ACHROMATIC IR WAVEPLATE

XCN/XPN SERIES™

PRODUCT DATASHEET

Utilizing our position as the leading grower of large CdS and CdSe infrared (IR) single-crystals with our unique proprietary modelling algorithms, our engineers take advantage of their extensive waveplate design experience to address specific solutions in the infrared between 3-12 µm.

Achromatic waveplates function in various mid-IR applications, such as controlling the polarization state of light throughout the spectrum available from CO_2 lasers.

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

G&H's combination of materials, design and assembly expertise ensures you of the highest quality IR waveplates for your demanding requirements.

Please contact the sales team for further information.

Key Features

- Available from 3-12 µm
  - Typical ranges 3-5, 5-8, and 8-11 µm
  - Custom ranges available
- AR coatings designed for maximum performance
- Standard aperture diameters from 13 and 28 mm
- Anodized aluminium hardware
- 25.4 mm (1") O.D. (XCN) and 50.8 mm (2") O.D. (XPN) models

Application

- Astronomical observation
- Infrared sensors
- Life science test and measurement

XCN 13/XPN 28

Optical Specifications

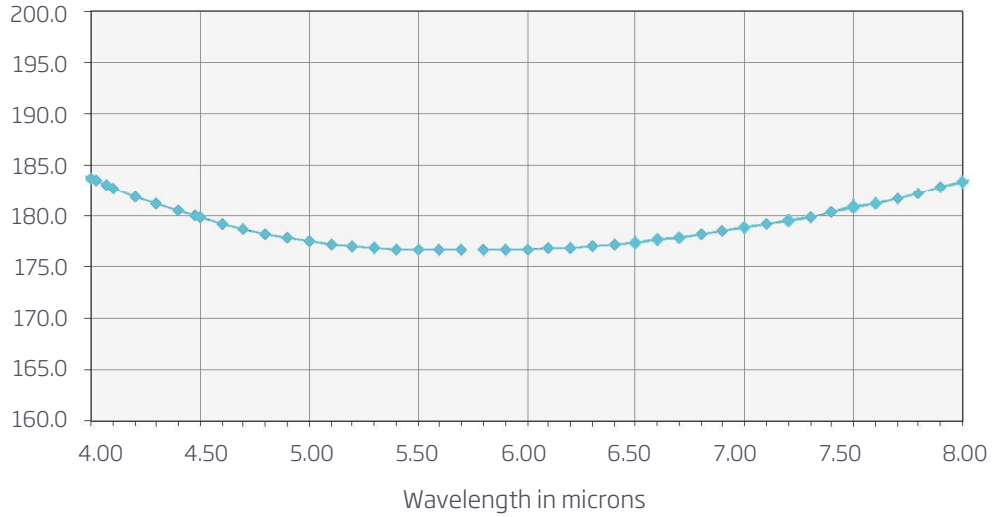
Parameter	Specification	
SERIES	XCN	XPN
Outside diameter (mm)	25.4 mm	50.8 mm
Aperture diameter (mm)	13 mm	28 mm
Retardance values (deg)	Quarter wave, half wave, or custom	
Retardance tolerance (deg)	Typically ± 10 over limited defined spectral range	
Single pass transmission (%)	Typically ≥ 96 (center of range), ≥ 90 (end of range)	
Standard design temperature (°C)	22	

- Two-element achromatic waveplates 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 (4-8 µm) range half waveplate assuming ideal antireflection (AR) coating behaviour over the range. Limitations due to inherent material properties and AR coating designs often suggest restricting the spectral range to 5-8 µm to obtain more uniform performance.

Retardance in degrees for an achromatic half waveplate with elements of CdSe and CdS



For further information

E: sales@gandh.com

gandh.com