

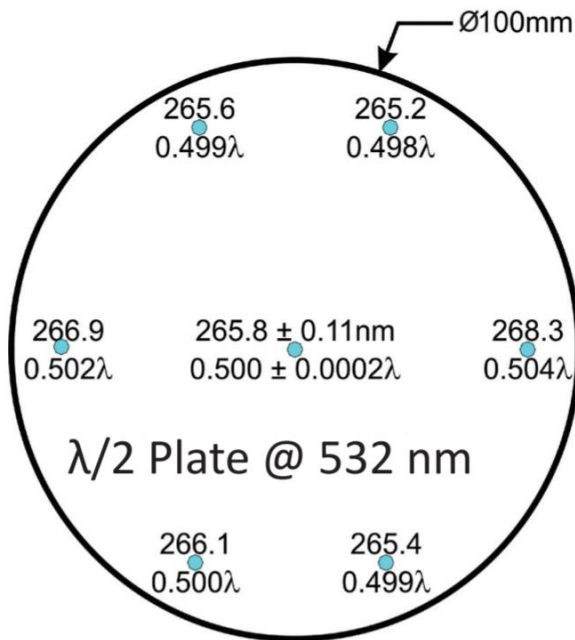
Large Aperture Retarder

For many astronomical, aerospace, and defense projects, large aperture retarders are required. Meadowlark Optics has over thirty-five years of retarder manufacturing expertise and is able to manufacture from a wide variety of materials to facilitate high or low power applications.

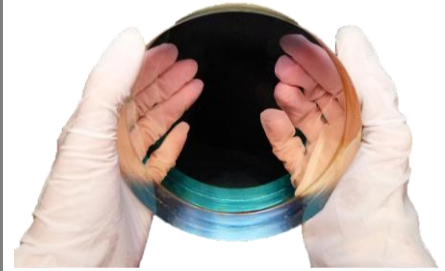
Waveplates up to 150 mm diameter are available. Some materials allow retarders to be used over different wavelengths from the ultraviolet, through the visible and into the near infrared.

Meadowlark Optics uses proprietary methods to ensure the best spatial uniformity of its polymer and crystalline retarders. These retarders have a spatial uniformity of better than two percent across the clear aperture and with the correct substrates, can have a wavefront distortion that is on par with Meadowlark Optics' Precision Retarders.

Meadowlark Optic's liquid crystal variable retarders can also be built with large clear apertures. Please contact your Meadowlark Optics Sales Engineer for assistance and a custom quote.



Actual spatial retardance data from a 100mm Large Aperture Retarder



Key Features

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Outer diameter up to 6 inches

Clear aperture > 90%

Custom size retardance and wavelength range available

Spatial uniformity less than 2% across clear aperture

Various materials available: (polymer, quartz, sapphire, magnesium fluoride, liquid crystal)

Less than 15mm Thickness

True Zero-Order

Broad Wavelength ranges

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 (Birefringent) Material Options	Polymer Crystalline Quartz Magnesium Fluoride Sapphire Liquid Crystal†
Wavelength	300-2500 nm (please specify)
Retardances	0 to 100s of λ
Retardance Accuracy	
Center Spatial Uniformity	$\leq \lambda/100$ to $\leq \lambda/350$ $\leq \lambda/10$ to $\leq \lambda/100$
Transmitted Wavefront Distortion	$\leq \lambda$ to $\leq \lambda/5$ (P-V @ 633) $\lambda/4$ to $\lambda/20$ (RMS @ 633)]
Surface Quality	40 – 20 scratch-dig to 80 – 50 scratch-dig
Outside Dimensions	Up to 150 mm

Large Aperture retarders are available in a variety of different sizes and shapes with custom retardances at specific wavelengths. Combinations of different materials allow custom achromatic, athermal or wide angle designs. Please contact your Meadowlark Optics Sales Engineer for a custom quote.