

## Prism

Prisms are blocks of optical material with flat polished sides arranged at precisely controlled angles to each other, which deflect, deviate and rotate beams of light as well as dispersing their wavelengths. here are many types of prism, each having a particular geometry to achieve the reflections necessary to perform a specific imaging task. Reflecting prisms may invert, rotate, deviate or displace a beam. Dispersing prisms produce spectral separation for spectroscopic applications or fo tuning a laser output.

### Penta Prism

The deviation angle of 90° is thus independent of the orientation of the prism, making it especially important in applications in which the prism orientation cannot be precisely controlled. Due to geometry that total internal reflection cannot be used, the reflecting surfaces must be coated with a metallic or dielectric coating. The standard Penta Prism reflecting surfaces are coated with aluminum or enhanced aluminum(see Coating chart). Sometimes, reflecting coating surfaces are with black painting.

#### Specification:

Material: BK7 Grade A optical glass

Dimension Tolerance: ±2mm

90° Deviation Tolerance:

Standard series: < 30 arc seconds

Precision series: < 10 arc seconds

Flatness:

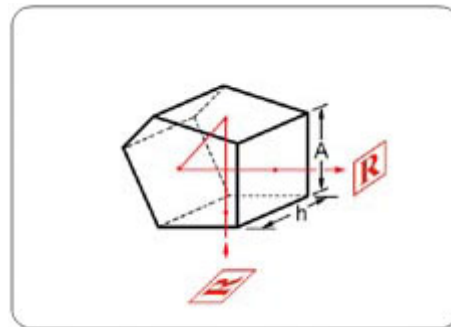
Standard series: λ/2 at 632.8 nm

Precision series: λ/4 at 632.8 nm

Reflectivity: R > 95% per face from @1550 nm

Surface Quality: 60-40 scratch and dig

Working Wavelength: 1550 nm



Part No( 1 min. Deviation)	Part No.(10 sec..Deviation)	Part No.(30 sec.Deviation)	A x h(mm)
PTP0101	PTP0201	PTP0301	7 x 6
PTP0102	PTP0202	PTP0302	10 x 10
PTP0103	PTP0203	PTP0303	15 x 15
PTP0104	PTP0204	PTP0304	20 x 20

## Beamsplitter Penta Prism

By adding a wedge and with partial reflective coating on surfaces S1, Penta Prism can be used as Beamsplitter. Transmission/reflection (T/R) ratio of 20/80, 50/50 or others for Beamsplitter Penta Prism is available upon request.

### Specification:

Material: BK7 Grade A optical glass

Dimension Tolerance:  $\pm 2$  mm

90°, 180° Deviation Tolerance

Standard series: < 30 arc seconds

Precision series: < 15 arc seconds

Flatness:

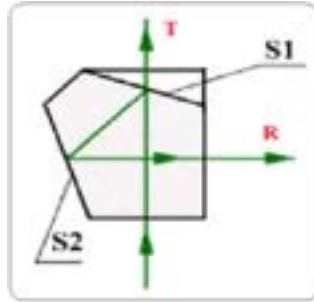
Standard series:  $\lambda/2$  at 632.8 nm

Precision series:  $\lambda/4$  at 632.8 nm

Surface Quality: 60-40 scratch and dig

Beamsplitter Ratio Transmission/Reflection

@ 630-680nm, T/R: 20/80  $\pm 5$



Part No( 1 min. Deviation)	Part No.(10 sec..Deviation)	Part No.(30 sec.Deviation)	A x h(mm)
SPP0101	SPP0201	SPP0301	7 x 6
SPP0102	SPP0202	SPP0302	10 x 10
SPP0103	SPP0203	SPP0303	15 x 15
SPP0104	SPP0204	SPP0304	20 x 20

## Right-Angle Prism

A Right-Angle Prism is used as a mirror to deviate light through 90 degree, and also as a retroreflector to deflect light through 180 degree by total internal reflection.

### Fused Silica Right-Angle Prisms

#### Specification:

Material: UV Grade Fused Silica

Dimension Tolerance: +0.0, -0.2 mm

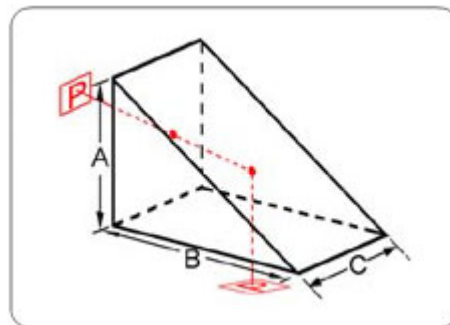
Clear Aperture: >80%

Angle Tolerance: see the table

Flatness:  $\lambda/2$  @632.8 nm

Surface Quality: 60-40 scratch and dig

Bevel: 0.2 mm to 0.5 mm



Part No( 1 min. Deviation)	Part No.(10 sec..Deviation)	Part No.(30 sec.Deviation)	A x h(mm)
RAP1301	RAP1302	RAP1303	7 x 6
RAP1601	RAP1602	RAP1603	10 x 10

