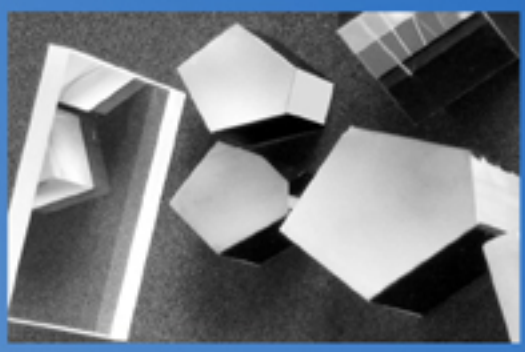
Product Catalog
2009



EastOptics Inc.

EastOptics is a professional optical components supplier in China.Our precision optical components are used for optical instruments,laser systems and telecom devices.Our team has over 10 years experience in optical design,manufacturing and customer communications.We are dedicating to provide high quality optics products and services to our valued customers.

EastOptics focus on manufacturing high precision optical components for the laboratory and for production or OEM requirements, EastOptics's product include windows,prisms,lenses,mirros, polarization optics products,crystal products and coatings, windows,prisms,mirros and lenses are our featured products.

EastOptics's quality assurance system is constructed according to ISO9001:2000 quality management system.EastOptics also equipped advanced inspedtion instruments.EastOptics's inspection standard is according to MIL-PRF-13830B,DIN ISO 10110 and Chinese State Standards.Our optical materials are compliance with RoHS Directive(2002/95/EC).

EastOptics will keep good cooperation relationship with our valued customers,and will continue to provide the best products,reasonable price,on time delivery and better services to the customers.

Flexible customizing

EastOptics has the capability to create products that meet customer needs.We are willing to take on more specialized projects to make special optical components.

Prototype and volume production

With our extensive tooling inventory,EastOptics can make prototype in a short time with very low cost.We have enough facilities and people to manufacture large quantity products in schedule and on time.

Quality Assurance

Any product shipped before shall be subject to EastOptics's standard examination procedure.EastOptics's metrologies include spectral photometers,goniometers,interferometers and other advanced instruments.

Professinal Services

Our team has over 10 years experiences in optical design,manufacturing and customer interactive communications.

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P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

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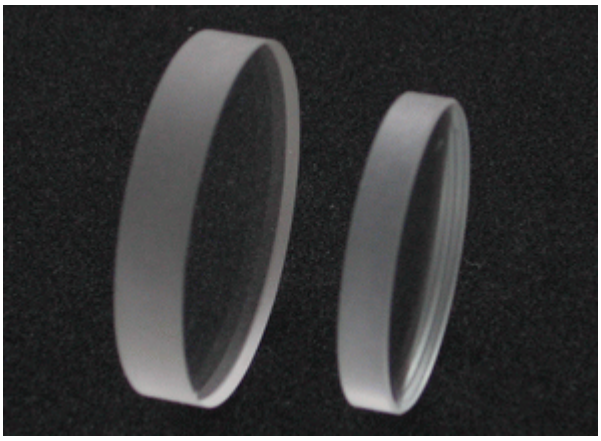
Windows

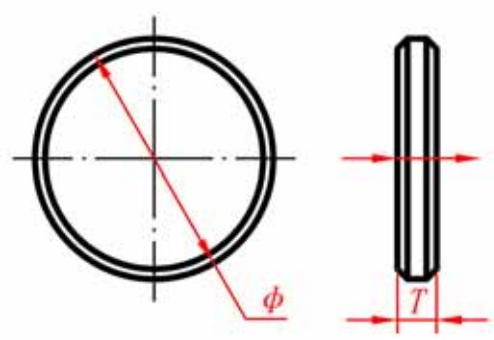


Optical windows are optical glass with ground and polished faces that are relatively parallel. They are used as a protective element between two environments and their impact on the passage of visible light is neutral. When selecting windows you should consider the following properties, transmission, scattering, wavefront distortion, parallelism and resistance to certain environment. Eastoptics offers a wide range windows. Special materials are available upon requset. Eastoptics provides varieties of single layer or multi-layer anti-reflecting coating on optical windows. please refer to the coating chapter for more information.

Eastoptics provide following windows:

- High Precision BK7 Window
- Standard BK7 Window
- High Precision Fused Silica Window
- Standard Fused Silica Window
- Calcium Fluoride Window
- MgF2 Window
- Sapphire Window
- Germanium Window
- Silicon Window
- Float Glass Window
- Glass-house Window

High Precision BK7 Window



Specifications:

Material.....BK7 grade A optical glass
Diameter Tolerance.....+0.0, -0.1mm
Thinkness Tolerance.....±0.2mm
Clear Aperture.....> 85%
Parallelism.....< 10 arc seconds
Surface Quality.....40-20 scratch and dig
Flatness.....λ/10 per 25mm@632.8nm
Wavefront Distortion.....λ/10 per 25mm@632.8nm
Bevel.....0.25mm x 45°

P/N	Φ	T
10101	10.00	6.00
10102	12.70	6.00
10103	15.00	6.00
10104	20.00	6.00
10105	25.40	6.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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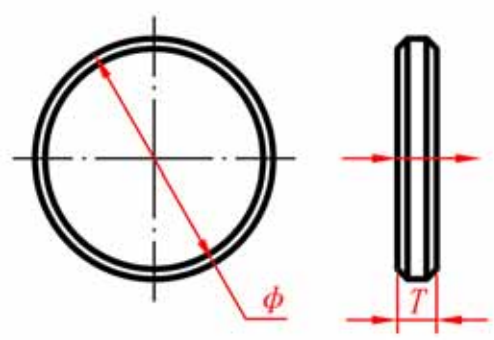
Standard BK7 Window



Specifications:

Material.....BK7 grade A optical glass
Diameter Tolerance.....+0.0, -0.1mm
Thinkness Tolerance..... ±0.2mm
Clear Aperture.....> 85%
Parallelism.....<1 arc minute
Surface Quality.....60-40 scratch and dig
Flatness.....λ/4 per 25mm @632.8nm
Wavefront Distortion.....λ/4 per 25mm @632.8nm
Bevel.....0.25mm x 45°

P/N	Φ	T
10201	10.00	3.00
10202	12.70	3.00
10203	25.40	3.00
10204	38.00	3.00
10205	50.00	3.00

- Demension unit:mm
- Other sizes and coatings are available upon request.

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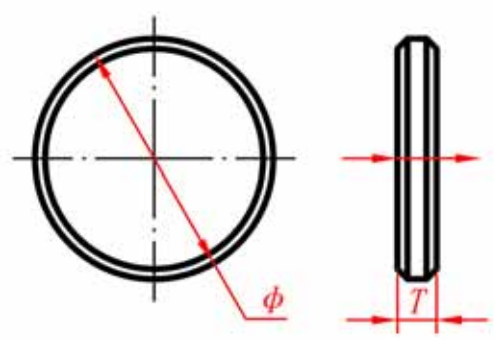
High Precision Fused Silica Window



Specifications:

Material.....UV grade fused silica
Diameter Tolerance.....+0.0, -0.1mm
Thinkness Tolerance.....± 0.2mm
Clear Aperture.....> 85%
Parallelism.....< 10 arc seconds
Surface Quality.....40-20 scratch and dig
Flatness.....λ/10 per 25mm@632.8nm
Wavefront Distortion.....λ/10 per 25mm@632.8nm
Bevel.....0.25 mm x 45°

P/N	Φ	T
10301	10.00	6.00
10302	12.70	6.00
10303	15.00	6.00
10304	20.00	6.00
10305	25.40	6.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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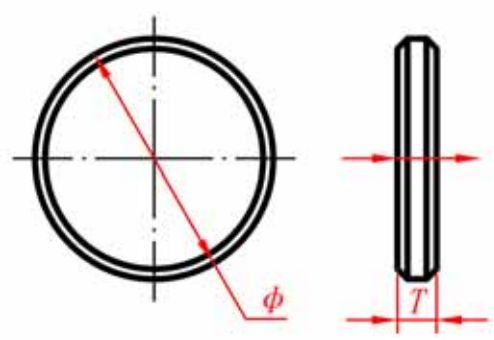
Standard Fused Silica Window



Specifications:

Material.....UV grade fused silica
Diameter Tolerance.....+0.0, - 0.1mm
Thinkness Tolerance.....± 0.2mm
Clear Aperture.....> 85%
Parallelism.....<1 arc minute
Surface Quality.....60-40 scratch and dig
Flatness.....λ/4 per 25mm @632.8nm
Wavefront Distortion.....λ/4 per 25mm @632.8nm
Bevel.....0.25mm x 45°

P/N	Φ	T
10401	10.00	3.00
10402	12.70	3.00
10403	25.40	3.00
10404	38.00	3.00
10405	50.00	3.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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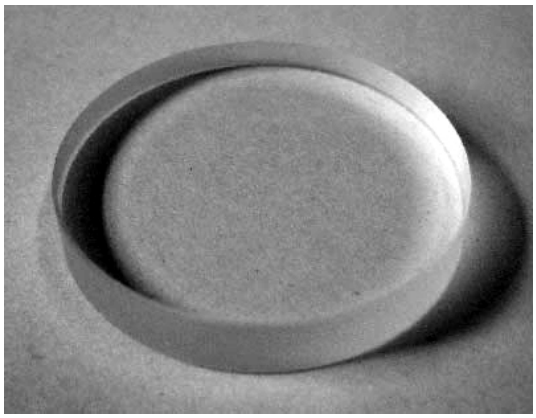
Calcium Fluoride Window



Calcium Fluoride Windows are applicable for wide rang spectrum, and it is particularly useful for at 2980nm laser application.

Specifications:
Material.....Calcium Fluoride single crystal
Diameter Tolerance.....+0.0, -0.1mm
Thinkness Tolerance.....±0.2mm
Clear Aperture.....> 85%
Parallelism.....< 1 arc minute
Surface Quality.....80-50 scratch and dig
Flatness.....λ per 25mm @632.8nm
Wavefront Distortion.....λ per 25mm @632.8nm
Bevel.....0.25mm x 45°

P/N	Φ	T
10501	12.70	2.00
10502	25.40	3.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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MgF_2 Window

Magnesium Fluoride offers excellent broadband transmission from the DUV to the mid-IR. It's DUV transmission makes it ideal for use at the Hydrogen Lyman-alpha line and for UV radiation sources and receivers, as well as excimer laser applications. It is a rugged material resistant to chemical etching, laser damage, and mechanical and thermal shock.Magnesium Fluoride has a Knoop Hardness of 415 and index of refraction of 1.38.

