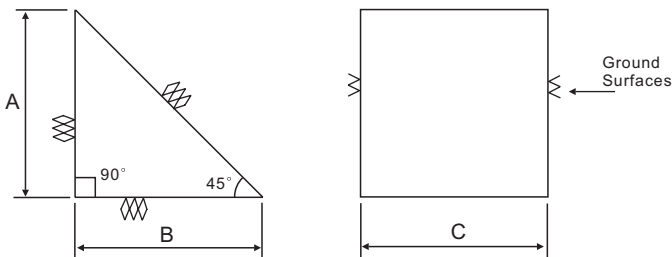


Prisms

- ✘ Right-angle prisms-----8
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Right Angle Prisms

Right angle prisms are most popular of all prisms. Right angle prisms are used to deviate beam through 90°, when beam enters normal to right sides, and as also a retroreflector to deviate beam through 180° when beam enters normal to hypotenuse.



Materials:

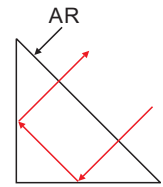
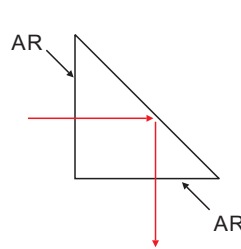
- N-BK7
- UV Fused silica
- Borofloat, Pyrex
- Other optical glasses from Schott, CDGM

General Specifications

	Standard Precision	High precision
Dimensional tolerance:	± 0.1mm	± 0.05mm
Surface quality:	60-40 S/D	10-5 S/D
Surface Flatness:	λ /4@632.8nm	λ /8@632.8nm
Angular tolerance:	± 3 arcmin	± 1 arcmin
Clear aperture:	>85%	>85%
Bevel:	Protective bevel	Protective bevel

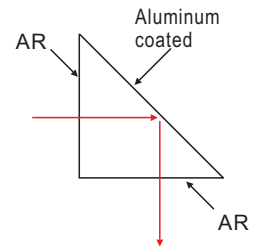
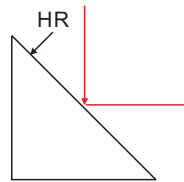
Typical Sizes

AxBxC(mm)	AxBxC(mm)
1.0x1.0x1.0	15.0x15.0x15.0
2.0x2.0x2.0	18.0x18.0x18.0
3.0x3.0x3.0	20.0x20.0x20.0
5.0x5.0x5.0	25.4x25.4x25.4
10.0x10.0x10.0	38.1x38.1x38.1
12.7x12.7x12.7	50.8x50.8x50.8



Angular accuracy (45° 90° 45°)

<15"	<30"	<1'	<2'	<3'	<5'
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Choose Coatings for right angle prisms.

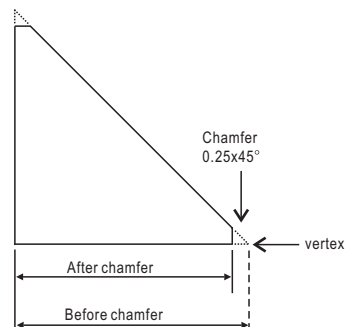
- Single layer MgF₂
- Anti-reflective coating
- High reflective dielectric coating.
- Protected Aluminum

(Please specify which surface to be coated.)

Unless specified otherwise, the tolerance of angle between ground surface and polished surface is 10' for sizes < 3x3x3mm and 5' for sizes > 5x5x5mm. Higher accuracy is available upon request

Unless specified otherwise, any dimension from vertex to surface (or, from one vertex to another vertex) is the dimension BEFORE-Chamfer.

Unchamfered edge is available upon request.



How to order Right-angle Prisms? Example:

Material: **N-BK7**
 Size: **10x10x10 ± 0.1 mm**
 Angular accuracy: **± 3'**
 Surface quality: **20-10 S/D**
 Flatness: **λ /4@633nm**
 Coating: **AR @808nm on two leg surfaces, AOI=0°**

Price on request

Custom Design

Volume Discount

Dove Prisms

Dove prisms can be used as an image rotator, the output image rotates through twice the angle that the prism rotates through. Dove prism also can be used as a retroreflectors.

