## NEW Pellin Broca prism | PBP                     RoHS
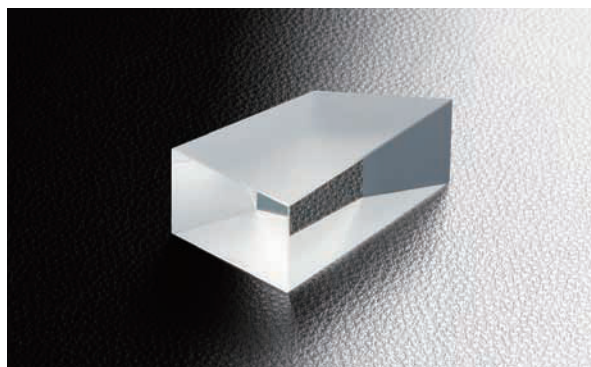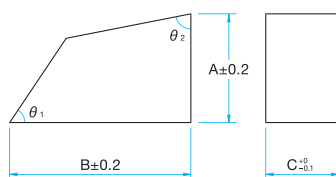
**Pellin Broca prism is a one of the dispersing Brewster prism and is characterized to emit in the direction of perpendicular to the incident.  When the incident at Brewster angle a YAG laser, it is possible to separate the second  harmonic generation beam (532nm) and the fundamental harmonic generation beam (1064nm).**

- ● Since it is using the Brewster angle and the critical angle, reflection losses will not occur, and a high transmittance can be obtained.
- ● Because there is no coating on the surface with Pellin Broca prism, it will also be used in high energy pulsed laser.
- ● This is used to fit the (Brewster angle) angle of light intensity of the beam of light (invisible) of the YAG fundamental harmonic generation and second harmonic generation beam reflected by the prism incident surface is minimized.
- ● Make sure to use to be converted so as to be parallel to the bottom surface of the prism is the polarization direction of the laser beam.
- ● It can also be used for multi-wavelength oscillation laser spectroscopy of Argon laser.

### Specifications

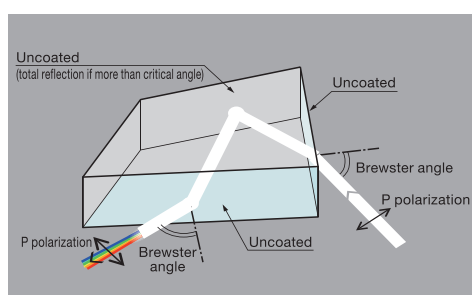| Material | Synthetic fused silica |
|---|---|
| Design wavelength | 706nm (intermediate of 532nm and 1063nm) |
| Angle accuracy | <3′ |
| Surface flatness of substrate | $\lambda$/10 |
| Surface Quality (Scratch–Dig) | 20–10 |
| Clear aperture | Circle or ellipse inscribed in a rectangular of 90% of the dimension size |

### Guide

▶ Perrin blocker prism can also be produced on request to suit for the wavelengths of the laser.
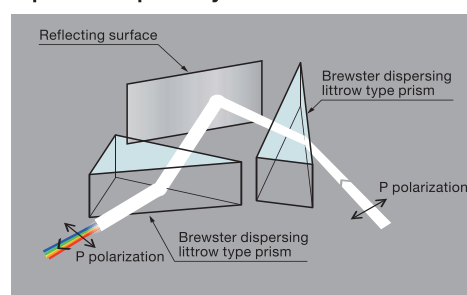▶ Other sizes are available upon production of the catalog.

### Attention

▶ Because it deviates from the Brewster angle, the beam emitted from the ultraviolet wavelength is not a non-reflective.
▶ Although it can also be used as a dispersing prism of non-polarized light, and not allowed to enter in the Brewster angle, it is not emitted at right angles to the incident angle.
▶ It can also be dispersed incident S polarized laser beam, reflection loss occurs in the incident surface and the exit surface.
▶ Fingerprints and dirt adhering to the surface of no coated, the effect of the total reflection or no reflection can not be obtained.  Please use without touching anything on the surface is not coated.
▶ A and B dimension is slightly shorter than the actual catalog because it contains chamfer dimension.  Dimensional tolerances are defined at the intersection of each side that does not include a chamfer.

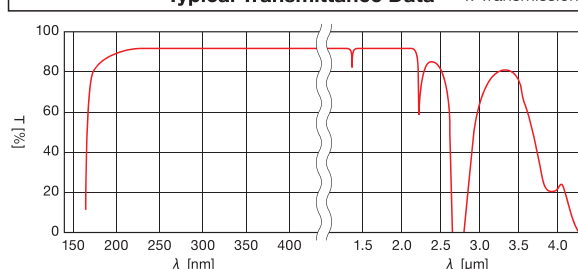### Outline Drawing                              (in mm)



$\theta_2$
A±0.2
$\theta_1$
B±0.2
C$^{+0}_{-0.1}$
Chamfer  Ridge line about C0.3
(No chamfer obtuse angle)

### Schematic



Uncoated
(total reflection if more than critical angle)
Uncoated
Brewster angle
P polarization
P polarization
Brewster angle
Uncoated

**Equivalent optical system**



Reflecting surface
Brewster dispersing littrow type prism
P polarization
P polarization
Brewster dispersing littrow type prism

### Angular dispersion of  YAG Laser

| Brewster wavelength | | 1064nm | 532nm |
|---|---|---|---|
| Incident angle (Brewster angle) [ ° ] | | 55.39 | 55.61 |
| Output angle [ ° ] | 1064nm | 54.93 | 54.71 |
| | 532nm | 56.30 | 56.08 |
| | 355nm | 58.09 | 57.86 |
| | 266nm | 61.01 | 60.76 |

### Typical Transmittance Data    T: Transmission



⊥[%]
100
80
60
40
20
0
150  200  250  300  350  400     1.5  2.0  2.5  3.0  3.5  4.0
$\lambda$ [nm]                        $\lambda$ [µm]

### Specifications

| Part Number | A [mm] | B [mm] | C [mm] | $\theta_1$ [ ° ] | $\theta_2$ [ ° ] |
|---|---|---|---|---|---|
| **PBP-30L20-10** | 30 | 50 | 20 | 56.13 | 79.50 |