Gooch & Housego

Precision Quartz and Birefringent Components

Products:

- Wave plates
- Rotators
- Prism retarders
- Birefringent filters
- X-ray monochromator plates

Key Features:

- Large apertures up to 150mm
- High damage threshold
- High optical transmission
- 193nm-2500nm transmission range
- In house coating facility
- Precision manufactured to exacting specifications

Compliance:

- ISO 9001

When working with polarized light, it is often necessary to utilise various types of polarization sensitive devices that act on the state of polarization of a light beam such as polarisers (linear, circular, elliptical, etc.), rotators, retardation plates, and others.

Birefringent materials include quartz, sapphire, magnesium fluoride, mica, mylar, etc. Gooch & Housego prides itself as a market leading supplier of precision optical components manufactured from crystal quartz. One of the company's core strengths is the ability to control all of the processes that are critical to crystal quartz manufacturing. From material selection, to precision cutting and polishing through to optical coating, Gooch and Housego's products offer the highest optical quality and optimum performance for the most demanding applications.

Gooch & Housego crystal quartz based products can be used in the UV, visible and near-IR regions of the optical spectrum and include wave plates, optical rotators, and retardation plates. Products from Gooch & Housego are well known for their impressive performance such as laser damage thresholds up to 35J/cm^2 at 1064nm, 3ns pulse width.

Most retardation plates are designed to be used in transmission, generally at normal incidence. However, there are also reflection devices that act as quarter-wave and half-wave retarders and polarization rotators. Crystal quartz products from Gooch and Housego can be found in a variety of industrial, consumer and research applications, in fields such as medical systems, Lithography, optical and X-ray microscopy, astronomical instruments, laser and non-linear optical systems, etc. The company also supplies large aperture crystal quartz wave plates for very demanding applications and as such the company has received a vendor appreciation award from the National Ignition Facility at Lawrence Livermore National Laboratories in 2008 in recognition for the quality and performance of it's products for laser fusion research.

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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General product specifications

Parameter	Specification
Material	*Natural quartz, Synthetic quartz, Sapphire, etc*
Surface Quality	*10/5 scratch/dig*
Parallelism	*0.5 arc seconds*
Wavefront Distortion	*≤λ/10 @ 633nm*
Dimensional Tolerance	*+0.0005, -0.002mm*
Damage Threshold	*35J/cm^2 @ 3ns pulse (1064nm)*
Clear aperture dimensions[1]	*Please specify*
Wavelength or range	*Please specify*
Desired retardance (e.g. λ/8, λ/4, λ/2, etc)	*Please specify*
Retardance Tolerance	*Please specify*
Mounted/unmounted	*Please specify*
Optical power density	*Please specify*
Operating & storage conditions	*Please specify*

Customer specific enquiries

The majority of customers require custom components manufactured and coated to their own demanding specifications. Please send your specification to sales@goochandhousego.com or contact your local sales representative do discuss your requirements.

We also do:

- **Acousto-Optics**
- **Electro-Optics**
- **Non Linear Optics & Infra Red Optics**
- **Fibre Optics**
- **RF drives**
- **Coatings**

複屈折オプティクス

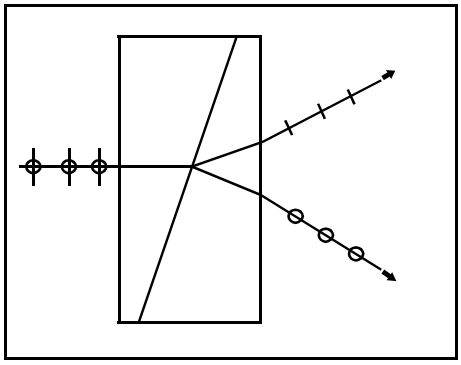
Birefringent Optics

General Capabilities

- Wollaston Prisms
- Rotators
- Savart Plates

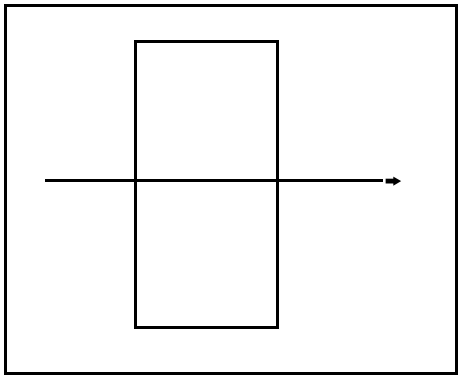
Wollaston prisms

A randomly polarised incident beam is separated into two orthogonally polarised diverging beams whose angular separation is determined by the wedge angle of the prism elements. Compensated and wide-field Wollaston prisms are also available. In Rochon and Senarmont prisms the ordinary and extraordinary rays respectively are transmitted without deviation.



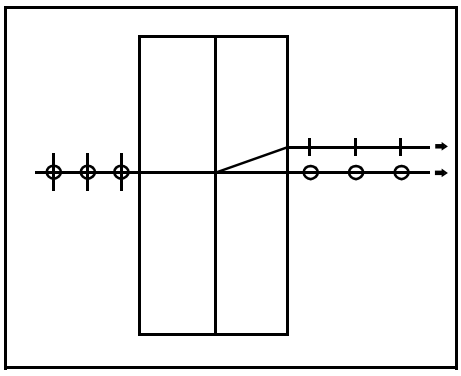
Rotators

A polarisation rotation plate is a parallel sided plate of crystalline quartz orientated with its normal parallel to the optic axis. By virtue of the optical activity exhibited by quartz, the plane of polarisation of a linearly polarised incident beam is rotated by an amount determined by the plate thickness.



Savart polarisciope

The Savart polariscope consists of two parallel sided plates of crystalline quartz of different orientations. A randomly polarised beam into two parallel linearly polarised beams having mutually perpendicular polaristaions. The lateral separation of the exit beams is determined by the thickness of the plates.



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