range. So, the retardation will be less sensitive to wavelength change. In other words, it can be used at a broadband wavelength range.