Wide Field Retarder

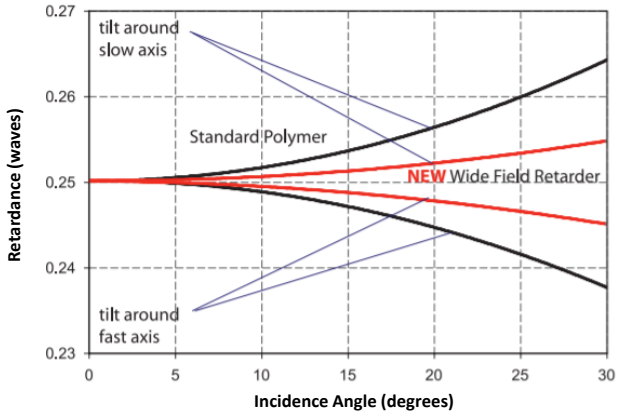
Meadowlark Optics now offers Wide Field Retarders, the latest innovation in near zero-order polymer retarder technology. At their design wavelength, Wide Field Retarders provide a consistent retardance value over a wide acceptance angle, out to 30° or more.

Standard quarter- and half-wave designs are available for common wavelengths in the visible to near infrared region. The graphs show the Wide Field Retarder performance as a function of incidence angle for the both half-wave and quarter-wave designs.

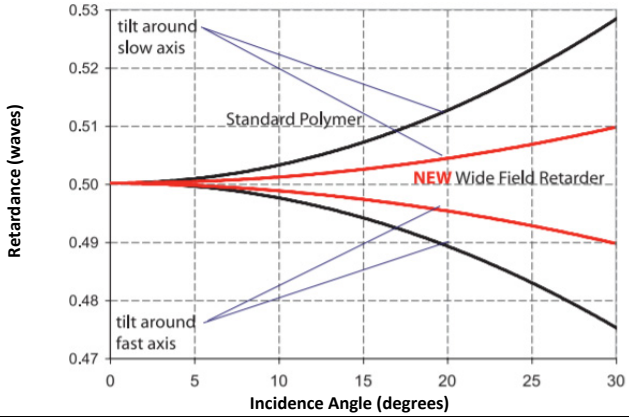
Multilayer broadband antireflection (BBAR) coatings are included as standard. Note that BBAR coating performance varies with incidence angle; these coatings perform best at (or near) normal incidence.

As with all Meadowlark Optics retarders, the fast axis is conveniently marked. Custom retardance values are available for wavelengths from 400-1800 nm. Please call for application assistance or to request a custom quotation.

Quarter-Wave Wide Field Retarder Performance vs. Incidence Angle



Half-Wave Wide Field Retarder Performance vs. Incidence Angle



Key Features

- Unmatched off-axis performance
- Standard and custom wavelength retarders
- Mounted and unmounted versions available
- Off-axis performance ideal for uncollimated light applications

Waveplate Suite

- 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	Birefringent Polymer
Substrate Material	N-BK7
Standard Wavelengths	532, 632.8, 670, 780, 850, 1064, and 1550 nm
Custom Wavelengths	400 – 1800nm (please specify)
Retardance	λ/2 and λ/4
Retardance Accuracy	≤ λ/250 at normal incidence at the center of the part
Retardance Change (at 30˚tilt)	
Half-wave Quarter-wave	≤ λ/100 ≤ λ/200
Transmitted Wavefront Distortion	≤ λ/2
Surface Quality	60 – 40 scratch-dig
Beam Deviation	≤ 1 arc-min
Reflectance (per surface)	
At normal incidence At 30˚ incidence	≤ 0.5% ≤ 1.0%
Operating Temperature	0˚C to 40˚C

ORDERING INFORMATION

Mounted			
Clear Aperture> in. (mm)	***Dimensions ± 0.005 in. (± 0.13 mm)***	***Thickness in. (mm)***	***Part Number***
Quarter Wave			
0.40 (10.2 mm)	Ø1.00 (Ø25.4 mm)	0.25 (6.35 mm)	WQM – 050 – λ
0.70 (17.8 mm)	Ø1.00 (Ø25.4 mm)	0.35 (8.9 mm)	WQM – 100 – λ
Half Wave			
0.40 (10.2 mm)	Ø1.00 (Ø25.4 mm)	0.25 (6.35 mm)	WHM – 050 – λ
0.70 (17.8 mm)	Ø1.00 (Ø25.4 mm)	0.35 (8.9 mm)	WHM – 100 – λ
Unmounted			
Clear Aperture in. (mm)	***Dimensions + 0/-0.010 (+0/-0.25mm)***	***Thickness in. (mm)***	***Part Number***
Quarter Wave			
0.40 (10.2 mm)	Ø0.50 (Ø12.7 mm)	0.14 (3.6 mm)	WFQ – 050 – λ
0.80 (20.3 mm)	Ø1.00 (Ø25.4 mm)	0.28 (7.1 mm)	WFQ – 100 – λ
Half Wave			
0.40 (10.2 mm)	Ø0.50 (Ø12.7 mm)	0.14 (3.6 mm)	WFH – 050 – λ
0.80 (20.3 mm)	Ø1.00 (Ø25.4 mm)	0.28 (7.1 mm)	WFH – 100 – λ

Custom sizes and retardance values are available.
Please contact your Meadowlark Optics sales engineer for a custom quote.