

Wide Field Retarder

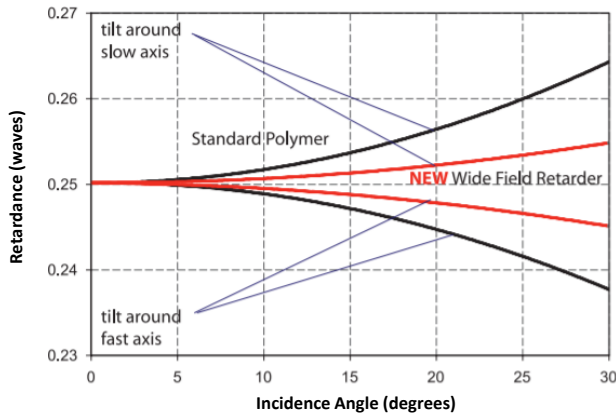
Meadowlark Optics now offers Wide Field Retarders, the latest innovation in near zero-order polymer retarder technology. At their design wavelength, Wide Field Retarders provide a consistent retardance value over a wide acceptance angle, out to 30° or more.

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.

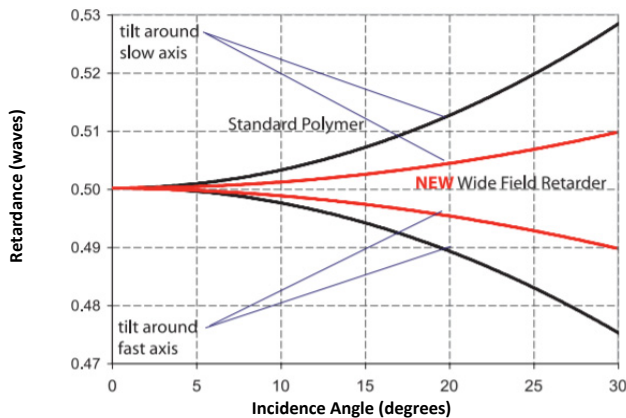
Multilayer broadband antireflection (BBAR) coatings are included as standard. Note that BBAR coating performance varies with incidence angle; these coatings perform best at (or near) normal incidence.

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

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

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	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	$\lambda/2$ and $\lambda/4$
Retardance Accuracy	$\leq \lambda/250$ at normal incidence at the center of the part
Retardance Change (at 30° tilt)	
Half-wave	$\leq \lambda/100$
Quarter-wave	$\leq \lambda/200$
Transmitted Wavefront Distortion	$\leq \lambda/2$
Surface Quality	60 – 40 scratch-dig
Beam Deviation	≤ 1 arc-min
Reflectance (per surface)	
At normal incidence	$\leq 0.5\%$
At 30° incidence	$\leq 1.0\%$
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)	$\varnothing 1.00$ ($\varnothing 25.4$ mm)	0.25 (6.35 mm)	WQM – 050 – λ
0.70 (17.8 mm)	$\varnothing 1.00$ ($\varnothing 25.4$ mm)	0.35 (8.9 mm)	WQM – 100 – λ
Half Wave			
0.40 (10.2 mm)	$\varnothing 1.00$ ($\varnothing 25.4$ mm)	0.25 (6.35 mm)	WHM – 050 – λ
0.70 (17.8 mm)	$\varnothing 1.00$ ($\varnothing 25.4$ 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)	$\varnothing 0.50$ ($\varnothing 12.7$ mm)	0.14 (3.6 mm)	WFQ – 050 – λ
0.80 (20.3 mm)	$\varnothing 1.00$ ($\varnothing 25.4$ mm)	0.28 (7.1 mm)	WFQ – 100 – λ
Half Wave			
0.40 (10.2 mm)	$\varnothing 0.50$ ($\varnothing 12.7$ mm)	0.14 (3.6 mm)	WFH – 050 – λ
0.80 (20.3 mm)	$\varnothing 1.00$ ($\varnothing 25.4$ 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.