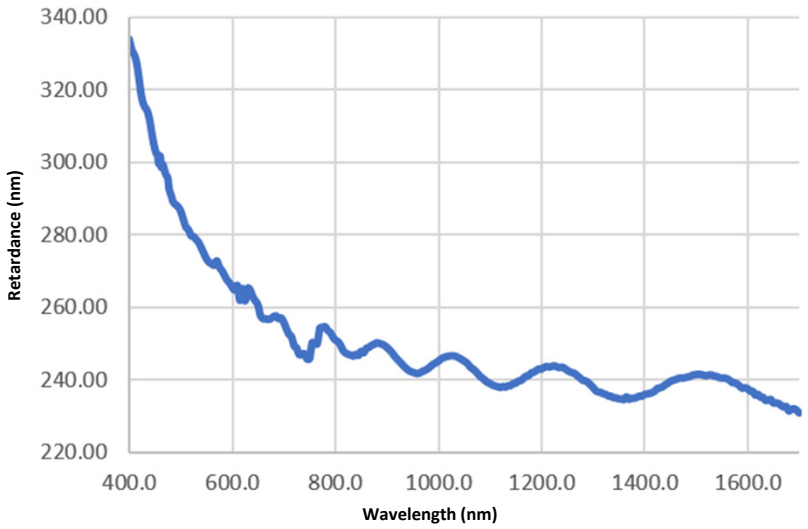
RAPtor Applied Polymer Retarders

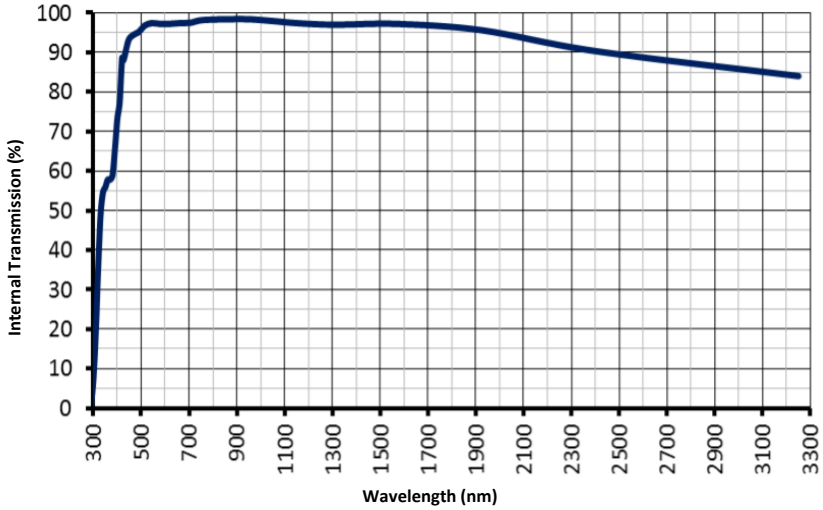
Retarder-Applied-Polymer parts are manufactured using a proprietary high birefringent polymer and are true zero order retarders with a typical film thickness less than 10 microns. These parts can be added to customer provided windows and other plano or slightly curved substrates to produce truly custom solutions.

These retarders were originally designed for use in astronomy but have applications wherever a true zero order waveplate would be used. Meadowlark Optics can apply these retarders to substrates from 10 mm to 100 mm diameter (and even larger on a custom basis.)

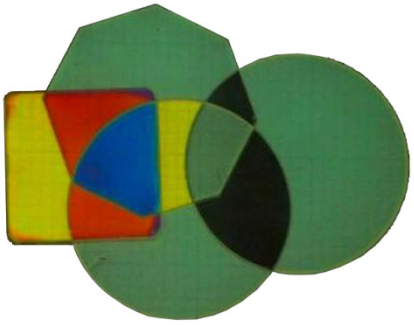
Actual Retardance Data for a Sample RAPtor Applied Polymer Retarder



Transmission vs. Wavelength



Raptor Retarder films can be applied to your substrates and surfaces. They can be tuned to custom retardance values and are transmissive over a large wavelength range.



Key Features

- Extremely thin and large diameter
- Curved surfaces
- High temperature resistance
- Custom sizes, shapes, wavelengths and retardances available

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	High Birefringence Polymer
Retarder Thickness	< 10 µm**
Substrate Thickness	1.1 mm fused silica
Wavelength Range and Retardance	400 – 1064 nm (λ/2) 400 – 1550 nm (λ/4)
Retardance Accuracy	< ± λ/100
Retardance Uniformity	< λ/100 [<5 nm]
Clear Aperture	80%
Reflectivity (back surface)	≤ 0.5%
Transmitted Wavefront Distortion	≤ λ/2 (P-V @ 633 nm) ≤ λ/8 (RMS @ 633 nm)
Beam Deviation	≤ 5 arc sec
Surface Quality	80-50 scratch-dig
Operating Temperature	-20 °C to 80 °C
Storage Temperature	-40 °C to 80 °C

***exact thickness design dependent*

STOCK ORDERING INFORMATION
(Quarter-Wave and Half-Wave parts)

Diameter in. (mm)	*Clear Aperture in. (mm)*	*Part Number*
Ø1.00 in. (25.4 mm)	Ø0.9 in. (22.9 mm)	PQ – 100 – λ PH – 100 – λ
Ø2.00 in. (50.8 mm)	Ø1.8 in. (45.7 mm)	-200 – λ PH – 200 – λ

CUSTOM DESIGN

Wavelength Range	350 – 3300 nm
Retardance Accuracy	< ± λ/200
Dimensions	Up to 150 mm diameter
Fast Axis Datum / Orientation	Customer specified
Substrate material/geometry/thickness	Customer specified