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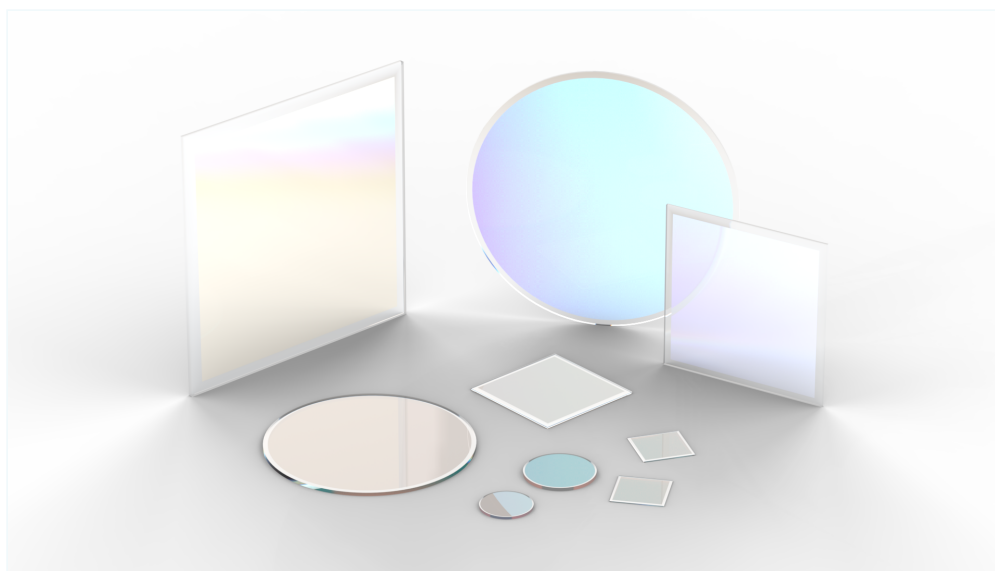
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WAVEPLATES

From crystal growth, crystal orientation and cutting, to waveplate fabrication and coating, no other waveplate supplier has as much control over the fabrication stages as G&H.

Our waveplates been used in the cutting edge of research at Lawrence Livermore National Laboratory's NIF project to the most demanding of production environments in semiconductor metrology equipment.

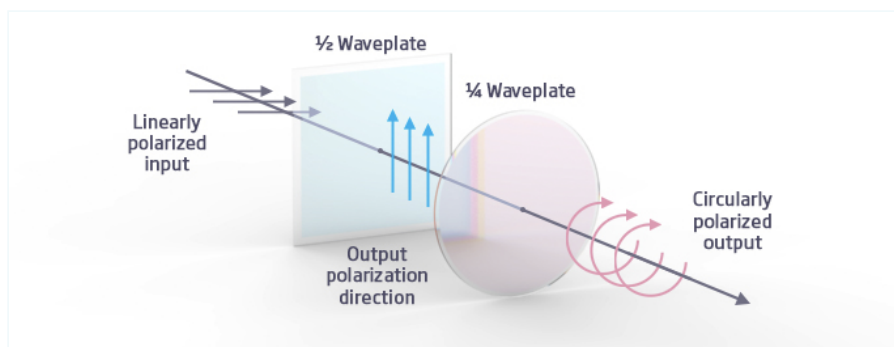
For all wavelength ranges, we orient, cut, and polish the optical crystals for waveplate production. Tight internal controls enable better retardation tolerances within and between production runs.

Polishing, coating, assembly, and metrology complete the manufacturing process.

Compound zero-order (also known as net-zero order) and achromatic

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waveplates are often optically contacted to reduce reflection losses at the surfaces. Air-spacing is recommended for high energy applications. Speciality waveplate designs such as off-axis or true-zero order waveplates are produced to custom specifications.

WAVEPLATES FROM THE UV TO THE NIR

From crystal orientation to assembled product, we produce cutting-edge waveplates for a varied range of applications and customers.

Crystal Quartz – standard material for UV-NIR waveplate applications

LiNbO₃ – infrequently used in 1.5 μ m applications and optical frequency shifters

MgF₂ – typically used in combination with Crystal Quartz for achromatic waveplates

Mica – for ophthalmology applications

Sapphire – for defense applications in extreme environmental conditions

YVO₄ – waveplates for the 400 nm to 5 μ m ranges

WAVEPLATES FOR THE IR, HIGHER ENERGIES, OR LARGER FORMATS

As the world's only entirely vertically integrated CdS, CdSe, and KDP waveplate producer, we deliver accurate performance for demanding applications. Our control over crystal growth benefits customers who need larger sizes, high laser damage threshold performance, or more accurate retardation tolerances.



APPLICATIONS

Aerospace, astronomy, biomedical, laser power control and attenuation, military, optical isolation, polarimetry, remote sensing, semiconductor metrology, spectroscopy, surveillance.

VISIBLE & NIRSPECIFICATIONS	UV, VIS, NIR MULTIPLE ORDER, NET-ZERO, DUAL	UV, VIS, NIR ACHROMATIC	UV, VIS, NIR HIGH ENERGY
Substrate material	Crystal Quartz	Crystal Quartz & MgF2	KDP or KD*P
Sizes	5 mm to150 mm	5 mm to 50 mm	5 mm to 430 mm
High surface quality	10-5	40-20 typical	10-5 < 20 mm 20-10 < 430 mm
Retardation tolerance	$\lambda/500$ at 23°Cat633 nm		?/72at 23°C
Operating conditions	10 J/cm2, 20 ns pulse, 20 Hz		10 J/cm2,10 ns pulseat 1064 nm
Transmission	99.9%	99%	99%
Transmitted wavefront	$\lambda/10$ at 633 nm	$\lambda/10$ at 633 nm	?/6at 633 nm
Parallelism			
INFRAREDSPECIFICATIONS*	IR MULTIPLE ORDER SINGLE WAVELENGTH (3MM- 12MM)??	IR NET ZERO ORDER NARROW RANGE (3MM- 12MM)	ACHROMATIC 3-5MM, 5-8 MM, OR 8-12 MM
Substrate material	CdS or CdSe	CdS/CdS or CdSe/CdSe	CdS/CdSe
Sizes	4mm to 29mm	4mm to 29mm	4mm to 29mm
Retardation?tolerance	$\pm 5^\circ$ at design wavelength	$\pm 5^\circ$ at design wavelength	$\pm 10^\circ$
Transmission	>97% at design wavelength	>90% at center wavelength	>90% at center wavelength

*custom wavelength ranges available

G&H has received ISO9001 certification across all of its manufacturing facilities. AS9100C certification has been achieved at select facilities.

GET IN TOUCH

We enable leading organizations all over the world to deliver tailored, innovative solutions to meet precise requirements.

Contact us now to discuss your next project.

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