



Achromatic Waveplate



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Wholesale Achromatic Waveplate from China A-Star optical. You can Online order our Achromatic Waveplate or other optical waveplates. *Unlike standard waveplates*, Achromatic Waveplates (Retarders) provide a constant phase shift independent of the wavelength of light that is used. This wavelength independence is achieved by using two different birefringent crystalline materials. An Achromatic Waveplate, AWP, is similar to a Zero-Order Waveplate, which is made from two pieces of Crystal Quartz except that the AWP is composed of one piece of Crystal Quartz and one piece of Magnesium Fluoride, MgF₂. Both of these materials are birefringent, however, by proper matching of the birefringent changes in one material with those of the second, retardation changes are minimized as the wavelength changes. This phenomenon produces a waveplate whose change in retardation is extremely small for large variations in wavelength.

Achromatic Waveplate Specifications:

Attribute	Achromatic Waveplate Specification
Material:	Quartz & MgF ₂
Dimension Tolerance:	+0.0/-0.1mm
Surface Quality:	40/20 Scratch/Dig
Flatness:	$\lambda/8@633\text{nm}$
Parallelism:	<1 arc Second
Retardation Tolerance:	$\lambda/100$
Retardation:	$\lambda/2$ & $\lambda/4$
Clear Aperture	> 90%
AR Coated	$R < 0.2\% @ \text{Wavelength}$

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