

# LEYSOP LTD

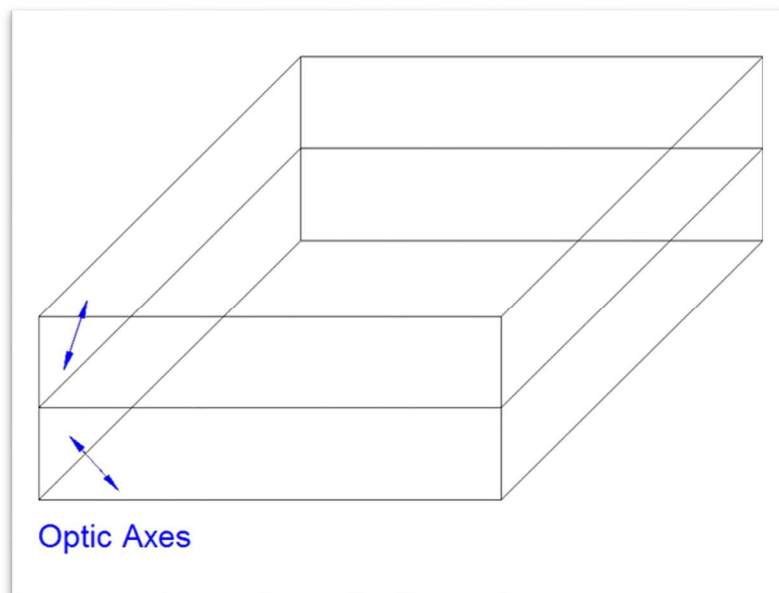
Manufacturers and suppliers of electro-optic components

## Savart Plates

The Savart plate is an extremely useful device, usually manufactured in either calcite or quartz, which is used for the detection of very weakly polarized light for example in starlight.

It is manufactured from two equal thickness plates of birefringent material cemented together, each with their optic axes at  $45^\circ$  to the surface normal and rotated through  $90^\circ$  with respect to each other. Light entering the first plate is split into its two constituent polarization states, the ordinary and extra-ordinary polarized rays. The ordinary ray propagates undisturbed, but the extra-ordinary ray is displaced parallel to one edge. On entering

the second crystal, the ordinary ray in the first crystal becomes the extra-ordinary ray in the second crystal and is displaced in a direction perpendicular to the first beam displacement. Each polarization component effectively passes through its own shearing interferometer and produces a set of straight line fringes. When an analysing polarizer is added after the plate it is possible to measure the relative intensity of the fringes and hence the degree of polarization.



The beam displacement produced by the savart plate is approximately 0.075 times the total thickness in calcite and 0.0042 times in quartz. When ordering a Savart plate we need to know the material, aperture and thickness required, as well as if AR coatings and a mount are required.

For example, a calcite savart plate of aperture 10mm and total thickness 15mm in a mount would be CSP10-15-M. The same part with single layer MgF2 coatings on the outer surfaces centred at 550nm would be CSP10-15-AR550-M.

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## Product Specifications

Model	Material	Model	Material	Aperture (mm)
CSP10	Calcite	QSP10	Quartz	10
CSP15	Calcite	QSP15	Quartz	15
CSP20	Calcite	QSP20	Quartz	20
CSP25	Calcite	QSP25	Quartz	25
CSP40	Calcite	QSP40	Quartz	40
CSP50	Calcite	QSP50	Quartz	50

## Availability

These are just examples; Leysop as always can provide these components in other apertures and displacements as you require and with or without AR coatings, as you prefer.

Components can be provided mounted in

protective rings or supplied bare. Please enquire with us for your specific requirements and provided it is possible we would be happy to meet your needs.