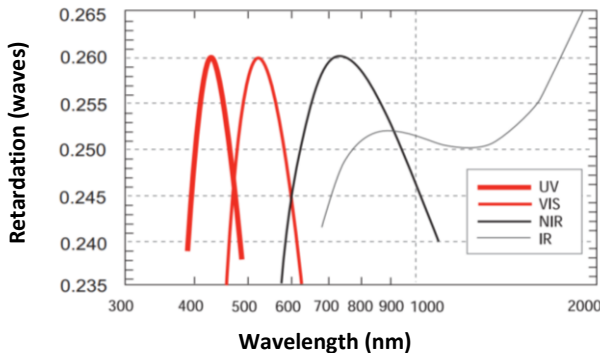


Bi-Crystalline Achromatic Retarder

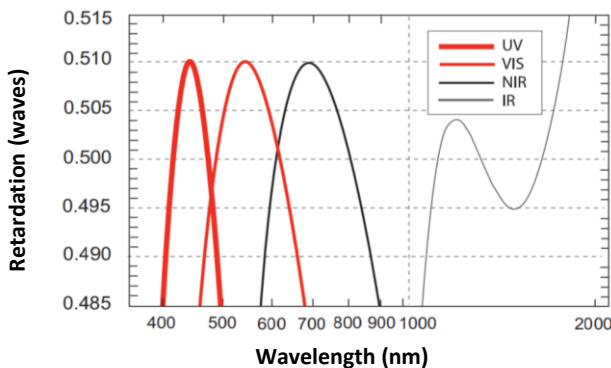
Meadowlark Optics is pleased to offer a selection of quarter and half-wave achromatic retarders that span the UV, visible, near IR and IR portions of the spectrum. Two multi-order crystalline retarders, one made of crystalline quartz and the other magnesium fluoride, are combined in a subtractive mode to give an effective zero-order waveplate. By a careful choice of waveplate thicknesses, retardance dispersion is balanced to give a nearly constant retardance (in waves) over a broad range of wavelengths. The useable wavelength range is defined to give a retardance value within $\lambda/100$ of the nominal value. Custom designs with larger achromatic ranges or deeper UV wavelengths are available on request.

Bi-Crystalline Achromats are similar in achromatic performance to our polymer achromats in the visible, but they excel in the IR. They have higher power handling capability than our polymer achromats and can withstand higher storage temperatures. Their field of view is narrow compared to polymer achromats. Typically, they cannot be expected to meet their retardance accuracy for rays whose incidence angles exceed 1.5° . If you must have the performance of a Bi-Crystalline Achromat and a large field of view, call us. We have a proprietary design that can be your polarization solution.

Quarter-Wave Bi-Crystalline Achromatic Retarder Performance



Half-Wave Bi-Crystalline Achromatic Retarder Performance



Key Features

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- High Damage Threshold
- Volume Pricing
- Superior IR performance
- Broad Spectral Performance
- UV Models Available

Waveplate Suite

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- Precision Retarder
- Precision Achromatic Retarder
- Precision Superachromatic Retarder
- Dual-Wavelength Retarder
- Wide Field Retarder
- Liquid Crystal Variable Retarder
- Polymer Film Retarder
- Raptor Applied Polymer Retarder
- Large Aperture Retarder
- Bi-Crystalline Achromatic Retarder



SPECIFICATIONS	
Retarder Material	Quartz & Magnesium Fluoride
Retardance	$\lambda/4$ or $\lambda/2$
Temp. Coefficient of Retardance	$\lambda/500$ per °C
Standard Wavelengths - Quarter Wave	
Ultraviolet	395 – 465 nm
Visible	475 – 590 nm
Near Infrared	600 – 900 nm
Infrared	690 – 2050 nm
Standard Wavelengths - Half Wave	
Ultraviolet	412 – 475 nm
Visible	500 – 650 nm
Near Infrared	600 – 840 nm
Infrared	1190 – 1660 nm
Transmitted Wavefront Distortion	$\leq \lambda/4$
Surface Quality	40 – 20 scratch-dig
Beam Deviation	≤ 1 arc-min
Reflectance (per surface)	$\leq 0.5\%$ at normal incidence
Storage Temperature	-40°C to +75°C
Threshold	2 J/cm ² , 10 ns, 1064 nm

ORDERING INFORMATION		
Mounted		
Clear Aperture in. (mm)	Diameter in. (mm)	Part Number
Half Wave		
0.40 (10.2 mm)	1.00 (25.4 mm)	CHM – 050
Quarter Wave		
0.40 (10.2 mm)	1.00 (25.4 mm)	CQM – 050
Unmounted		
Clear Aperture in. (mm)	Diameter in. (mm)	Part Number
Half Wave		
0.40 (10.2 mm)	0.50 (12.7 mm)	CH – 050
Quarter Wave		
0.40 (10.2 mm)	0.50 (12.7 mm)	CQ – 050

We offer standard Bi-Crystalline Achromatic Retarders to cover 4 regions of the spectrum: UV, VIS, NIR, IR
Please specify wavelength region when placing order.