By processing the various forms of glass, the prism produces a special effect due to refraction. Since there is no angular offset that after manufacture, it is also used as a reference angle for accurate angle.

Application	Products		Sample of use
Reflecting light		Right Angle Prisms (RPB / RPSQ)	Substitute of the mirror, Reflector of the compact optical system.
Replacing the light		Corner Cube Prisms (CCB) Hollow Retro-reflectors (RCCB)	Interferometer, Reflector, such as distance measurement
Dispersion wavelength		Equilateral Dispersing Prisms (DPB/DPSQ/DPTIH11)	Spectroscopic measurement, Dispersion compensation
Special effects		Dove Prisms (DOP) Penta Prisms (PPB) Pellin–Broca prism (PBPQ)	Rotate or flip the image

## **About Refraction and Critical angle**

When the light is incident oblique angle on the glass, causing the refracted at the interface of the glass and air, the traveling direction of the light will change.

At this time, emission angle toward the side of the glass is smaller than the incident angle of the air.

If the refractive index of the glass can be seen, this relationship can be determined from Snell's law.

Then, even if the incident light is emitted at the same angle as the angle  $\theta_b$  shown below the boundary surface of the glass, through the same path at all, it will be emitted to the air incident angle  $\theta_a$ .

However, if it will be incident at a large angle with the boundary surface from the side of the glass, then emitted to the air-side angle will exceed 90 degrees. It is called "critical" the emission angle of the air side when 90 degrees. It is called to be this angle "critical angle".

When the incident light from the glass boundary at an angle larger the critical angle  $\theta_r$ , the light will not come out to the air causing total reflection.

### **Conditions for refraction**





 $\sin \theta_a = n \sin \theta_b$ 

#### **Conditions for Critical**



#### **Conditions for Critical angle**

 $\sin 90^\circ = n \sin \theta_r$ 

	BK7	Synthetic fused silica
Refractive index $n_d$	1.517	1.458
Critical angle $\theta_r$	41.2°	43.3°



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# Selection Guide

45 Degrees Angle Retro-reflectoes Equilateral Dispersing Prisms Others