General Specifications

Material:	N-BK7
Dimensional tolerance:	$\pm 0.1\text{mm}$
Surface quality:	60-40 S/D
Flatness:	$\lambda/2@632.8\text{nm}$
Bevel:	Protective bevel

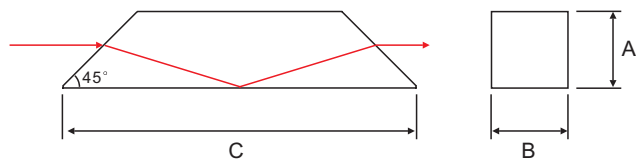


Angular tolerance

<30"	<1'	<3'
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Typical Sizes

AxB(mm)	C(mm)	θ
5.0x5.0	21.1	45°
10.0x10.0	42.3	45°
15.0x15.0	62.4	45°
20.0x20.0	84.5	45°



How to order Dove prisms? Example:

Material: N-BK7
 Size and tolerance: 15.0(A)x15.0(B)x62.4(C) $\pm 0.1\text{ mm}$
 Angle and accuracy: $45^\circ \pm 3'$
 Polishing quality: 60-40 S/D, $\lambda/2@633\text{nm}$
 Coating:

Price on request

Custom Design

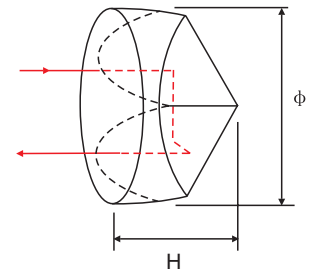
Volume Discount

Corner Retroreflectors

Corner cube retroreflector has three mutually orthogonal reflecting surfaces. The corner cube reflect any light rays back towards their source. The reflection angle 180° is independent of the orientation of the corner cube, making it ideal where precision alignment is difficult.

General Specifications

Material	N-BK7
Dimensional tolerance	$\pm 0.1\text{mm}$
Surface quality	40-20 S/D
Surface flatness	$\lambda/4@632.8\text{nm}$
Bevel	Roof edges un-beveled, chip $<0.1\text{mm}$ other edge Protective bevel



Deviation 180° accuracy:

$<3''$	$<5''$	$<10''$	$<15''$	$<30''$
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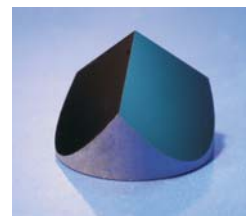
Choose Coatings:

Reflective surfaces: Protected Silver coating + Black paint
Front surface: Anti-reflective coating



Typical Sizes & deviation:

Diameter	Height	Deviation
$\phi 12.7$	10.2	$180^\circ \pm 5''$
$\phi 15.0$	11.4	$180^\circ \pm 5''$
$\phi 25.4$	19.1	$180^\circ \pm 5''$
$\phi 38.1$	29.2	$180^\circ \pm 5''$
$\phi 50.8$	38.1	$180^\circ \pm 5''$



How to order Corner Retroreflector? Example:

Material: **N-BK7**
 Size and tolerance: **$\phi 12.7 \times 10.2 \pm 0.05 \text{ mm}$**
 Deviation: **$\pm 5''$**
 Polishing quality: **20-10 S/D, $\lambda/8@633\text{nm}$**
 Coating: **AR @808nm on front surface**
Silver +Black paint on reflective surfaces

Price on request

Custom Design

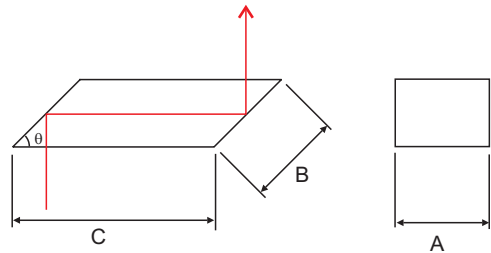
Volume Discount

Rhomboid Prisms

Rhomboid prism is used to displace a laser beam without changing its direction. The displacement is equal to the length of the prism.