1)Excellent Transmission from 120nm to 7μm

2)Rugged and Durable

Specifications:

1.Material:MgF2(Optical Grade)

2.Clear Aperture:90% of Diameter

3.Dimensional Tolerance:+0.0/-0.1mm

4.Thickness Tolerance:±0.1mm

5.Surface Quality:40-20

6.Surface Accuracy:λ/2@632.8nm

7.Parallelism:<1 arc min.

P/N	Φ	T
10601	10.00	2.00
10602	12.70	2.00
10603	15.00	2.00
10604	20.00	3.00
10605	25.40	3.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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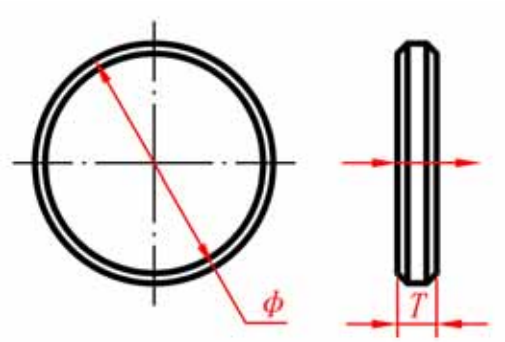
Sapphire Window



Single crystal sapphire possesses a unique combination of excellent optical, physical and chemical properties. The hardest of the oxide crystals, sapphire retains its high strength at high temperatures, has good thermal properties and excellent transparency. It is chemically resistant to common acids and alkali at temperatures up to 1000 °C as well as to HF below 300°C .These properties encourage its wide use in hostile environments where optical transmission in the range from the vacuum ultraviolet to the near infrared is required. Sapphire is anisotropic hexagonal crystal. Its properties depend on crystallographic direction (relative to the optical C-axis).

Features:

- Transmission in 0.3-5.0μm, no absorption in 2-3μm
- Extremely hard and durable
- High thermal conductivity
- High bulk damage threshold

Specifications:

Material .....Anisotropic synthetic sapphire crystal (Al_2O_3)
Orientation.....Random
Diameter Tolerance .....+0.0, -0.1mm
Thickness Tolerance .....±0.2mm
Clear Aaperture .....>80%
Parallelism .....3 arc minutes
Surface Quality .....120-80 scratch and dig
Flatness.....2λ per 25mm at 633nm
Bevel.....Protective Bevel

P/N	Φ	T
10701	8.00	0.50
10702	10.00	0.90
10703	12.00	1.00
10704	25.00	1.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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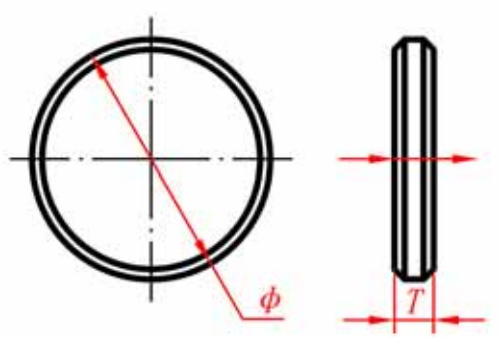
Germanium Window



Germanium is popular for its high index of refraction (around 4.0 from 2-14μm). Due to its high index, an antireflection coating is required for sufficient transmission in the region of interest. Our Germanium windows are available from stock with two AR coating options: 3-12μm for mid IR or broadband multi-spectral applications, or 8-12μm for thermal imaging applications. Germanium is subject to thermal runaway, meaning that the transmission decreases as temperature increases. As such, they should be used at temperatures below 100°C. Germanium's high density (5.33 g/cm3) should be considered when designing for weight-sensitive systems. The 8-12μm coated Germanium windows are typically used in thermal imaging and FLIR applications. The Knoop Hardness of Germanium (780) is approximately twice that of Magnesium Fluoride, making it ideal for IR applications requiring rugged optics.

Specifications:
Material.....Ge(Optical Grade)
Clear Aperture.....90% of Diameter
Diameter Tolerance.....+0.0/-0.1mm
Thickness Tolerance.....±0.1mm
Surface Quality.....40-20
Surface Accuracy.....λ/10@632.8nm
Parallelism.....<1 arc min

P/N	Φ	T
10801	10.00	1.50
10802	12.70	2.00
10803	15.00	2.00
10804	20.00	2.00
10805	25.40	3.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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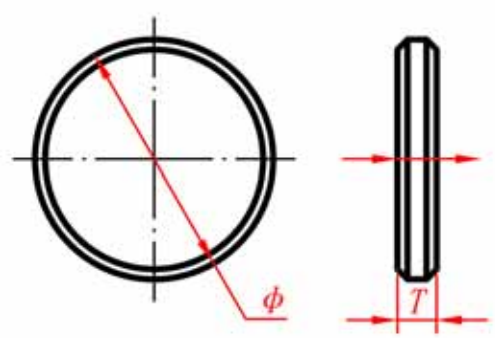
Silicon Window



Silicon is another material that is frequently utilized in infrared systems – however due to absorption it is not suitable for CO2 transmitting optics. Silicon can be used from 1.2 to 7μm but only has about 50% transmission in this range. Because of this, we have added an AR coating to enhance the performance from 3-5μm. With a density of 2.329g/cm3, Si is ideal for use in systems where weight is a concern.

Specifications:
Material.....Si(Optical Grade)
Clear Aperture.....90% of Diameter
Dimensional Tolerance.....+0.0/-0.1mm
Thickness Tolerance.....±0.1mm
Surface Quality.....40-20
Surface Accuracy.....1λ@ 632.8nm
Parallelism.....<3 arc min.

P/N	Φ	T
10901	10.00	1.50
10902	12.70	2.00
10903	15.00	2.00
10904	20.00	3.00
10905	25.40	3.00

●Demension unit:mm

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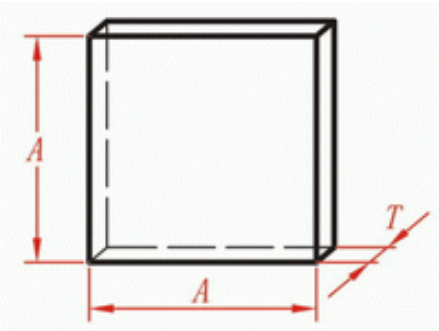
Float Glass Window



Specifications:

Material.....Float White Glass
Width Tolerance.....+0.0, -0.1mm
Thinkness Tolerance.....± 0.2mm
Clear Aperture.....> 85%
Parallelism.....< 20 arc seconds
Surface Quality.....120-80 scratch and dig
Flatness.....λ/ per 25mm @632.8nm
Wavefront Distortion.....λ/ per 25mm @632.8nm
Bevel.....0.25mm x 45°

P/N	A	T
11001	25.00	2.00
11002	50.00	2.00
11003	100.00	2.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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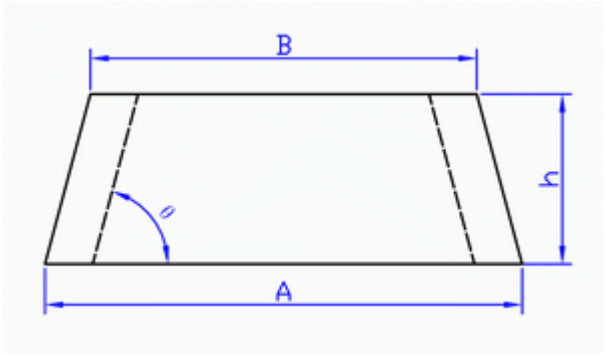
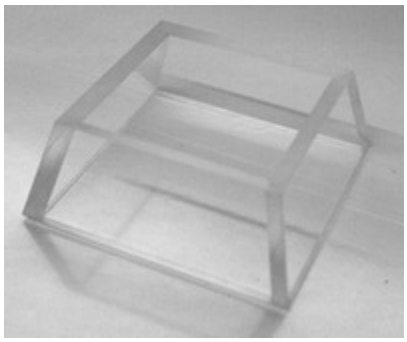
Glass House Window



These windows are assembled by four strict sized BK7 or Float glass with optical glue, they are mainly used in Automatic Self-Leveling machine.



Specifications:

Material.....BK7 or Equivalent Grade A
Assembled Tolerance.....±0.2mm
Thickness Tolerance.....± 0.1mm
Clear Aperture.....>85%
Parallelism.....<10 arc seconds
Surface Quality.....60-40 scratch and dig
Flatness.....λ/4@632.8nm
Bevel.....0.20x45°

P/N	A	B	h	θ
11101	72.00	72.00	33.00	90°
11102	80.00	80.00	60.00	90°
11103	68.50	-	32.00	75°

●Demension unit:mm

●Other sizes and coatings are available upon request.

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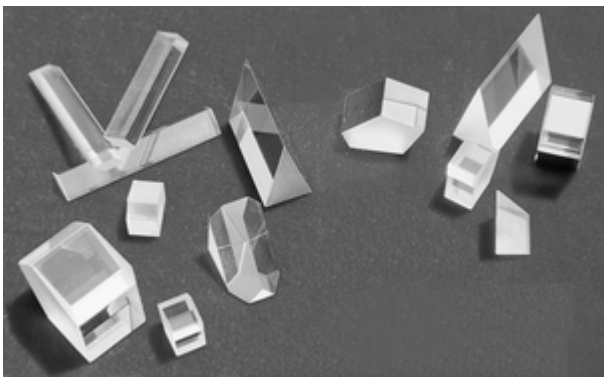
Prisms



Prisms are blocks of optical material with flat polished sides arranged at precisely controlled angles to each other. Prisms may be used in an optical system to deflect or deviate a beam of light.They can invert or rotate an image, disperse light into its component,wavelengths,and be used to separate states of polarization.

- Right Angle Prism
- Penta Prism
- Pricesion Penta Prism
- Beamsplitter Penta Prism
- Precision Beamsplitter Penta Prism
- Dove Prism
- Roof Prism
- Rhombic Prism
- Wedge Prism
- Dispersing Prism
- Corner Cube Prism

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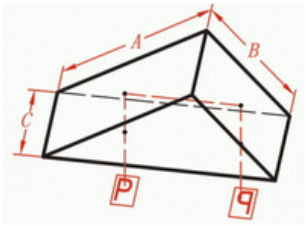
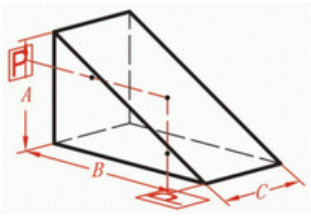
Right Angle Prism





Right angle prisms are generally used to achieve a 90° light path bend. Depending on prisms orientation, images will be inverted, but correct left-to-right. If the prism is rotated 90° , images viewed though the prism will be erect, but reversed left-to-right. Prisms can also be used in combination for image/beam displacement.

