

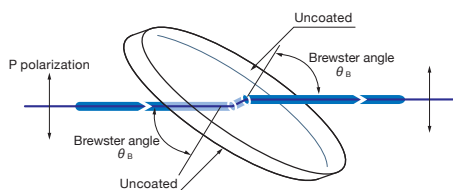
This window plate transmits 100% linearly polarized laser beam with a nonreflective effect of the P-polarized light at Brewster angle.

Brewster window can be used as a window in many laser instruments.

- When window is aligned at Brewster angle the incident beam a circular effective diameter can be obtained.
- Since both sides are not coated, it can be used with a high-energy pulse laser.
- Please specify the materials (synthetic fused silica or BK7), transmitted beam diameter, thickness, and the wavelength to be used (or Brewster angle).



Schematic

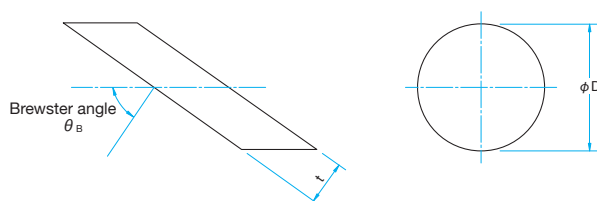


Attention

- ▶ If the incident polarization state is other than P-polarized light, the transmission losses occur due to reflection at the front and back surfaces.
- ▶ If contamination exist on the entrance surface or the exit surface, the surface reflection may occur even for the incident P polarized light.
- ▶ If the incident angle deviates slightly from the Brewster angle, surface reflection occurs.

Outline Drawing

(in mm)



Brewster angle with respect to the wavelength of the refractive index of BK7 and synthetic fused silica

Wavelength [nm]	BK7		Synthetic fused silica	
	Refractive Index	Brewster angle θ_B [°]	Refractive Index	Brewster angle θ_B [°]
266	—	—	1.499	56.3
355	1.539	57.0	1.476	55.9
488	1.522	56.7	1.463	55.6
532	1.519	56.6	1.461	55.6
632.8	1.515	56.6	1.457	55.5
1064	1.507	56.4	1.449	55.4
1550	1.501	56.3	1.444	55.3

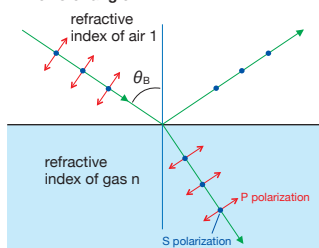
About Brewster angle

Surface reflection of the glass varies with the angle of incidence. In addition, there is a difference in reflectance also by the light oscillation direction (azimuthally polarization). Surface reflection is 0 when (the vibration direction of incident light and the plane containing the normal to the reflecting surface) P-polarized light is incident at an angle θ_B Brewster, the incident light is transmitted in all of the glass. This Brewster angle can be calculated by the following equation by the refractive index of the glass.

$$\text{Brewster condition } \tan \theta_B = n$$

On the other hand, S polarized (vibration direction parallel to the reflecting surface), reflectance increases as the incident angle increases, the reflection becomes never 0.

●Brewster angle



●Change in reflectance for incident angle

