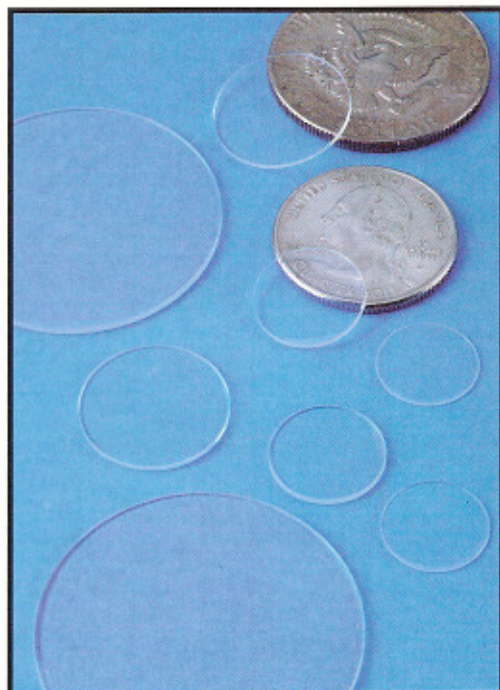


Sapphire Waveplates

Sapphire waveplates are a unique alternative to crystalline quartz for rugged visible and IR polarization control components. Sapphire is a tough birefringent crystalline material that has useful transmission from .25 to 4.7 microns. Sapphire transmission is > 98% in this wavelength region with AR coatings on two sides. It is intrinsically hard (Moh 9) and readily withstands harsh chemical environments. Sapphire waveplates are offered in half wave and quarter wave in both multiple and zero order configurations. Because sapphire can be made thinner than its counterpart in quartz, lower order waveplates can be manufactured; thereby reducing the errors inherent in higher order plates. Meller Sapphire waveplates are ideal for use in high power IR and Visible lasers where applications may include:



- Creation of circular polarization from linear or linear polarization from circular
- Reflection suppression when used with a polarizer
- Optical pumping and ellipsometry.
- Rotation of the plane of polarization in a laser
- Electro-optics modulation
- Variable ratio beam splitter when used with a polarizing cube
- Dual wavelength designs

Material	Laser Grade single crystal sapphire
Transmitted Wavefront	$\lambda/10$ at 632.8nm
Surface Quality	10-5 scratch-dig per MIL-0-13830A
Diameter Tolerance	+0.000", -0.010"
Parallelism	< or = 1.0 arc seconds
Clear Aperture	Central 85% of the diameter
Retardation	$\lambda/4$ and $\lambda/2$
Retardation Tolerance	Dependent on Wavelength .632 μ - > $\lambda/300$ 2.94 μ - > $\lambda/1000$
Optic Axis	Normal to flat (or dot) on diameter. Plates will be either "a" or "m" plane.
AR Coatings	"V" coatings and broadband AR coatings available upon request

Don't see what you're looking for? Call us for your custom optics needs!