90° Deflection

90° deflection occurs at the face. The hypotenuse image is erected and reversed.

180° Deflection

180° deflection uses with hypotenuse as the entrance and exit face. The main application is as a retro-reflector provided that the plane of incident beam includes the vertex.

Specification:

Material.....BK7 grade A optical glass
Dimension Tolerance.....+0.0, -0.2mm
Clear Aperture.....> 85%
Angle Tolerance.....see the table
Flatness.....λ/2 @ 632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....from 0.2mm to 0.5mm x 45°

P/N	A	B	C	Deviation
20101	3.20	3.20	3.20	180"
20102	3.20	3.20	3.20	60"
20103	3.20	3.20	3.20	30"
20104	3.20	3.20	3.20	10"
20105	8.00	8.00	8.00	180"
20106	8.00	8.00	8.00	60"
20107	8.00	8.00	8.00	30"

●Demension unit:mm

●Other sizes and coatings are available upon request.

P/N	A	B	C	Deviation
20108	8.00	8.00	8.00	10"
20109	10.00	10.00	10.00	180"
20110	10.00	10.00	10.00	60"
20111	10.00	10.00	10.00	30"
20112	10.00	10.00	10.00	10"
20113	12.70	12.70	12.70	180"
20114	12.70	12.70	12.70	60"
20115	12.70	12.70	12.70	30"
20116	12.70	12.70	12.70	10"

●Demension unit:mm

●Other sizes and coatings are available upon request.

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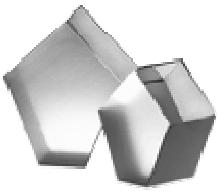
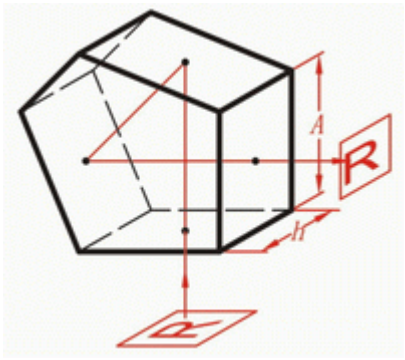
Penta Prism





Specification:

Material.....BK7 grade A optical glass

Dimension Tolerance.....±0.2mm

90° Deviation Tolerance.....< 30 arc seconds

Flatness.....λ/2 @632.8nm

Reflectivity.....R > 95% per face from 630 to 680 nm

Surface Quality.....60-40 scratch and dig

P/N	A	h	Deviation
20201	7.00	6.00	60"
20202	7.00	6.00	30"
20203	7.00	6.00	10"
20204	7.00	6.00	5"
20205	8.00	8.00	60"
20206	8.00	8.00	30"
20207	8.00	8.00	10"
20209	8.00	8.00	5"
20210	10.00	10.00	60"
20211	10.00	10.00	30"
20212	10.00	10.00	10"
20213	10.00	10.00	5"
20214	12.00	12.00	60"
20215	12.00	12.00	30"
20216	12.00	12.00	10"
20217	12.00	12.00	5"

●Demension unit:mm

●Other sizes and coatings are available upon request.

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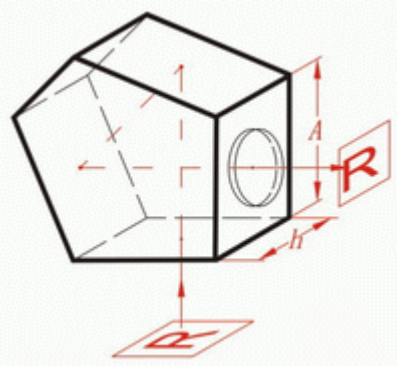
Pricesion Penta Prism



By adding a wedge, it can be used as Precision Penta Prism. It is often used in Plumb Level, Surveying, Alignment, Rangefinding and Optical Tooling.

Specification:

Material.....BK7 grade A optical glass
Dimension Tolerance..... 0.2mm
90° Deviation Tolerance.....1 arc seconds
Flatness.....λ/4 @632.8nm
Reflectivity.....R > 95% per face from 630 to 680 nm
Surface Quality.....60-40 scratch and dig

P/N	A	h	Deviation
20301	10.00	10.00	1"

●Demension unit:mm

●Other sizes and coatings are available upon request.

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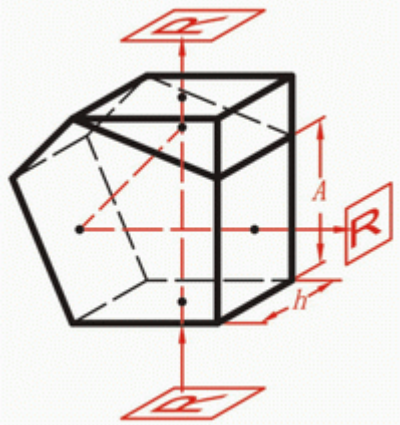
Beamsplitter Penta Prism



By adding a wedge and with partial reflective coating on surface S1, it can be used as Beamsplitter, which we named as Beamsplitter Penta Prism. Transmission/ Reflection (T/R) ratio of 20/80, 50/50 or others for Beamsplitter Penta Prism is available upon equest.

Specification:

Material..... .BK7 grade A optical glass

Dimension Tolerance..... .....±0.2mm

90°,180° Deviation Tolerance.. ....< 30 arc seconds

Flatness..... ....λ/2 @632.8nm

Reflectivity.....R > 95% per face from 630 to 680 nm

Surface Quality.....60-40 scratch and dig

Beamsplitter Ratio Transmission/Reflection

@630-680nm, T/R: 20/80±5

P/N	A	h	Deviation
20401	6	5.8	60"
20402	6	5.8	30"
20403	6	5.8	10"
20404	6	5.8	5"
20405	7	6	60"
20406	7	6	30"
20407	7	6	10"

●Demension unit:mm

●Other sizes and coatings are available upon request.

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P/N	A	h	Deviation
20408	7	6	5"
20409	8	8	60"
20410	8	8	30"
20411	8	8	10"
20412	8	8	5"
20413	10	10	60"
20414	10	10	30"
20415	10	10	10"
20416	10	10	5"

●Demension unit:mm

●Other sizes and coatings are available upon request.

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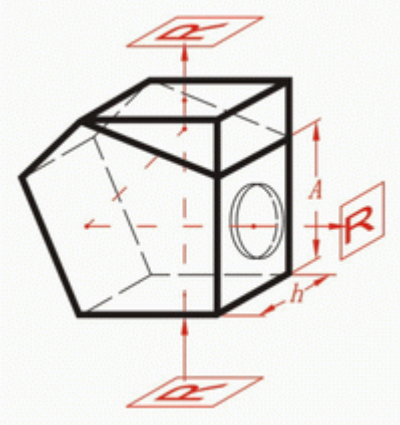
Precision Beamsplitter Penta Prism



By adding a wedge and with partial reflective coating on surface S1, it can be used as Beamsplitter, which we named as Beamsplitter Penta Prism. Transmission/ Reflection (T/R) ratio of 20/80, 50/50 or others for Beamsplitter Penta Prism is available upon request. It is often used in Plumb Level, Surveying, Alignment, Rangefinding and Optical Tooling.

Specification:
Material.....BK7 grade A optical glass
Dimension Tolerance.....±0.2mm
90°,180° Deviation Tolerance.....< 1 arc seconds
Flatness.....λ/4 @632.8nm
Reflectivity.....R > 95% per face from 630 to 680 nm
Surface Quality.....60-40 scratch and dig
Beamsplitter Ratio.....T/R: 20/80±5@630-680nm

P/N	A	h	Deviation
20501	10.00	10.00	1"

●Demension unit:mm
●Other sizes and coatings are available upon request.

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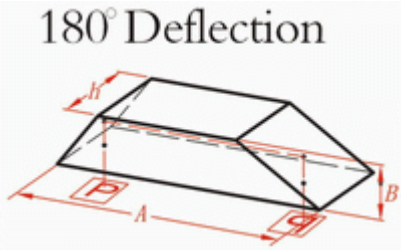
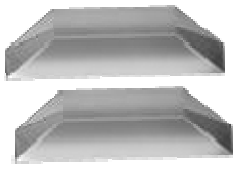
Dove Prism





Dove Prism is a form of prism invented by H. W. Dove. It resembles half of a common right-angle prism in which a ray entering parallel to hypotenuse face is reflected internally at that face and emerges parallel to its incident direction. One of the incident rays emerges along a continuation of its incident direction, and if the prism is rotated about that ray hrough some angle, the image rotates through twice that angle. A Dove Prism must be used in parallel light.

Specification:

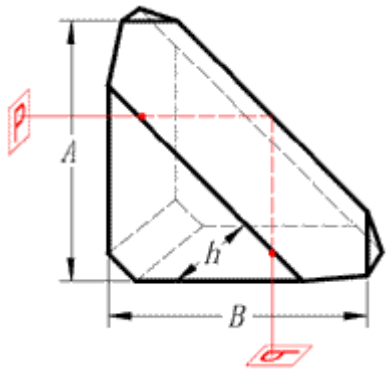
Material.....see the table
Dimension Tolerance.....+0.0, -0.2mm
Clear Aperture.....> 85%
Angle Tolerance.....< 3 arc minutes
Flatness.....λ/2 @ 632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....from 0.2mm to 0.5mm x 45°
Deflection Model.....180° deflection
Coating.....R < 0.25% @1550nm on big face(input and output at the same face)

P/N	Material	A	B	h
20601	(N-)SF11	9.30	2.60	1.30
20602	(N-)SF11	14.00	5.00	2.60
20603	(N-)BK7	80	20	20
20604	(N-)BK7	21.10	5.00	5.00
20605	(N-)BK7	42.30	10.00	10.00
20606	(N-)BK7	63.40	15.00	15.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

Roof Prism



Specification:

Material.....BK7 grade A optical glass

Dimension Tolerance.....+0.0, 0.2mm

Clear Aperture.....> 85%

Flatness.....λ/2 @ 632.8nm

Surface Quality.....60-40 scratch and dig

Bevel.....from 0.2mm to 0.5mm x 45°

P/N	A	B	h
20701	19.12	19.12	14.00
20702	27.40	27.40	20.00

●Demension unit:mm

●Other sizes and coatings are available upon request.