General Specifications

Material	N-BK7
Dimensional tolerance	$\pm 0.1\text{mm}$
Surface quality	60-40 S/D
Flatness	$\lambda/4@632.8\text{nm}$
Bevel	Protective bevel



Deviation accuracy	<30"	<1'	<3'
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(Parallelism of input and output beam)

Typical Sizes

AxB(mm)	C(mm)	θ
5.0x5.0	7.1	45°
10.0x10.0	14.2	45°
15.0x15.0	21.2	45°
20.0x20.0	28.3	45°
25.0x25.0	35.4	45°

How to order Rhomboid prisms? Example:

Material: N-BK7
 Size: AxB=15.0x15.0, C=21.2mm $\pm 0.1\text{mm}$
 Angle and accuracy: 45° $\pm 1'$
 Polishing quality: 60-40 S/D, $\lambda/4@633\text{nm}$
 Coating: AR @1064nm at entrance/exit surfaces

Price on request

Custom Design

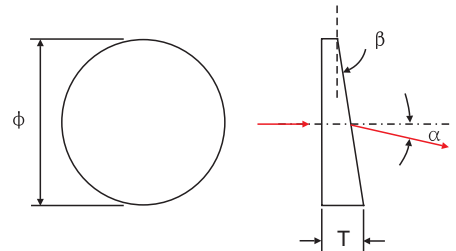
Volume Discount

Wedges

Wedge prism is used individually to deviate a beam through some specified angles. When used in pairs, the wedge prisms can steer a beam anywhere within a circle described by full angle 4α , where α is the deviation from a single prism. The beam steering is accomplished by rotating the two wedge prisms independently of each other.

General Specifications

Material	N-BK7
Design wavelength	632.8nm, $n=1.51467$
Dimensional tolerance	$\pm 0.1\text{mm}$
Surface quality	60-40
Flatness	$\lambda/4@632.8\text{nm}$
Wedge tolerance	$\pm 1\text{ arcmin}$
Thickness of thin edge	3.0mm
Bevel	Protective bevel

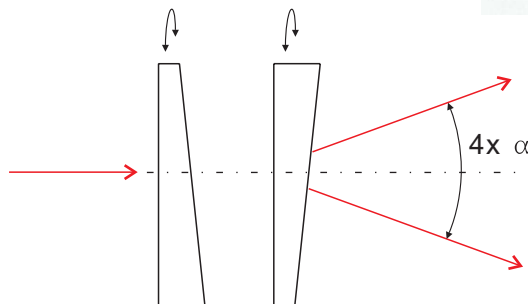


Typical Sizes

ϕ (mm)	T(mm) Thickest	Deviation angle(α)	Wedge angle(β)
ϕ 25.4	3.86	1°	1° 57'
ϕ 25.4	4.72	2°	3° 53'
ϕ 25.4	6.43	4°	7° 41'
ϕ 25.4	8.11	6°	11° 21'
ϕ 25.4	9.74	8°	14° 51'
ϕ 25.4	11.33	10°	18° 08'



Square shape is available.



How to order Wedges? Example:

Material	N-BK7
Size and tolerance	ϕ 15x3.0 \pm 0.1 mm
Angle and accuracy	7° 41' \pm 3'
Polishing quality	60-40 S/D, $\lambda/4@633\text{nm}$
Coating	Single Layer MgF2 @550nm

Price on request

Custom Design

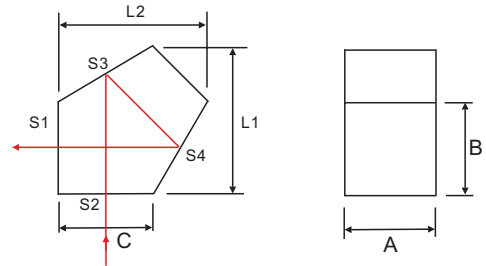
Volume Discount

Penta Prisms

Penta prisms are used to deviate an incident beam 90° independent of small positional changes of the prism with respect to the beam. The image is neither inverted nor reversed.

