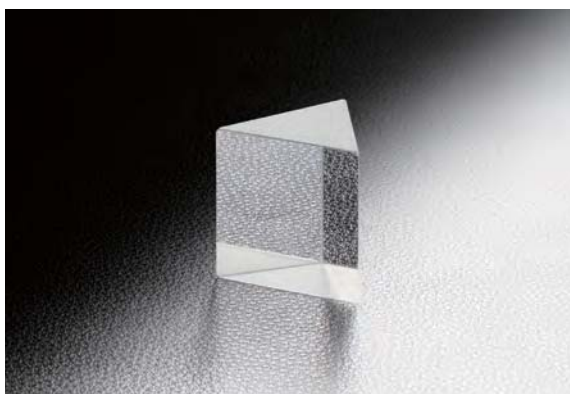


# Equilateral Dispersing Prisms | DPB/DPSQ/DPTIH11

RoHS

Equilateral prisms are normally used for the dispersion of light into its different colors. Light incident at an oblique angle to the first face is dispersed according to its wavelength and emerges as a spectrum from the opposite face. We offer these prisms made from BK7, Synthetic Fused Silica and S-TIH11 optical glass.

- The roof angle of 60 degrees causes the best combination of wide dispersion and low reflection losses. A glass with large dispersive power or small Abbe's number leads to large angular dispersion.
- We offer both BK7 and fused silica for wavelengths from UV to near IR. We recommend a prism of BK7 if the light is not UV, because the angular dispersion of BK7 is larger than that of fused silica.
- The DPTIH11 uses high index glass resulting in superior dispersion.

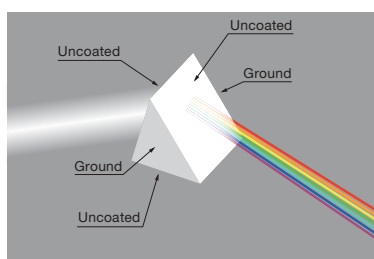


## Specifications

Part Number	DPB	DPSQ	DPTIH11
Material	BK7	Synthetic fused silica	S-TIH11 equivalent
Refractive index $n_d$	1.517	1.458	1.785
Minimum deviation	49.3°	46.8°	66.4°
Abbe number $v_d^*$	64.1	67.8	25.7
Angle	60°±3'		
Surface flatness of substrate	λ/10		λ/4
Surface Quality (Scratch-Dig)	20-10		40-20
Clear aperture	Circle or ellipse inscribed in a rectangular of 90% of the dimensions A and B		

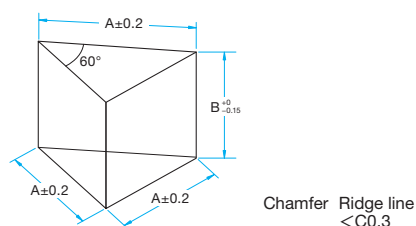
$$* \text{ Abbe number } V_d = \frac{n_d - 1}{n_F - n_C} \quad \begin{array}{l} n_d: \text{Refractivity of 587.6nm wavelength} \\ n_F: \text{Refractivity of 486.1nm wavelength} \\ n_C: \text{Refractivity of 656.3nm wavelength} \end{array}$$

## Schematic



## Outline Drawing

(in mm)



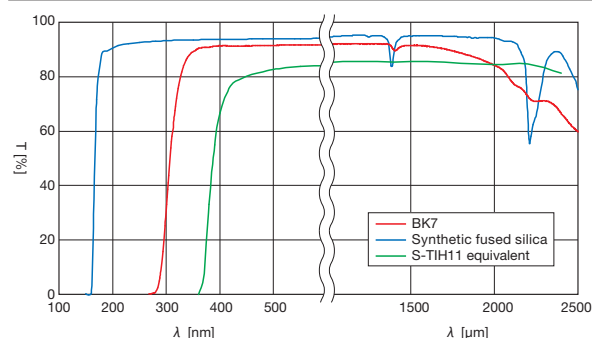
## Guide

- ▶ We offer Prism Holders (PLH) to mount each of our catalog equilateral dispersing prisms.
- ▶ Consult our Sales Division for custom sizes.

## Attention

- ▶ Every edge of these prisms is chamfered (beveled) for chipping prevention. The dimensions of these prisms are values not including chamfer.
- ▶ Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.

## Typical Transmittance Data T: Transmission



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Equilateral Dispersing Prisms

Others



BK7	
Part Number	A = B [mm]
DPB-20-10H	20
DPB-25-10H	25
DPB-30-10H	30

Synthetic fused silica	
Part Number	A = B [mm]
DPSQ-20-10H	20
DPSQ-25-10H	25
DPSQ-30-10H	30

S-TIH11	
Part Number	A = B [mm]
DPTIH11-20-4H	20
DPTIH11-25-4H	25
DPTIH11-30-4H	30

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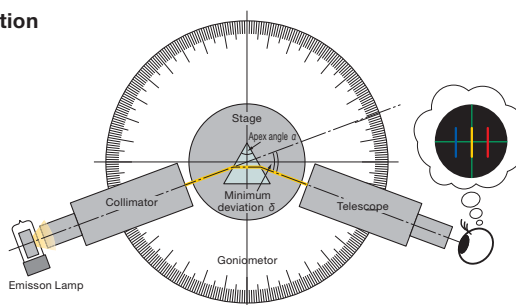
Equilateral Dispersing Prisms

Others

**■ Glass refractive index measurement method of minimum deviation**

The refractive index of optical glass is accurately measured by the angle measuring device called a goniometer. Accurately measuring the refractive index for each wavelength with the known wavelength of the emission spectrum of the lamp is emitted. Wavelength dispersion of the refractive index is determined by the results of this measurement.

$$n = \frac{\sin\left(\frac{\alpha + \delta}{2}\right)}{\sin\left(\frac{\alpha}{2}\right)}$$



**Compatible Optic Mounts**

PLH / KKD / SHA