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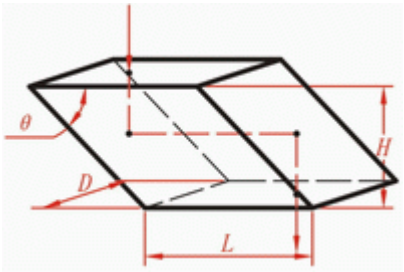
Rhombic Prism



Specifications:

Material.....BK7 grade A optical glass

Dimension Tolerance.....+0.0, -0.1mm

Clear Aperture.....> 90%

Surface Quality

Standard Series.....60-40 scratch and dig

Precision Series.....up to 20-10 scratch and dig

Flatness.....λ/8 @632.8nm

Parallelism.....< 5 arc seconds

Angle Tolerance.....< 1 arc minute

AR Coating.....R < 0.2%@1550nm 40nm
on input and output surface

Bevel.....0.2mm x 45°

P/N	H	L	D	θ
20801	10.00	10.00	10.00	45°
20802	15.00	15.00	15.00	45°

●Demension unit:mm

●Other sizes and coatings are available upon request.

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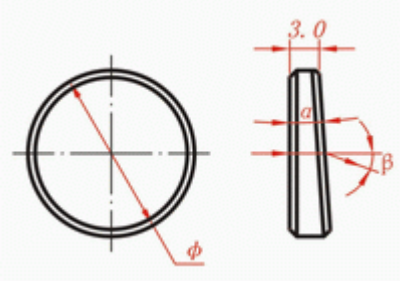
Wedge Prism



Wedge is an optical element having plane-inclined surfaces, usually the faces are inclined toward one another at very small angles. Wedges divert light toward their thicker portions.

Specification:

Material.....BK7 grade A optical glass
Design Wavelength 632.8nm
Design Index.....1.51467@ 632.8nm
Diameter Tolerance.....+0.0, -0.1mm
Thinkness Tolerance..... ±0.2mm
Clear Aperture.....> 85%
Surface Quality.....60-40 scratch and dig
Flatness.....λ/4 @632.8nm
Wedge Angle.....< 1 arc minute
Bevel.....0.25mm x 45°

P/N	Φ	α	β
20901	25.40	1°	1°57'
20902	25.40	2°	3°53'
20903	25.40	4°	7°46'

●Demension unit:mm

●Other sizes and coatings are available upon request.

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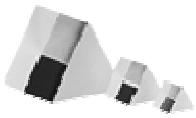
Dispersing Prism



Dispersing Prisms are used to separate a white light beam into its component colors.Gernerally,the light is first collimated and dispersed by the prism.A spectrum id then formed at the focal plane of a lens or curved mirror.

In laser work,dispersing prisms are used to separate two wavelengths following the same beam path.Typically,the dispersed beams are permitted to travel far enough so the beams separate spatially.

Specifications:

Material.....BK7 glass,UV Fused Silica
Dimension Tolerance.....+0.0, -0.2mm
Clear Aperture.....>80%
Surface Quality.....20-10 scratch and dig
Flatness.....λ/2@632.8nm
Angle Tolerance.....±3'
Bevel.....protected bevel

P/N	A	B	C	Material
21001	5.00	5.00	5.00	BK7
21002	10.00	10.00	10.00	BK7
21003	15.00	15.00	15.00	BK7
21004	20.00	20.00	20.00	BK7
21005	25.00	25.00	25.00	BK7
21006	5.00	5.00	5.00	UV Fused Silica
21007	10.00	10.00	10.00	UV Fused Silica
21008	15.00	15.00	15.00	UV Fused Silica
21009	20.00	20.00	20.00	UV Fused Silica
21010	25.00	25.00	25.00	UV Fused Silica

●Demension unit:mm

●Other sizes,materials and coatings are available upon request.

P/N	A	B	C	Material
21011	5.00	5.00	5.00	(N-)SF11
21012	10.00	10.00	10.00	(N-)SF11
21013	15.00	15.00	15.00	(N-)SF11
21014	20.00	20.00	20.00	(N-)SF11
21015	25.00	25.00	25.00	(N-)SF11

●Demension unit:mm

●Other sizes,materials and coatings are available upon request.

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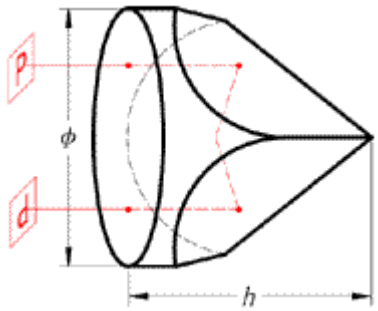
Corner Cube Prism



Corner Cube Prisms, which have three mutually perpendicular surfaces and a hypotenuse face, are designed to reflect any ray or beam entering the prism face, regardless of the orientation of the prism, back onto itself.A mirror will only do that at the normal angle of incidence.There are three total internal reflections within the corner cube.

Specification:

Material.....BK7 grade A optical glass
Dimension Tolerance.....+0.0, -0.2mm
Clear Aperture.....> 85%
Deviation.....180°± 3 arc seconds
Flatness.....λ/4 @ 632.8nm on big surface
λ/10 @ 632.8nm on other surface
Wavefront Distortion.....λ/2 @ 632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....from 0.2mm to 0.5mm x 45°

P/N	Φ	h
21101	15.00	11.30
21102	25.40	19.00
21103	50.80	37.50

●Demension unit:mm

●Other sizes and coatings are available upon request.

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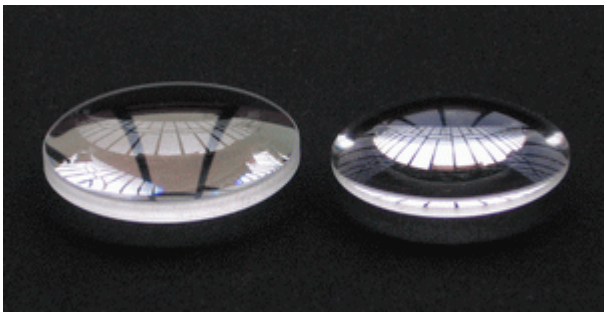
Spherical Lenses



Lenses are a transparent optical component consisting of one or more pieces of optical glass with surfaces so curved (usually spherical) that they serve to converge or diverge the transmitted rays from an object, thus forming a real or virtual image of that object. Lenses are classified as single lenses, cylindrical lenses and achromatic lenses. Eastoptics provides these lenses with BK7 and fused silica. Special focusing systems can be designed by Eastoptics's engineers upon request.

- Fused Silica Plano-Convex Lens
- Fused Silica Double-Convex Lens
- Fused Silica Plano-Concave Lens
- Fused Silica Double-Concave Lens
- BK7 Plano-Convex Lens
- BK7 Double-Convex Lens
- BK7 Plano-Concave Lens
- BK7 Double-Concave Lens
- BK7 Positive Meniscus Lens
- BK7 Negative Meniscus Lens
- Positive Achromatic Lens
- Negative Achromatic Lens
- Sapphire Plano-Convex Lens
- Sapphire Plano-Concave Lens
- CaF_2 Plano-Convex Lens
- CaF_2 Plano-Concave Lens

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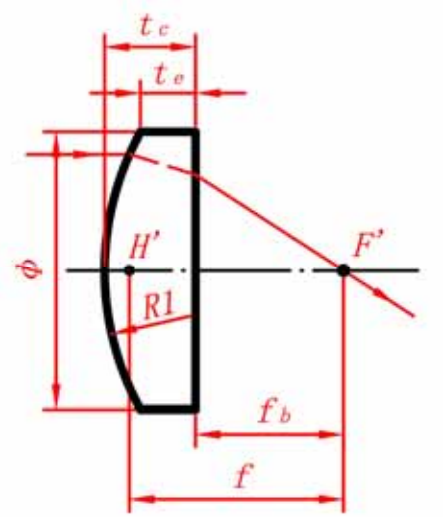
Fused Silica Plano-Convex Lens



Specification:

Material.....UV grade fused silica
Design Wavelength.....546.1nm
Design Index.....1.46008±0.00005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2 %
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	t_c	t_e	f_b
30101	6.00	4.00	3.101	1.50	0.77	5.00
30102	8.00	6.00	4.15	3.30	-	5.80
30103	10.00	5.00	5.17	1.64	-	8.91
30104	10.00	6.00	5.18	3.00	-	8.00
30105	15.00	12.70	6.90	6.20	2.00	10.80
30106	20.00	12.70	9.20	4.50	2.00	16.90
30107	25.00	12.70	11.50	3.90	2.00	22.30
30108	30.00	12.70	13.80	3.60	2.00	27.50
30109	40.00	12.70	18.40	3.10	2.00	37.90
30110	35.00	25.40	16.10	8.20	2.00	29.40

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P/N	f	Φ	R_1	t_c	t_e	f_b
30111	50.00	25.40	23.00	5.80	2.00	46.00
30112	75.00	25.40	34.51	4.40	2.00	72.00
30113	100.00	25.40	46.01	3.80	2.00	97.40
30114	150.00	25.40	69.01	3.20	2.00	147.80
30115	175.00	25.40	80.51	3.00	2.00	172.90
30116	200.00	25.40	92.02	2.90	2.00	198.00
30117	250.00	25.40	115.02	2.70	2.00	248.20
30118	300.00	25.40	138.02	2.60	2.00	298.20
30119	500.00	25.40	230.04	2.40	2.00	498.40
30120	1000.00	25.40	460.08	2.20	2.00	998.50
30121	50.00	38.00	23.00	13.00	3.00	41.10
30122	100.00	38.00	46.01	7.10	3.00	95.10
30123	150.00	38.00	69.01	5.70	3.00	146.10
30124	200.00	38.00	92.02	5.00	3.00	196.60
30125	350.00	38.00	161.03	4.10	3.00	347.20
30126	500.00	38.00	230.04	3.80	3.00	497.40

●Demension unit:mm

●Other sizes and coatings are available upon request.