General Specifications

Material	N-BK7
Dimensional tolerance	± 0.1mm
Surface quality	60-40 S/D
Flatness	λ /4@632.8nm
Bevel	Protective bevel
Surfaces S1 & S2	Single layer MgF ₂ coating
Surfaces S3 & S4	Aluminized and painted black

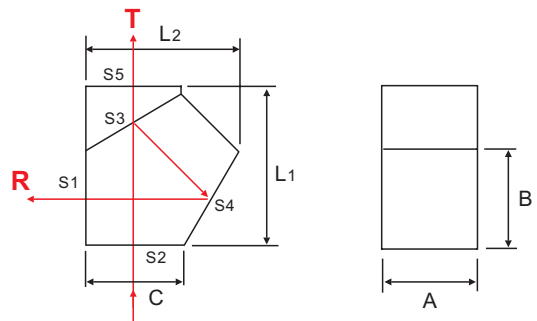


Deviation 90° accuracy:

<10"	<15"	<30"	<1'
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Typical Size

AxBxC(mm)	L1=L2(mm)
6.0x7.0x7.0	9.90
10.0x10.0x10.0	14.14
15.0x15.0x15.0	21.21
20.0x20.0x20.0	28.28
30.0x30.0x30.0	42.42



Beamsplitting Penta

Beamsplitter penta prism is a penta prism glued with a wedge on a reflecting surface. It is used to divide an

Beamsplitter ratio (R:T) 80%:20% for 630-680nm (± 5%)

Angular Deviation

<3"	<15"	<30"	<1'
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How to order Penta Prisms? Example:

Material: **N-BK7**
 Size and tolerance: **15x15 ± 0.05 mm**
 Deviation: **± 15"**
 Coating: **MgF₂ coating**

Price on request

Custom Design

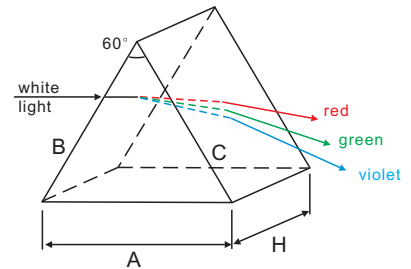
Volume Discount

Equilateral Dispersing Prisms

Equilateral prisms has three equal 60° angles, and are mostly used to disperse the spectrum.

General Specifications

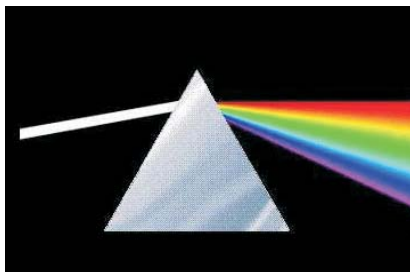
Material	N-SF11
Dimensional tolerance	± 0.1mm
Surface quality	60-40 S/D
Flatness	λ /2@633nm
Bevel	Protective bevel



Three Angles: $\theta = 60^\circ$
 Angular tolerance: 3'

Typical Sizes

A=B=C(mm)	H(mm)	θ
15.0	15.0	60°
25.4	25.4	60°
30.0	30.0	60°
38.1	38.1	60°
50.8	50.8	60°



How to order equilateral dispersing prisms? Example:

Material: N-SF11
 Size and tolerance: 15.0x15.0, H=15mm ± 0.1 mm
 Angle and accuracy: 60° ± 3'
 Polishing quality: 60-40 S/D, λ /2@633nm
 Coating:

Price on request

Custom Design

Volume Discount

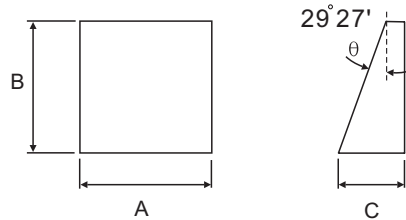
Anamorphic Prisms

The Anamorphic prisms are used in pairs to magnify input beam size along one axis while leaving the other axis unchanged. The elliptical laser diode beams can be transferred into nearly circular beams.

