



Gooch & Housego



Achromatic IR Wave Plates

Utilizing our position as the leading grower of large CdS and CdSe IR single-crystals with our unique proprietary modeling algorithms, Gooch and Housego's engineers take advantage of their extensive wave plate design experience to address specific solutions in the infrared between 3 to 12 μm .

Achromatic wave plates function in various mid-IR applications, such as controlling the polarization state of light throughout the spectrum available from CO₂ lasers.

IR wave plates in standard and custom holders come in multi-order, net-zero order, achromatic, and other custom configurations. Our high-performance broad-band AR coatings optimize optical transmission.

Gooch and Housego's combination of materials, design and assembly expertise ensures you of the highest quality IR wave plates for your demanding requirements.

Please contact the sales team for further information.

Key Features:

- Available between 3 to 12 μm
 - Typical ranges 3-5, 5-8, and 8-12 μm
 - Custom ranges available
- AR coatings designed for maximum performance
- Standard aperture diameters from 4 to 29 mm
- Anodized aluminum hardware
- 1" O.D. (XCN) and 2" O.D. (XPN) models

Applications:

- Astronomical
- Medical
- Industrial
- Defense



光技術をサポートする

株式会社オプトサイエンス

<http://www.optoscience.com>

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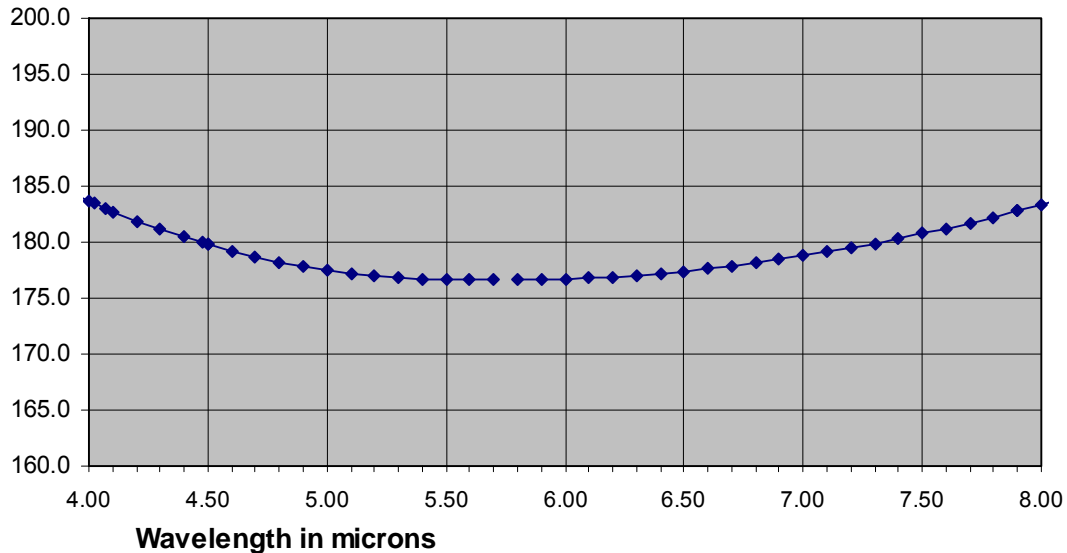
Optical Specifications

Parameter	Specification		Unit
Series	XCN	XPN	-
Outside Diameter	25.4	50.8	mm
Aperture Diameter	4, 6, 8 & custom to 13	Various from 8 to 29	mm
Retardance Values	Quarter wave, half wave, or custom		deg
Retardance Tolerance	Typically ± 10 over limited defined spectral range		deg
Single Pass Transmission	Typically ≥ 96 (center of range), ≥ 90 (end of range)		%
Standard Design Temperature	22		$^{\circ}\text{C}$

- Two-element achromatic wave plates depend upon complementary dispersion characteristics of paired birefringent materials.
- The path lengths through the two plates combine in optical series with their fast axes crossed at 90° to form a net zero order pair with the selected net retardance condition maintained as narrowly as feasible throughout the spectral span of interest.

Example Performance Curve

This chart illustrates the calculated retardance for an extended (4 to 8 μm) range half wave plate assuming ideal AR coating behaviour over the range. Limitations due to inherent material properties and AR coating designs often suggest restricting the spectral range to 5 to 8 μm to obtain more uniform performance.



Retardance in degrees for an achromatic half wave plate with elements of CdSe and CdS.