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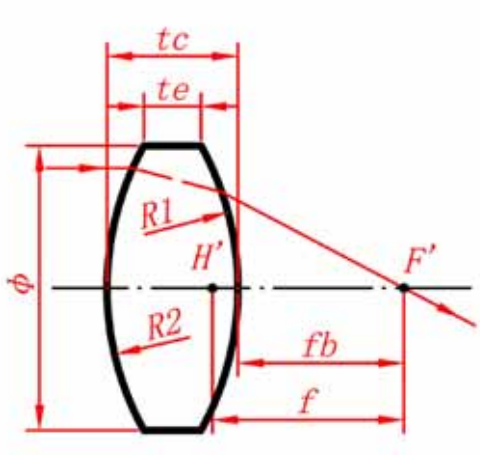
Fused Silica Double-Convex Lens



Specifications:

Material .....UV Grade Fused Silica

Design Wavelength 546.1nm

Design Index .....1.46008 ± 0.00005

Diameter Tolerance .....+0.0/-0.15mm

Paraxial Focal Length .....±2%

Centration .....<3 arc minutes

Clear Aperture .....>80%

Surface Irregularity.....λ/4 per 25mm at 632.8nm

Surface Quality .....60-40 scratch and dig

Bevel.....Protective Bevel

P/N	f	Φ	$R_1=R_2$	t_c	t_e	f_b
30201	15.0	12.7	12.90	5.3	2.0	13.1
30202	20.0	12.7	17.69	4.4	2.0	18.4
30203	25.0	12.7	22.38	3.8	2.0	23.7
30204	30.0	12.7	27.04	3.5	2.0	28.8
30205	40.0	12.7	36.31	3.1	2.0	38.9
30206	25.0	25.4	21.22	10.4	2.0	21.1
30207	35.0	25.4	30.99	7.4	2.0	32.4
30208	50.0	25.4	45.10	5.7	2.0	48.0
30209	75.0	25.4	68.32	4.4	2.0	73.5
30210	100.0	25.4	91.42	3.8	2.0	98.7
30211	150.0	25.4	137.52	3.2	2.0	148.9
30212	200.0	25.4	183.58	2.9	.2	199.0
30213	250.0	25.4	229.61	2.7	2.0	249.1

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P/N	f	Φ	$R_1=R_2$	t_c	t_e	f_b
30214	300.0	25.4	275.64	2.6	2.0	299.1
30215	500.0	25.4	459.71	2.4	2.0	499.2
30216	1000.0	25.4	919.82	2.2	2.0	999.2
30217	50.0	38.0	44.10	11.6	3.0	45.9
30218	100.0	38.0	90.90	7.0	3.0	97.6
30219	150.0	38.0	137.13	5.7	3.0	148.0
30220	200.0	38.0	183.13	5.0	3.0	198.3
30221	350.0	38.0	321.41	4.1	3.0	348.6
30222	500.0	38.0	459.48	3.8	3.0	498.7

●Demension unit:mm

●Other sizes and coatings are available upon request.

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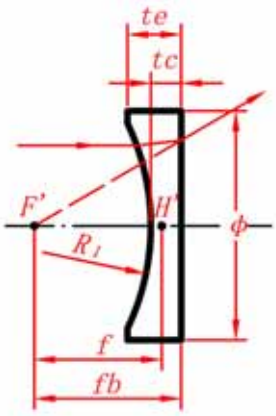
Fused Silica Plano-Concave Lens



Specifications:

Material .....UV Grade Fused Silica
Design Wavelength 546.1nm
Design Index .....1.46008 ± 0.00005
Diameter Tolerance .....+0.0/-0.15mm
Paraxial Focal Length .....±2%
Centration .....<3 arc minutes
Clear Aperture .....>80%
Surface Irregularity.....λ/4 per 25mm at 632.8nm
Surface Quality .....60-40 scratch and dig
Bevel.....Protective Bevel

P/N	f	Φ	R_1	t_c	t_e	f_b
30301	-15.0	12.7	6.90	2.0	6.2	-16.4
30302	-20.0	12.7	9.20	2.0	4.5	-21.4
30303	-25.0	12.7	11.50	2.0	3.9	-26.4
30304	-30.0	12.7	13.80	2.0	3.5	-31.4
30305	-40.0	12.7	18.40	2.0	3.1	-41.4
30306	-35.0	25.4	16.10	2.0	8.2	-36.4
30307	-50.0	25.4	23.00	2.0	5.8	-51.4
30308	-75.0	25.4	34.51	2.0	4.4	-76.4
30309	-100.0	25.4	46.01	2.0	3.8	-101.4
30310	-150.0	25.4	69.01	2.0	3.2	-151.4
30311	-175.0	25.4	80.50	2.0	3.0	-176.4
30312	-200.0	25.4	92.02	2.0	2.9	-201.4
30313	-250.0	25.4	115.02	2.0	2.7	-251.4
30314	-300.0	25.4	138.02	2.0	2.6	-301.4

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P/N	f	Φ	R_1	t_c	t_e	f_b
30315	-500.0	25.4	230.04	2.0	2.4	-501.4
30316	-1000.0	25.4	460.08	2.0	2.2	-1001.4
30317	-50.0	38.0	23.00	3.0	13.0	-52.1
30318	-100.0	38.0	46.01	3.0	7.1	-102.1
30319	-150.0	38.0	69.01	3.0	5.7	-152.1
30320	-200.0	38.0	92.02	3.0	5.0	-202.1
30321	-350.0	38.0	161.03	3.0	4.1	-352.1
30322	-500.0	38.0	230.04	3.0	3.8	-502.1

●Demension unit:mm

●Other sizes and coatings are available upon request.

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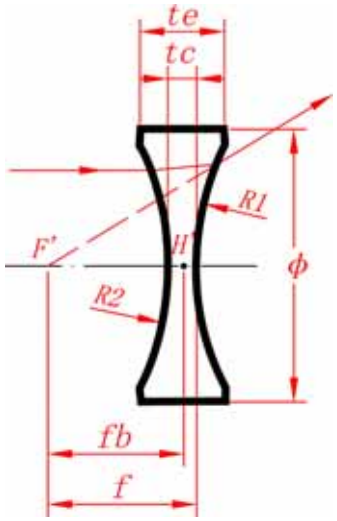
Fused Silica Double-Concave Lens



Specifications:

Material.....UV Grade Fused Silica

Design Wavelength 546.1nm

Design Index.....1.46008 ± 0.00005

Diameter Tolerance .....+0.0/-0.15mm

Paraxial Focal Length .....±2%

Centration.....<3 arc minutes

Clear Aperture.....>80%

Surface Irregularity.....λ/4 per 25mm at 632.8nm

Surface Quality.....60-40 scratch and dig

Bevel.....Protective Bevel

P/N	f	Φ	R_1=R_2	t_c	t_e	f_b
30401	-15.0	12.7	14.11	2.0	5.0	-15.7
30402	-20.0	12.7	18.71	2.0	4.2	-20.7
30403	-25.0	12.7	23.32	2.0	3.7	-25.7
30404	-30.0	12.7	27.92	2.0	3.5	-30.7
30405	-40.0	12.7	37.12	2.0	3.1	-40.7
30406	-25.0	25.4	23.32	2.0	9.5	-25.7
30407	-35.0	25.4	32.52	2.0	7.2	-35.7
30408	-50.0	25.4	46.32	2.0	5.6	-50.7
30409	-75.0	25.4	69.33	2.0	4.3	-75.7
30410	-100.0	25.4	92.33	2.0	3.8	-100.7
30411	-150.0	25.4	138.34	2.0	3.2	-150.7
30412	-200.0	25.4	184.35	2.0	2.9	-200.7

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P/N	f	Φ	R_1=R_2	t_c	t_e	f_b
30413	-250.0	25.4	230.36	2.0	2.7	-250.7
30414	-300.0	25.4	276.36	2.0	2.6	-300.7
30415	-500.0	25.4	460.40	2.0	2.4	-500.7
30416	-1000.0	25.4	920.48	2.0	2.2	-1000.7
30417	-50.0	38.0	46.48	3.0	11.1	-51.0
30418	-100.0	38.0	92.49	3.0	6.9	-101.0
30419	-150.0	38.0	138.50	3.0	5.6	-151.0
30420	-200.0	38.0	184.50	3.0	5.0	-201.0
30421	-350.0	38.0	322.53	3.0	4.1	-351.0
30422	-500.0	38.0	460.55	3.0	3.8	-501.0

●Demension unit:mm

●Other sizes and coatings are available upon request.

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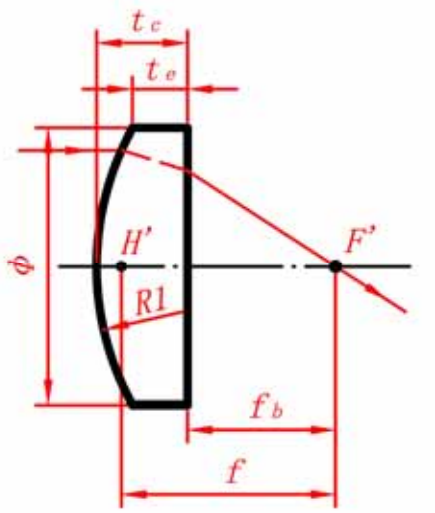
BK7 Plano-Convex Lens



These lenses have positive focus length. Most suitable where one conjugate is more than five times the other. e.g. in sensor application or for use with near collimated light. Also where both conjugates are on the same side of the lens, e.g. as an add-on lens to increase the numerical aperture.

Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....see the table
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	t_c	t_e	f_b
30501	4.00	2.00	2.073	1.26	1.00	3.20
30502	5.00	3.00	2.592	1.48	1.00	4.00
30503	6.00	4.00	3.101	1.50	0.77	5.00
30504	8.00	6.00	4.15	3.30	2.00	5.80
30505	22.0	10.0	11.40	3.1	1.9	20.0
30506	20.0	12.7	10.37	4.2	2.0	17.2

P/N	f	Φ	R_1	t_c	t_e	f_b
30507	30.0	12.7	15.55	3.4	2.0	27.8
30508	50.0	12.7	25.92	2.8	2.0	48.2
30509	100.0	12.7	51.83	2.4	2.0	98.4
30510	34.0	17.0	17.637	4.20	2.00	31.2
30511	35.0	20.0	18.155	4.20	1.20	32.2
30512	50.0	20.0	25.936	4.00	2.00	47.4
30513	40.0	22.4	20.73	5.3	2.0	36.5
30514	60.0	22.4	31.10	4.1	2.0	57.3
30515	75.0	22.4	38.905	3.50	1.85	72.7
30516	700.0	25.0	363.105	2.20	2.00	689.6
30517	35.0	25.4	18.14	7.2	2.0	30.3
30518	50.0	25.4	25.92	5.3	2.0	46.5
30519	60.0	25.4	31.10	4.7	2.0	56.9
30520	75.0	25.4	38.87	4.1	2.0	72.3
30521	125.0	25.4	64.79	3.3	2.0	122.8
30522	152.4	25.4	78.99	3.0	2.0	150.4
30523	200.0	25.4	103.66	2.8	2.0	198.2
30524	300.0	25.4	155.49	2.5	2.0	298.4
30525	1000.0	25.4	518.30	2.2	2.0	998.6
30526	80.0	30.0	41.46	4.8	2.0	76.8
30527	120.0	30.0	62.25	3.8	2.0	117.5
30528	50.0	38.0	25.92	11.3	3.0	42.6
30529	100.0	38.0	51.83	6.6	3.0	95.7
30530	200.0	38.0	103.66	4.8	3.0	196.8
30531	500.0	38.0	259.15	3.7	3.0	497.6
30532	150.0	42.0	77.808	4.90	2.00	146.8
30533	150.0	50.0	77.75	7.1	3.0	145.3
30534	250.0	50.0	129.58	5.4	3.0	246.4
30535	400.0	50.0	207.32	4.5	3.0	397.0
30536	500.0	50.0	259.15	4.2	3.0	497.2
30537	800.0	50.0	414.64	3.8	3.0	797.5
30538	88.9	50.8	46.114	10.60	3.00	81.9
30539	127.0	50.8	65.878	8.0	2.90	121.7
30540	70.0	60.0	36.311	18.60	2.70	57.8

●Demension unit:mm

●Other sizes and coatings are available upon request.

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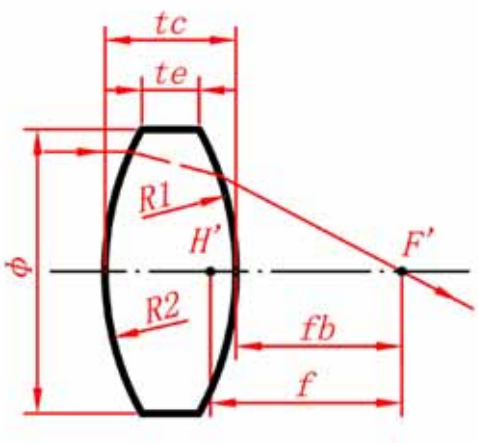
BK7 Double-Convex Lens



Double-Convex Lenses are most suitable where the conjugates are on opposite sides of the lensesand the ratio of the distances is less than 5:1, e.g. as simple image relay components.

Specification:
Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1=R_2	t_c	t_e	f_b
30601	8.00	6.00	7.70	3.20	2.00	6.90
30602	15.0	12.7	14.66	4.9	2.0	13.3
30603	25.0	12.7	25.28	3.6	2.0	23.8
30604	40.0	12.7	40.95	3.0	2.0	39.0
30605	75.0	12.7	77.30	2.6	2.0	74.1
30606	22.0	20.0	21.577	6.9	2.0	19.6
30607	20.0	21.0	19.239	8.2	2.0	17.1
30608	125.0	25.0	129.132	3.2	2.0	123.9
30609	31.7	25.4	31.56	7.3	2.0	29.2

P/N	f	Φ	$R_1=R_2$	t_c	t_e	f_b
30610	50.0	25.4	50.92	5.2	2.0	48.3
30611	100.0	25.4	103.05	3.6	2.0	98.8
30612	150.0	25.4	154.97	3.0	2.0	149.0
30613	200.0	25.4	206.84	2.8	2.0	199.0
30614	300.0	25.4	310.55	2.5	2.0	299.2
30615	1000.0	25.4	1036.23	2.2	2.0	999.3
30616	500.0	30.0	518.306	2.4	2.0	499.2
30617	45.0	38.0	44.836	10.4	2.0	41.4
30618	100.0	38.0	102.52	6.5	3.0	97.8
30619	200.0	38.0	206.51	4.8	3.0	198.4
30620	500.0	38.0	517.67	3.7	3.0	498.8
30621	50.8	38.1	51.063	9.3	1.9	47.6
30622	100.0	50.0	102.06	9.2	3.0	96.9
30623	200.0	50.0	206.28	6.0	3.0	198.0
30624	400.0	50.0	413.87	4.5	3.0	398.5
30625	500.0	50.0	517.58	4.2	3.0	498.6
30626	800.0	50.0	828.64	3.8	3.0	798.7
30627	250.0	100.0	257.0	13.7	3.9	245.4

●Demension unit:mm

●Other sizes and coatings are available upon request.

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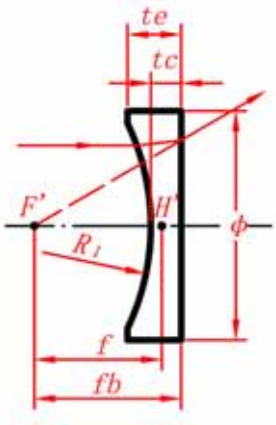
BK7 Plano-Concave Lens



Plano-Concave (PV) Lenses have one flat and one inward curved surface. PV lenses have a negative focal length and are used for image reduction or to spread light.

BK7 Plano-Concave Lenses
Specification:
Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	t_c	t_e	f_b
30701	-10.00	6.00	5.18	2.00	2.90	-11.30
30702	-20.0	10.0	10.37	2.0	3.2	-21.3
30703	-15.0	12.7	7.78	2.0	5.3	-16.3
30704	-20.0	12.7	10.37	2.0	4.1	-21.3
30705	-25.0	12.7	12.96	2.0	3.7	-26.3
30706	-30.0	12.7	15.55	2.0	3.4	-31.3
30707	-40.0	12.7	20.73	2.0	3.0	-41.3
30708	-50.0	12.7	25.92	2.0	2.8	-51.3
30709	-75.0	12.7	38.87	2.0	2.5	-76.3

P/N	f	Φ	R_1	t_c	t_e	f_b
30710	-100.0	12.7	51.83	2.0	2.3	-101.3
30711	-75.0	15.0	38.87	2.0	2.7	-76.3
30712	-40.0	21.0	20.73	2.0	4.7	-41.3
30713	-50.0	22.4	25.936	2.0	4.4	-51.3
30714	-100.0	22.4	51.83	2.0	3.2	-101.3
30715	-25.0	25.0	12.968	2.0	10.9	-26.3
30716	-35.0	25.4	18.14	2.0	7.2	-36.3
30717	-38.1	25.4	19.763	2.0	6.5	-39.4
30718	-50.0	25.4	25.92	2.0	5.3	-51.3
30719	-70.0	25.4	36.28	2.0	4.3	-71.3
30720	-75.0	25.4	38.87	2.0	4.1	-76.3
30721	-100.0	25.4	51.83	2.0	3.6	-101.3
30722	-125.0	25.4	64.79	2.0	3.3	-126.3
30723	-150.0	25.4	77.75	2.0	3.0	-151.3
30724	-175.0	25.4	90.70	2.0	2.8	-176.3
30725	-200.0	25.4	103.66	2.0	2.7	-201.3
30726	-250.0	25.4	129.58	2.0	2.6	-251.3
30727	-300.0	25.4	155.49	2.0	2.5	-301.3
30728	-500.0	25.4	259.15	2.0	2.3	-501.3
30729	-1000.0	25.4	518.30	2.0	2.2	-1001.3
30730	-80.0	30.0	41.46	2.0	4.8	-81.3
30731	-100.0	30.0	51.872	2.0	4.2	-101.3
30732	-200.0	30.0	103.744	2.0	3.1	201.3
30733	-50.0	38.0	25.92	3.0	11.3	-52.0
30734	-100.0	38.0	51.83	3.0	6.6	-102.0
30735	-150.0	38.0	77.75	3.0	5.5	-152.0
30736	-200.0	38.0	103.66	3.0	4.8	-202.0
30737	-350.0	38.0	181.41	3.0	4.0	-352.0
30738	-500.0	38.0	259.15	3.0	3.7	-502.0
30739	-700.0	38.0	362.81	3.0	3.5	-702.0
30740	-50.0	40.0	25.92	2.0	11.2	-51.3
30741	-75.0	50.0	38.904	2.0	11.8	-77.0
30742	-100.0	50.0	51.83	3.0	9.4	-102.0
30743	-150.0	50.0	77.75	3.0	7.1	-152.0
30744	-200.0	50.0	103.66	3.0	6.1	-202.0
30745	-250.0	50.0	129.58	3.0	5.4	-252.0

P/N	f	Φ	R_1	t_c	t_e	f_b
30746	-400.0	50.0	207.32	3.0	4.5	-402.0
30747	-450.0	50.0	233.24	3.0	4.3	-452.0
30748	-500.0	50.0	259.15	3.0	4.2	-502.0
30749	-600.0	50.0	310.98	3.0	4.0	-602.0
30750	-800.0	50.0	414.64	3.0	3.8	-802.0

●Demension unit:mm

●Other sizes and coatings are available upon request.

