

BI-CRYSTALLINE ACHROMATIC WAVEPLATES



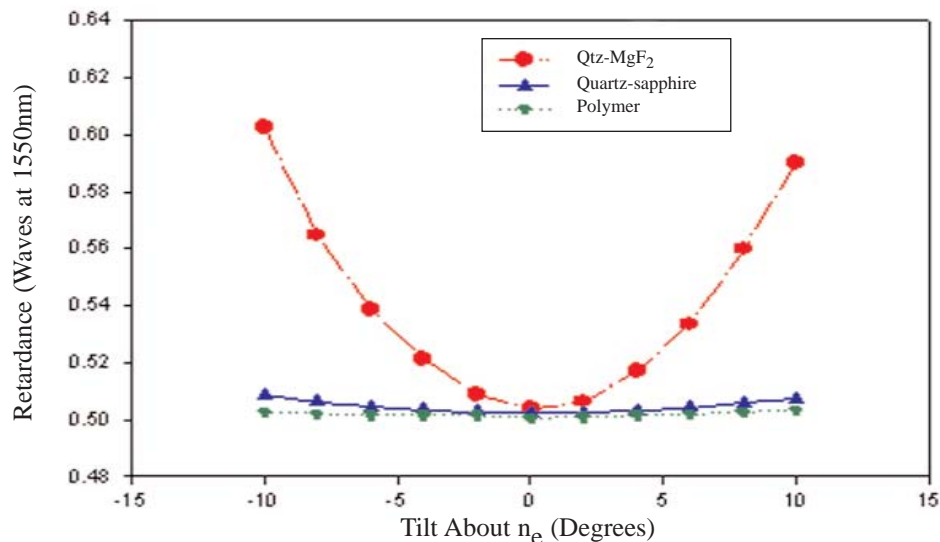
Meadowlark Optics' Bi-Crystalline Achromatic Waveplates

Achromatic waveplates are used in a variety of applications from laser light shows to Polarization Dependent Loss (PDL) correction to astronomical polarimetry all for one simple reason - they cover a broad range of wavelengths. The very idea that one quarter or half-waveplate can function with a $\lambda/100$ retardance accuracy over 200nm of retardance (in some cases over 600nm) is exceptional. At Meadowlark Optics, we don't find it so exceptional, we find it to be part of a typical day.

For over twenty five years Meadowlark Optics has been providing polarization solutions to our customers with exceptional products like our achromatic waveplates. Most of our customers are aware of our polymer-layered achromats that provide temperature stable retardance over a broad wavelength range, but not everyone knows about our bi-crystalline achromatic waveplates that offer their own set of unique benefits.

There are two kinds of bi-crystalline achromatic waveplates that Meadowlark Optics manufactures: The standard quartz-magnesium fluoride (Qtz.-MgF₂) and quartz-sapphire achromat. The Qtz.-MgF₂ design has been a stable contributor in optics for years providing high power handling capabilities and the ability to be made for any wavelength range. We have the quartz-sapphire achromatic waveplate that offers similar power handling capabilities as well as a large field of view. The breadth of the coverage in the IR region spans 600nm while maintaining $\lambda/100$ retardance accuracy. The field of view of these achromats is rivaled only by our polymer achromatic waveplates. We specialize in custom solutions to match your requirements.

Tilt about n_e for quartz-sapphire, Qtz-MgF₂ and Polymer Achromatic Wavplates



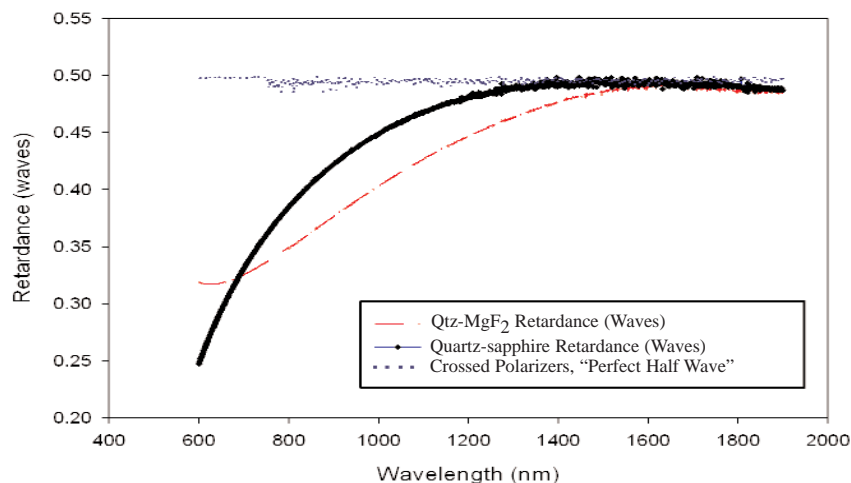
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Quartz-sapphire Specifications

Retardance:	$\lambda/4$ and $\lambda/2$
Retardance Accuracy:	$\lambda/100$ over wavelength range
Transmitted Wavefront Distortion:	$\lambda/4$
Surface Quality:	40-20 scratch and dig
Beam Deviation:	≤ 1 arc minute

Achromatic waveplates can be made for the visible, NIR and Mid-IR regions or they can be customized to fit the range you're working in. The quartz-sapphire and polymer achromatic waveplates come standard with AR coatings to control reflectivity. The achromatic performance of the quartz-sapphire design is amazingly flat from 1200nm to over 1800nm far exceeding the standard Qtz.-MgF₂ design.

Retardance (Waves) vs. Wavelength



Meadowlark Optics has a variety of polarization solutions available for your requirements. Our desire to manufacture and offer different styles of achromatic waveplates is just one way we work to help our customers find the right solution.

