Optical Systems
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Aspheric Lenses
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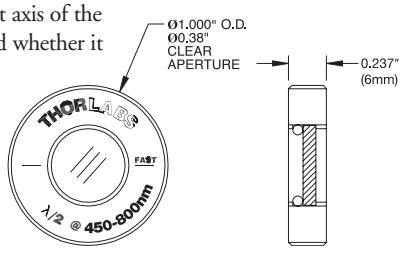
Prisms
Gratings
Polarization Optics
Beamsplitters
Filters & Attenuators
Gas Cells

Achromatic Wave Plates

A zero-order achromatic wave plate can be built by aligning the fast axis of a multi-order crystalline quartz wave plate with the slow axis of a magnesium fluoride wave plate, where the optical path length difference between the two wave plates is either λ/4 or λ/2. The use of crystalline quartz and magnesium fluoride allows the dispersive effects to be minimized so that a nominally flat spectral response is achieved over the operating range of the achromatic wave plate.

AQWP05M-630

The achromatic wave plates are constructed by placing an etched stainless steel spacing ring between the two multi-order wave plates and epoxying these three pieces together; then the achromatic wave plate assembly is placed into a threaded Ø1" anodized aluminum housing and held in place using an O-ring. The epoxy is only applied outside of the clear aperture in order to prevent the damage threshold from decreasing. The wave plate housing is engraved with a line indicating the orientation of the fast axis of the wave plate as well as engraving that identifies the spectral operating range of the wave plate and whether it is a λ/4 or λ/2 wave plate.



- Spectrally Flat Retardance
- High Energy Air-Spaced Design
- Higher Damage Threshold Than Polymer Film Achromatic Wave Plates
- Quarter- and Half-Wave Available
- Improved IR Performance
- OEM Pricing Available

Thorlabs provides quality OEM components at volume discounted prices. Please email optics@thorlabs.com.

Specifications

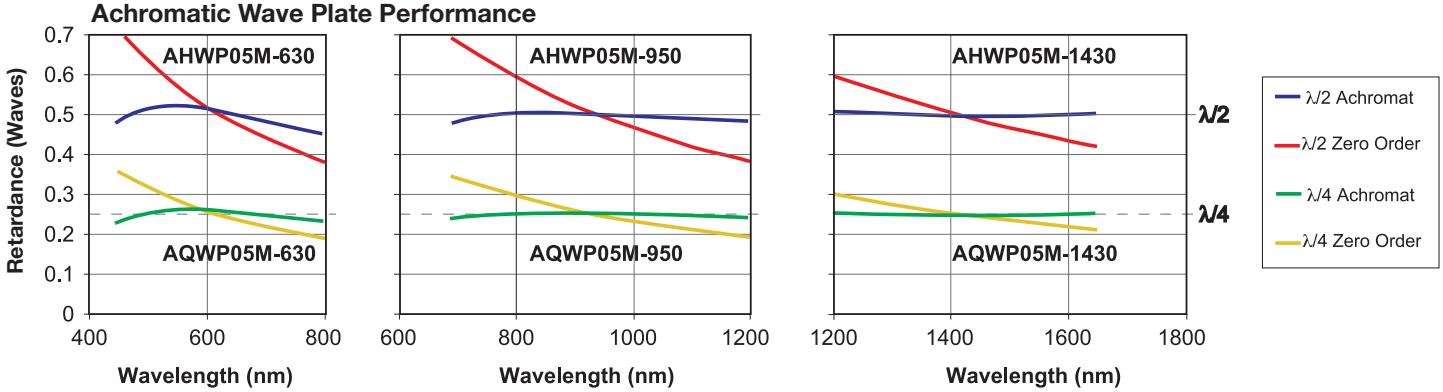
- **Substrate Material:** Crystalline Quartz & Magnesium Fluoride
- **Diameter:** 12.7mm ±0.1mm Unmounted 25.4mm Mounted
- **Retardance Accuracy (typ):** <λ/150 RMS Over Spectral Range
- **Beam Deviation:** <10arcsec
- **Transmitted Wavefront Error:** <λ/4
- **Clear Aperture:** Ø0.38" (Ø9.6mm)
- **Surface Quality:** 40-20 Scratch-Dig
- **Reflectance:** <0.5% Per Surface
- **Damage Limit:** 2J/cm² @ 10ns 1.064µm

RELATED PRODUCT

GLAN-LASER
Prism Polarizers
10mm x 10mm Aperture

See Page 817

Achromatic Wave Plate Performance



Mounted Achromatic Wave Plates

ACHROMATIC Quarter-Wave Plate	ACHROMATIC Half-Wave Plate	$	£	€	RMB	DESCRIPTION
AQWP05M-630	AHWP05M-630	$ 780.00	£ 491.40	€ 725,40	¥ 7,449.00	450-800nm
AQWP05M-950	AHWP05M-950	$ 780.00	£ 491.40	€ 725,40	¥ 7,449.00	690-1200nm
AQWP05M-1430	AHWP05M-1430	$ 780.00	£ 491.40	€ 725,40	¥ 7,449.00	1200-1650nm