## BK7 Right-Angle Prism

### Specification:

Material: BK7 glass

Dimension Tolerance: +0.0, -0.2 mm

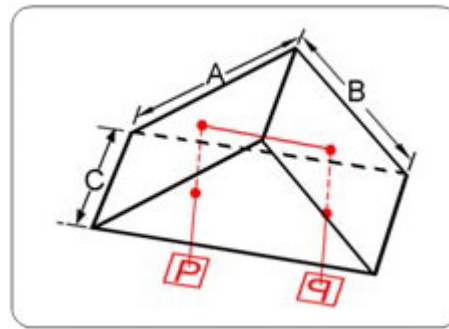
Clear Aperture: >80%

Angle Tolerance: see the table

Flatness: 1/2 @632.8 nm

Surface Quality: 60-40 scratch and dig

Bevel: 0.2 mm to 0.5 mm



Part No.( 1 min. Deviation)	Part No.(10 sec..Deviation)	Part No.(30 sec.Deviation)	A x h(mm)
RAP0001	RAP0002	RAP0003	A=B=C=3.2
RAP0101	RAP0102	RAP0103	A=B=C=5.0
RAP0201	RAP0202	RAP0203	A=B=C=10.0
RAP0301	RAP0302	RAP0303	A=B=C=12.7
RAP0401	RAP0402	RAP0403	A=B=C=15.0
RAP0501	RAP0502	RAP0503	A=B=C=25.4
RAP0601	RAP0602	RAP0603	A=B=C=30.0
RAP0701	RAP0702	RAP0703	A=B=C=40.0
RAP0801	RAP0802	RAP0803	A=B=C=50.8

## High Precision Perpendicularity Right-Angle Prisms

ULTIQUEST also provide BK7 or Fused Silica right-angle prisms with excellent perpendicularity of ground surface and polished surfaces. Such prisms are useful for high precision optics application, which requires a good ground reference flat.

## Laser Grade Right-Angle Prisms

Laser Grade Right-Angle Prisms are fabricated by special selection optical materials with low scatter and absorption. Standard size Laser Grade Right-Angle Prisms with better surface finish, flatness as high as 1/10 and high accuracy are available. Please refer to page 44 for more information.

## Corner Cube Retroreflectors

### Specification:

Material: BK7 Grade A Optical Glass

Dimension Tolerance: +0.0, -0.2 mm

Clear Aperture: >80%

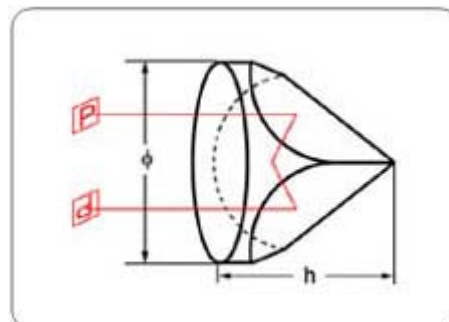
Deviation:  $\pm 180^\circ \pm 3$  arc sec

Flatness: 1/4 @632.8 nm on big surface

1/10 @632.8 nm on other surface

Surface Quality: 60-40 scratch and dig

Wavefront Distortion: 1/2 @632.8



Bevel: 0.2 mm to 0.5 mm

Part No.	$\phi$ (mm)	h (mm)
CNP0101	15.0	11.3
CNP0201	25.4	19.0
CNP0301	38.0	28.5
CNP0401	50.8	37.5

### Anamorphic Prisms

#### Specification:

Material: SF11 grade A fine annealed optical glass

Dimension Tolerance: +0.0,-0.15mm

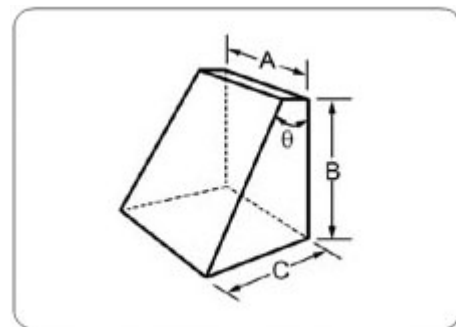
Clear aperture: >80% of the central area

Surface quality: 60/40 scratch and dig

Flatness:  $1/8@830\text{nm}$

$q=29^{\circ}27' \pm 30''$

Coating: MgF2 single layer @8300nm on perpendicular surface



Part No.	A(mm)	B(mm)	C(mm)
ANP0001	12.0	12.0	8.5