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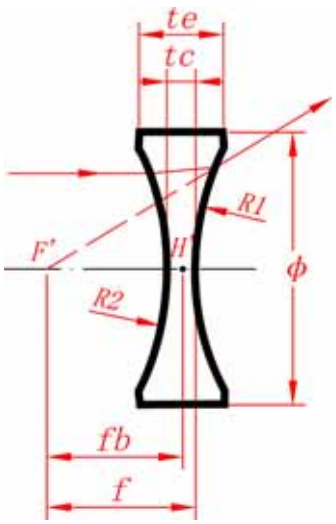
BK7 Double-Concave Lens



Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1=R_2	t_c	t_e	f_b
30801	-10.0	10.0	10.70	2.0	4.5	-10.6
30802	-15.0	12.7	15.88	2.0	4.6	-15.6
30803	-20.0	12.7	21.07	2.0	4.0	-20.6
30804	-25.0	12.7	26.25	2.0	3.6	-25.7
30805	-30.0	12.7	31.44	2.0	3.3	-30.7
30806	-40.0	12.7	41.80	2.0	3.0	-40.7
30807	-50.0	12.7	52.17	2.0	2.8	-50.7
30808	-35.0	25.4	36.62	2.0	6.5	-35.7
30809	-50.0	25.4	52.17	2.0	5.1	-50.7
30810	-75.0	25.4	78.09	2.0	4.1	-75.7

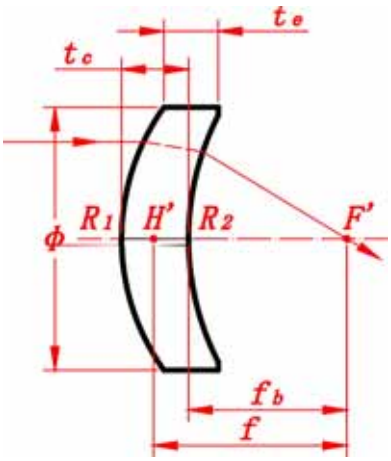
P/N	f	Φ	$R_1=R_2$	t_c	t_e	f_b
30811	-100.0	25.4	104.00	2.0	3.6	-100.7
30812	-125.0	25.4	129.92	2.0	3.2	-125.7
30813	-150.0	25.4	155.83	2.0	3.0	-150.7
30814	-175.0	25.4	181.75	2.0	2.9	-175.7
30815	-200.0	25.4	207.66	2.0	2.8	-200.7
30816	-250.0	25.4	259.49	2.0	2.6	-250.7
30817	-300.0	25.4	311.32	2.0	2.5	-300.7
30818	-500.0	25.4	518.64	2.0	2.3	-500.7
30819	-1000.0	25.4	1036.94	2.0	2.2	-1000.7
30820	-50.0	38.0	52.34	3.0	10.1	-51.0
30821	-100.0	38.0	104.17	3.0	6.5	-101.0
30822	-150.0	38.0	156.00	3.0	5.3	-151.0
30823	-200.0	38.0	207.83	3.0	4.7	-201.0
30824	-350.0	38.0	363.32	3.0	4.0	-351.0
30825	-500.0	38.0	518.81	3.0	3.7	-501.0
30826	-700.0	38.0	726.13	3.0	3.5	-701.0
30827	-100.0	50.0	104.17	3.0	9.1	-101.0
30828	-150.0	50.0	156.00	3.0	7.0	-151.0
30829	-200.0	50.0	207.83	3.0	6.0	-201.0
30830	-250.0	50.0	259.66	3.0	5.4	-251.0
30831	-400.0	50.0	415.15	3.0	4.5	-401.0
30832	-450.0	50.0	466.91	3.0	4.3	-451.0
30833	-500.0	50.0	518.82	3.0	4.2	-501.0
30834	-600.0	50.0	622.47	3.0	4.0	-601.0
30835	-800.0	50.0	829.73	3.0	3.8	-801.0

●Demension unit:mm

●Other sizes and coatings are available upon request.

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

BK7 Positive Meniscus Lens



Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	R_2	t_c	t_e	f_b
30901	100.0	25.4	33.72	90.00	4.0	2.5	97.5
30902	125.0	25.4	38.47	90.00	4.0	2.8	121.8
30903	150.0	25.4	42.52	90.00	4.0	3.0	146.3
30904	175.0	25.4	46.05	90.00	4.0	3.1	171.2
30905	200.0	25.4	49.03	90.00	3.5	2.8	197.0
30906	250.0	25.4	83.96	235.00	3.5	2.9	246.5
30907	300.0	25.4	94.08	235.00	3.5	3.0	296.3
30908	350.0	25.4	102.90	235.00	3.5	3.1	346.0
30909	400.0	25.4	110.72	235.00	3.5	3.1	395.8
30910	500.0	25.4	123.90	235.00	3.5	3.2	495.4
30911	600.0	25.4	204.95	600.00	3.5	3.2	595.3

P/N	f	Φ	R_1	R_2	t_c	t_e	f_b
30912	800.0	25.4	245.39	600.00	3.5	3.3	794.5
30913	1000.0	25.4	278.34	600.00	3.5	3.3	993.7
30914	1500.0	25.4	339.05	600.00	3.5	3.4	1492.0
30915	2000.0	25.4	380.54	600.00	3.5	3.4	1990.2
30916	4000.0	25.4	466.12	600.00	3.5	3.5	3984.5

●Demension unit:mm

●Other sizes and coatings are available upon request.

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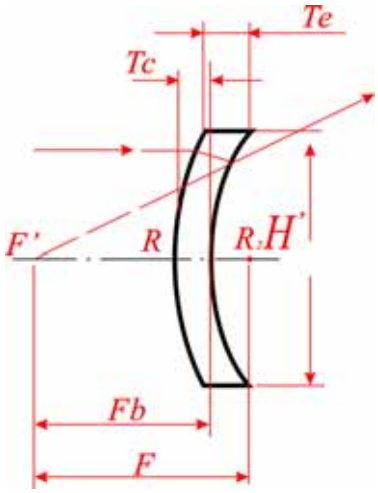
BK7 Negative Meniscus Lens



Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....546.1nm
Design Index.....1.5183±0.0005
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	R_2	t_c	t_e	f_b
31001	-100.00	25.40	90.00	32.59	3.00	4.50	-99.20
31002	-125.00	25.40	90.00	37.26	3.00	4.20	-123.70
31003	-150.00	25.40	90.00	41.42	3.00	4.00	-149.50
31004	-175.00	25.40	90.00	44.86	3.00	3.80	-174.60

●Demension unit:mm

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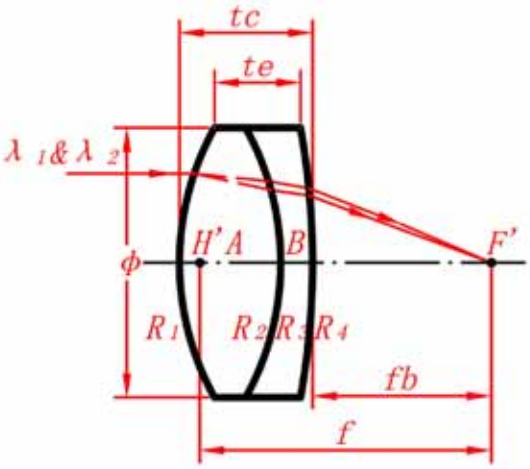
Positive Achromatic Lens



Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....480.0nm, 546.1nm, 634.8nm
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Coating.....single layer MgF2 @550nm
Bevel.....0.25mm x 45°

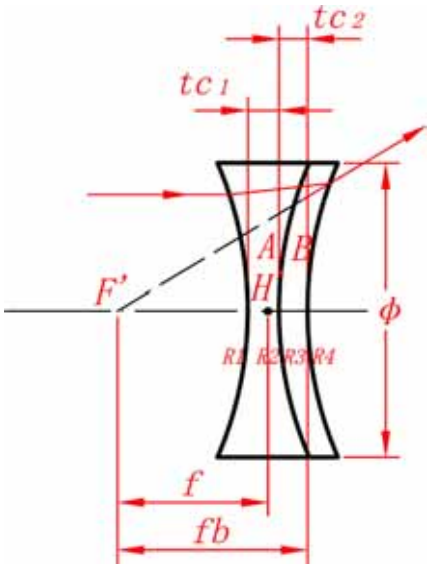
P/N	f	Φ	R_1	R_2=R_3	R_4	t_{c1}	t_{c2}	f_b	Lens A	Lens B
31101	10.0	6.0	6.546	-4.055	-23.23	3.6	0.8	7.54	SK9	SF15
31102	15.0	6.0	8.831	-6.546	-19.77	2.71	1.0	13.066	BK7	SF5
31103	20.0	6.0	12.359	-8.511	-24.38	2.6	1.0	18.288	BK7	SF5
31104	25.0	6.0	15.704	-10.666	-29.99	2.3	1.0	23.455	BK7	SF5
31105	30.0	6.0	18.88	-12.942	-36.48	1.9	1.0	28.695	BK7	SF5
31106	25.0	8.0	15.596	-10.814	-30.48	2.9	1.0	23.125	BK7	SF5
31107	30.0	8.0	18.88	-12.882	-36.22	2.7	1.0	28.277	BK7	SF5
31108	20.0	10.0	12.32	-9.02	-25.23	3.8	1.0	17.625	BK7	SF5
31109	25.0	12.0	15.346	-11.35	-31.92	4.2	1.3	22.286	BK7	SF5
31110	25.0	12.7	15.596	-11.402	-31.05	4.3	1.3	22.251	BK7	SF5
31111	30.0	12.7	18.535	-13.49	-37.84	4.0	1.3	27.360	BK7	SF5
31112	40.0	12.7	25.23	-17.539	-48.75	3.4	1.3	37.778	BK7	SF5

P/N	f	Φ	R_1	R_2=R_3	R_4	t_{c1}	t_{c2}	f_b	Lens A	Lens B
31113	50.0	12.7	31.26	-21.93	-62.37	3.1	1.3	47.992	BK7	SF5
31114	60.0	12.7	37.33	-26.42	-75.86	2.8	1.3	58.127	BK7	SF5
31115	75.0	12.7	46.77	-32.96	-94.62	2.6	1.3	73.227	BK7	SF5
31116	40.5	13.0	25.41	-18.072	-50.47	3.0	1.3	38.484	BK7	SF5
31117	44.0	14.0	27.54	-19.543	-54.95	3.3	1.3	41.834	BK7	SF5
31118	73.0	17.0	47.208	-31.008	-256.11	3.5	1.7	70.112	SK9	SF5
31119	40.0	18.0	24.27	-18.356	-53.09	5.4	1.5	36.513	BK7	SF5
31120	50.0	18.0	31.69	-22.0	-60.57	4.8	1.5	46.987	BK7	SF5
31121	60.0	18.0	37.84	-26.49	-73.79	4.1	1.5	57.299	BK7	SF5
31122	80.0	18.0	49.55	-36.81	-165.58	3.4	1.5	77.412	BaK1	SF8
31123	56.0	19.0	37.20	-29.11	-83.163	4.63	1.6	53.227	BaK4	SF4
31124	65.0	25.0	40.09	-29.58	-83.95	6.3	2.0	60.868	BK7	SF5
31125	50.0	25.4	34.59	-24.21	-179.06	7.8	2.0	44.522	BaF53	SF4
31126	60.0	25.4	37.33	-27.16	-75.86	7.0	2.0	55.565	BK7	SF5
31127	80.0	25.4	49.09	-37.93	-95.94	5.5	2.0	76.463	K7	SF1
31128	100.0	25.4	60.67	-44.67	-122.18	4.5	2.0	97.053	BK3	SF5
31129	120.0	25.4	73.28	-54.33	-159.96	4.2	2.0	117.103	BK7	SF5
31130	100.0	26.5	60.67	-44.57	-121.62	5.2	2.2	96.546	BK3	SF5
31131	100.0	30.0	59.02	-45.29	-127.64	6.8	2.5	95.261	BK3	SF5
31132	140.0	30.0	84.92	-62.23	-170.61	4.9	2.5	136.60	BK3	SF5

- Demension unit:mm
- Other sizes and coatings are available upon request.