By adjusting the orientation of prisms (α_1 and α_2), the magnification range from 2x to 6x.

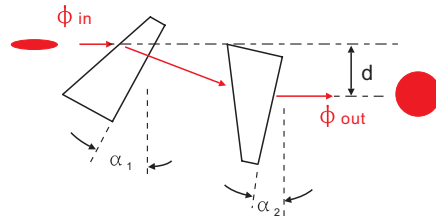
General Specifications

Material:	N-SF11
Dimensional tolerance:	$\pm 0.1\text{mm}$
Surface quality:	60-40 S/D
Surface flatness:	$\lambda/8@632.8\text{nm}$
Bevel:	Protective bevel
Typical angle:	$\theta = 29^\circ 27'$
Angular tolerance:	30"



Typical Size

A=B (mm)	C (mm)
12.0 x 12.0	8.5



How to order anamorphic prisms? Example:

Material: N-SF11
Size and tolerance: $12.0 \times 12.0 \times 8.5 \pm 0.1\text{mm}$
Coating: Single layer MgF2

Price on request

Custom Design

Volume Discount

Customized prisms

We have capability to custom a variety of prisms.
 Please send your requirements or drawings to us for inquiry.

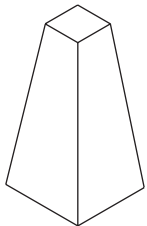
Capability

Shape:	Any shape
Sizes:	0.5mm--200mm
Dimensional tolerance:	up to $\pm 0.01\text{mm}$
Flatness:	up to $\lambda/10@632.8\text{nm}$
Surface quality:	up to 10-5 S/D
Angle tolerance:	up to $\pm 2 \text{ arcsec}$

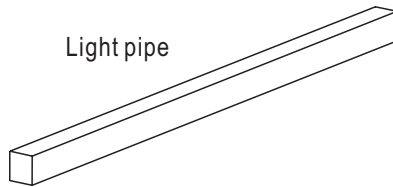
Price
on request

Custom
Design

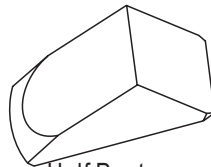
Volume
Discount



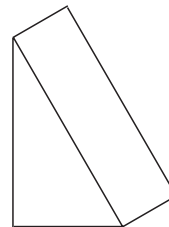
Tapered Light pipe



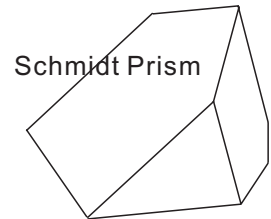
Light pipe



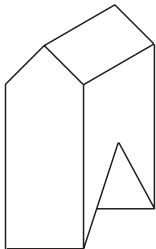
Half Penta



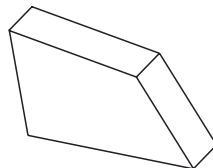
Littrow Prism



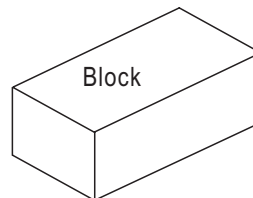
Schmidt Prism



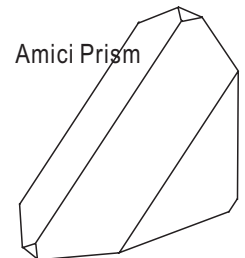
Reversion Prism



Pellin-Broca



Block



Amici Prism

CeNing has high precision Angle Measurement systems.

The accuracy is up to 1.6 arcsec.

The system can measure three specifications:

- Angles
- Parallelism
- Beam deviation (90° , 180°)

