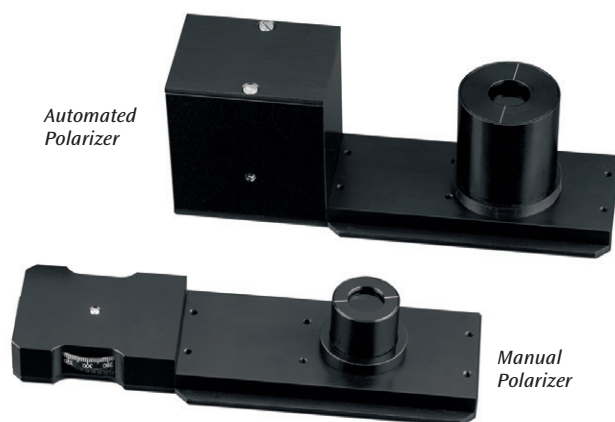


UV-Vis Calcite Polarizers – Manual and Automated Versions



FEATURES

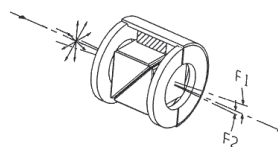
- Glan-Taylor and UV Glan-Thompson designs
- High-grade calcite
- High extinction ratio
- Manual versions – 1 degree settable angular resolution
- Automated version – 0.5 degree angular resolution
- Fits in a standard 2 x 3 inch mount

PIKE Technologies offers Glan-Taylor and Glan-Thompson UV-Vis polarizers. These take advantage of the birefringent properties of UV-quality calcite. An air interface is assembled between two right angle calcite prisms in the Glan-Taylor polarizer whereas a UV-transparent cement separates the calcite prisms in the Glan-Thompson polarizer. In both styles, the polarized extraordinary ray passes through both prisms and the ordinary ray is internally reflected and absorbed. The spectral range of these polarizers is 250–2300 nm. Due to the natural origin of calcite the achievable minimum wavelength fluctuates from polarizer to polarizer. However, at 250 nm the transmission throughput is no less than 25%.

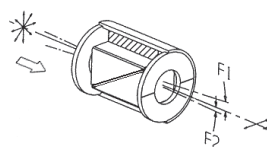
| Wavelength (nm) | 250 | 300 | 400 | > 500 |
|--------------------------|-----|-----|-----|-------|
| Minimum Transmission (%) | 25 | 40 | 65 | 85 |

Each polarizer type has a different field of view where the UV-Vis beam is polarized. The UV Glan-Thompson field of view is wider compared to the Glan-Taylor as shown in the figure.

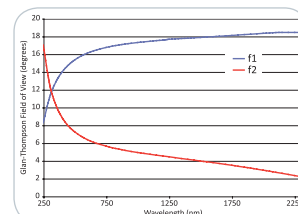
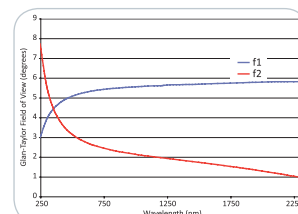
Enhanced angular resolution of 0.5° is gained with the automated version of the PIKE UV-Vis polarizer. This automated feature is advantageous where highly precise angular settings are required and for increasing the measurement simplicity for determining the polarized orientation of a sample. By evaluating the transmission or reflectance of a sample as a function of the automated polarizer angle at a given wavelength, parallel and perpendicular orientation of the sample relative to the polarizer degree setting may be determined. The automated version includes integrated data collection with some commercial UV-Vis spectrophotometer software packages.



Glan-Taylor field of view



UV Glan-Thompson field of view



The sample material and sampling configuration dictate the need for a UV-Vis polarizer. Typical materials that may require a polarizer during sampling are often crystals, films, paints, beam splitters, coated glass, and anti-reflective, and anti-glare coatings. Additionally, we recommend using a polarizer for specular reflectance sampling at an angle of incidence greater than 15 degrees where the reflectivity becomes polarization dependent.

SPECIFICATIONS

| | Glan-Taylor | UV Glan-Thompson |
|--|--------------------|--------------------|
| Material | Calcite | Calcite |
| Spectral Range | 250–2300 nm | 250–2300 nm |
| Clear Aperture | 12 mm | 14 mm |
| Extinction Ratio | 5×10^{-5} | 1×10^{-4} |
| Manual Polarizer Dimensions (W x D x H) | 29 x 50 x 146 mm | 49 x 50 x 146 mm |
| Automated Polarizer Dimensions (W x D x H) | 56 x 50 x 146 mm | 56 x 50 x 146 mm |
| Angular Resolution, Manual | 1° | 1° |
| Angular Resolution, Auto | 0.5° | 0.5° |

ORDERING INFORMATION

PART NUMBER DESCRIPTION

| | |
|----------|----------------------------|
| 198-1623 | Manual Glan-Taylor |
| 198-1624 | Manual UV Glan-Thompson |
| 198-1625 | Automated Glan-Taylor |
| 198-1626 | Automated UV Glan-Thompson |

Note: Polarizers may not fit in the sample compartments of some smaller spectrophotometers. The automated polarizers include the PIKE Technologies Motion Control Unit and AutoPRO software for automated operation. Please consult PIKE Technologies before placing an order or to inquire about spectrophotometer slide mount holders.