

Achromatic Zero-Order Waveplates

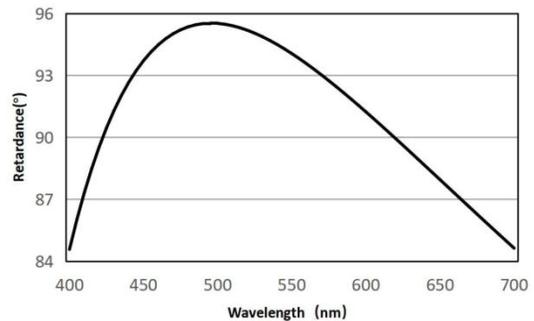
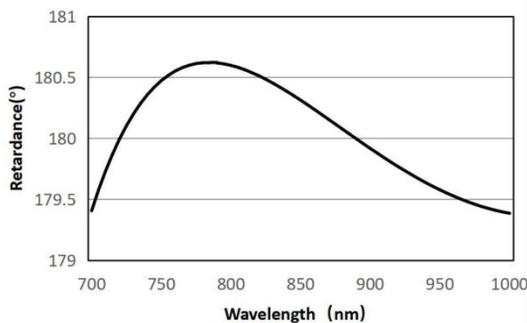


- Material: Crystal Quartz & MgF₂
- Custom dimension and shapes
- Diameter from 5 to 100 mm
- Clear aperture: Central 90% of diameter
- Transmission wavefront: $\lambda/10@632.8\text{nm}$
- Surface quality: 20-10 S/D
- Parallelism: $<1'$
- Retardation tolerance up to $\lambda/100$ over the wavelength range
- Multiple wavelength ranges available
- High laser damage threshold
- Mounted and unmounted waveplates are available

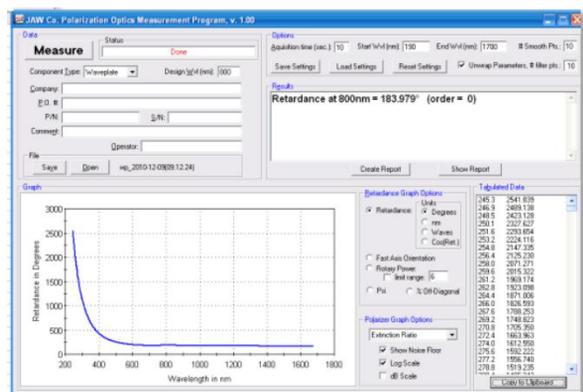
Achromatic Zero-Order waveplates are made of two different birefringent crystalline materials, such as Crystal Quartz and MgF₂ to achieve wavelength independence comparing to single material waveplates which are very sensitive to the wavelength change. Achromatic waveplates is an ideal choice for tunable, multiple and broad band wavelengths applications.

CASTECH designs Achromatic Zero-Order Crystal Quartz-MgF₂ waveplates with working wavelength range larger than 300nm and retardation accuracy better than $\lambda/50$ for $\lambda/2$ waveplate and better than $\lambda/100$ for $\lambda/4$ waveplate.

Metrology



JAW Ellipsometry Retardation Measurement



Retardation measured by Ellipsometry