

Precision Achromatic Retarder

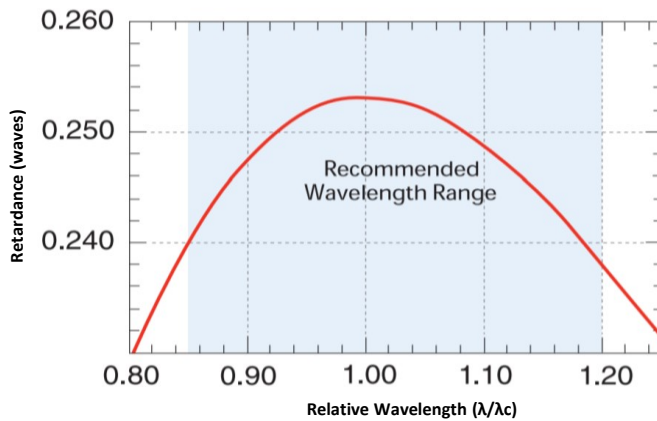
Meadowlark Optics Precision Achromatic Retarders are designed to provide a nearly constant retardance over a broad wavelength region. Standard quarter- and half-wave devices are available for common wavelength regions in the visible and near infrared.

Our Precision Achromatic Retarders consist of carefully aligned birefringent polymer sheets laminated between precision polished, optically flat N-BK7 windows. Assembly is quite similar to the assembly of our Precision Retarders.

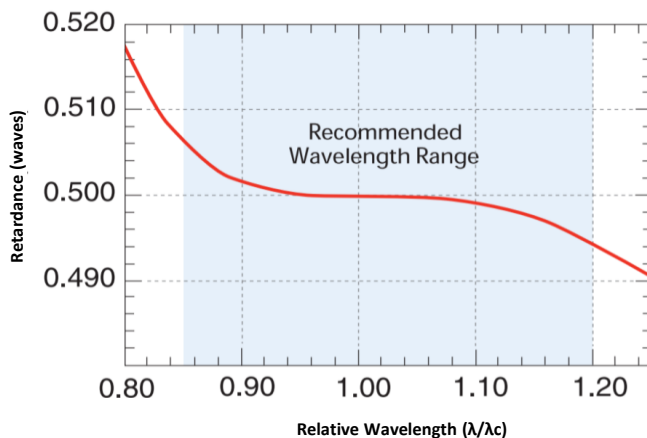
Optical transmittance varies slightly from the Precision Retarder because several polymer layers are used in each Achromatic Retarder.

We provide retardance accurate to $\lambda/100$ for all wavelengths in the operating range. Achromatic retarders are an excellent choice for applications requiring broad wavelength use.

Quarter-Wave Achromatic Retarder Performance



Half-wave Achromatic Retarder Performance



Key Features

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Broad spectral range

Superior field of view

Thermally Stable

Custom Wavelengths 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



ORDERING INFORMATION

Mounted				
Diameter ±0.005 in. (±0.13 mm)	Clear Aperture in. (mm)	Thickness ±0.020 in. (±0.51 mm)	λ/4 Part #	λ/2 Part #
1.00 (25.40)	0.40 (10.20)	0.25 (6.35)	AQM – 050 – λ	AHM – 050 – λ
1.00 (25.40)	0.70 (17.80)	0.35 (8.90)	AQM – 100 – λ	AHM – 100 – λ
2.00 (50.80)	1.20 (30.50)	0.50 (12.70)	AQM – 200 – λ	AHM – 200 – λ
Unmounted				
Diameter + 0/-0.010 (+0/-0.25mm)	Clear Aperture in. (mm)	Thickness ±0.020 in. (±0.51 mm)	λ/4 Part #	λ/2 Part #
0.50 (12.70)	0.40 (10.20)	0.14 (3.60)	AQ – 050 – λ	AH – 050 – λ
1.00 (25.40)	0.80 (20.30)	0.28 (7.10)	AQ – 100 – λ	AH – 100 – λ
2.00 (50.80)	1.60 (40.60)	0.50 (12.70)	AQ – 200 – λ	AH – 200 – λ

Custom sizes and retardances are available. Please contact your sales engineer for assistance.

SPECIFICATIONS

Retarder Material	Birefringent Polymer
Substrate Material	N-BK7
Standard Wavelengths	
545 nm	(485 – 630 nm operating range)
630 nm	(555 – 730 nm operating range)
720 nm	(630 – 835 nm operating range)
840 nm	(735 – 985 nm operating range)
1060 nm	(920 – 1240 nm operating range)
1400 nm	(1200 – 1650 nm operating range)
Custom Wavelengths	400 – 1800 nm (please specify)
Retardance Accuracy	≤ λ/100
Transmitted Wavefront Distortion	≤ λ/4
Surface Quality	40 – 20 scratch-dig
Beam Deviation	≤ 1 arc-min
Temperature Range	-20°C to +50°C (Operating)
Laser Damage Threshold	500 W/cm ² , CW 600 mJ/cm ² , 20 ns, visible 4 J/cm ² , 20 ns, 1064 nm