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

Negative Achromatic Lens



Specification:

Material.....BK7 grade A optical glass
Design Wavelength.....480.0nm, 546.1nm, 634.8nm
Diameter Tolerance.....+0.00, -0.15mm
Paraxial Focus Length.....±2%
Centration.....< 3 arc minutes
Clear Aperture.....> 85%
Surface Figure.....λ/4 @632.8nm
Surface Quality.....60-40 scratch and dig
Coating.....single layer MgF2 @550nm
Bevel.....0.25mm x 45°

P/N	f	Φ	R_1	R_2=R_3	R_4	t_{c1}	t_{c2}	f_b	Lens A	Lens B
31201	-25.00	12.70	-15.60	13.09	44.16	3.00	2.67	-27.50	BK7	F2
31202	-40.00	12.70	-24.45	17.97	66.60	3.00	2.34	-42.50	BK7	F2
31203	-50	25.4	-31.19	24.89	85.31	3.00	4.22	-53.3	BK7	F2

●Demension unit:mm

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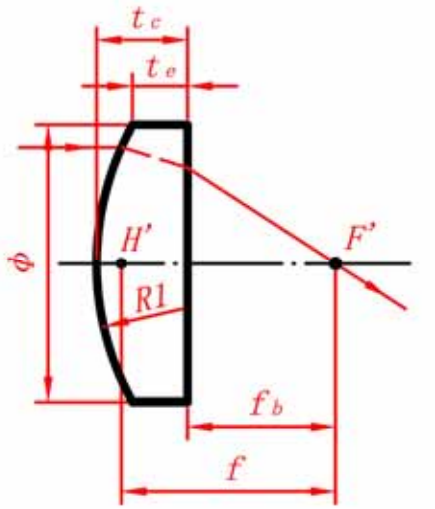
Sapphire Plano-Convex Lens



Specifications:

Material ..... Optical Grade Sapphire Crystal
Design Wavelength 546.1nm
Design Index ..... 1.771@546.1nm
Diameter Tolerance ..... +0.0, -0.15mm
Paraxial Focal Length ..... ±2%
Centration ..... <3 arc minutes
Clear Aperture ..... >80%
Surface Irregularity..... λ/4 per 25mm at 632.8nm
Surface Quality ..... 80-50 scratch and dig
Bevel.....Protective Bevel

P/N	f	Φ	R_1	t_c	t_e	f_b
31301	10.0	10.0	7.71	3.8	2.0	7.9
31302	20.0	10.0	15.42	2.8	2.0	18.4
31303	25.0	10.0	19.28	2.7	2.0	23.5

●Demension unit:mm

●Other sizes and coatings are available upon request.

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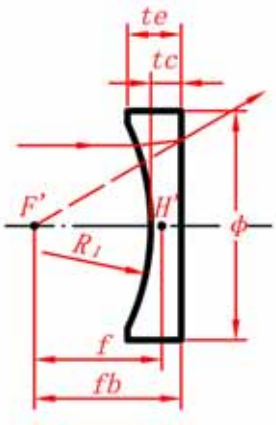
Sapphire Plano-Concave Lens



Specifications:

Material ..... Optical Grade Sapphire Crystal
Design Wavelength 546.1nm
Design Index ..... 1.771@546.1nm
Diameter Tolerance ..... +0.0, -0.15mm
Paraxial Focal Length ..... ±2%
Centration ..... <3 arc minutes
Clear Aperture ..... >80%
Surface Irregularity..... λ/4 per 25mm at 632.8nm
Surface Quality ..... 80-50 scratch and dig
Bevel.....Protective Bevel

P/N	f	Φ	R_1	t_c	t_e	f_b
31401	-25.0	10.0	-19.28	2.0	2.7	23.9
31402	-50.0	20.0	-38.55	2.0	3.3	48.9
31403	-100.0	20.0	-77.10	2.0	2.7	98.9

●Demension unit:mm

●Other sizes and coatings are available upon request.

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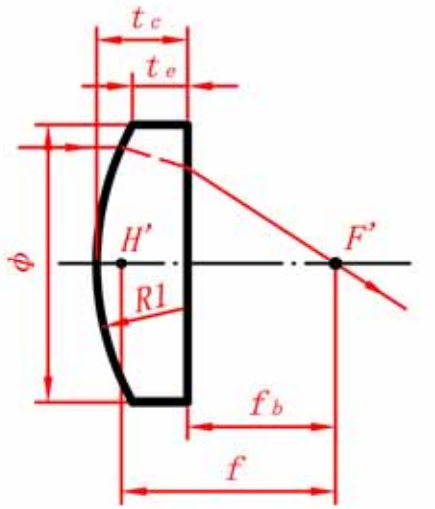
CaF_2 Plano-Convex Lens



Specifications:

Material ..... Optical Grade CaF2 Single Crystal
Design Wavelength 1.5μm
Design Index ..... n=1.425
Surface Quality ..... 80-50 scratch and dig
Paraxial Focal Length ..... ±2%
Diameter Tolerance ..... +0.0, -0.15mm
Centration ..... 3 arc minutes
Clear Aperture ..... >80%
Surface Irregularity..... λ/4 per 25mm at 632.8nm
Bevel.....Protective Bevel

P/N	f	Φ	R_1	t_c	t_e	f_b
31501	50.0	25.4	21.25	6.2	2.0	45.6
31502	100.0	25.4	42.50	3.9	2.0	97.3
31503	150.0	25.4	63.75	3.3	2.0	147.7
31504	200.0	25.4	85.00	3.0	2.0	197.9
31505	300.0	25.4	127.50	2.6	2.0	298.2
31506	500.0	25.4	212.50	2.4	2.0	498.3
31507	1000.0	25.4	425.0	2.2	2.0	998.5

●Demension unit:mm

●Other sizes and coatings are available upon request.

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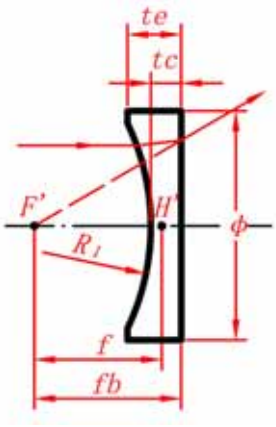
CaF_2 Plano-Concave Lens



Specifications:

Material ..... Optical Grade CaF2 Single Crystal
Design Wavelength 1.5μm
Design Index ..... n=1.425
Surface Quality ..... 80-50 scratch and dig
Paraxial Focal Length ..... ±2%
Diameter Tolerance ..... +0.0, -0.15mm
Centration ..... 3 arc minutes
Clear Aperture ..... >80%
Surface Irregularity..... λ/4 per 25mm at 632.8nm
Bevel.....Protective Bevel

P/N	f	Φ	R_1	t_c	t_e	f_b
31601	-100.0	25.4	42.50	2.0	3.9	-101.4
31602	-200.0	25.4	85.00	2.0	3.0	-201.4
31603	-500.0	25.4	212.5	2.0	2.4	-501.4
31604	-1000.0	25.4	425.0	2.0	2.2	-1001.4

●Demension unit:mm

●Other sizes and coatings are available upon request.

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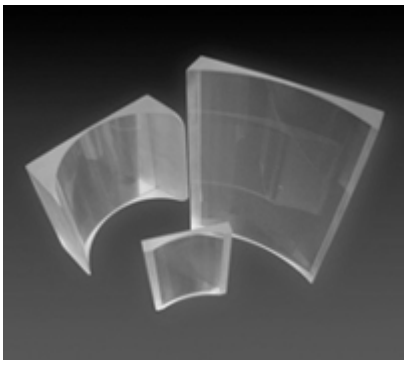
Cylindrical Lenses



A cylindrical lens is a lens which focuses light which passes through onto a line instead of onto a point,as a spherical lens would.The curved face or faces of a cylindrical lens are sections of a cylinder,and focus the image passing through it onto a line parallel to the intersection of the surface of the lens and a plane tangent to it.The lens compresses the image in the direction perpendicular to this line,and leaves it unaltered in the direction parallel to it (in the tangent plane).Lenses with cylindrical characteristics can be used to correct ocular astigmatism.

- Standard BK7 Plano-Convex Cylindrical Lens
- Standard BK7 Plano-Concave Cylindrical Lens
- Precision BK7 Plano-Convex Cylindrical Lens
- Precision BK7 Plano-Concave Cylindrical Lens
- Precision Fused Silica Plano-Convex Cylindrical Lens
- Precision Fused Silica Plano-Concave Cylindrical Lens

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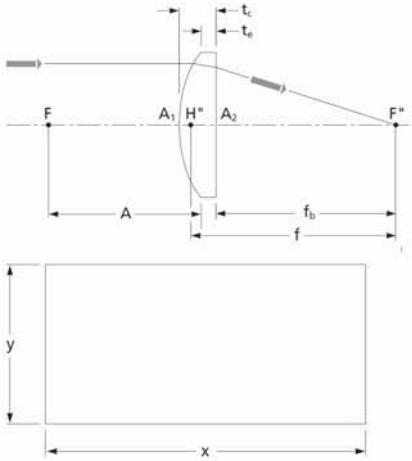
Standard BK7 Plano-Convex Cylindrical Lens



Plano-Convex cylindrical lenses have a positive focal length, which makes them ideal for collecting and focusing light for many imaging applications.

Specifications:

Material.....BK7 Grade A

Length.....X±0.5mm

Width.....Y±0.5mm

Thickness Tolerance.....±0.5mm

Design Wavelength(λ0).....587.6nm

Design Index(n0).....1.5168 8±0.001

Centration.....<3 arc min.

Clear Aperture.....>90%

Surface Quality.....60-40

Paraxial Focal Length.....f±2%

P/N	f	x	y	t_c	t_e	$A_2H"$	f_b	A
40101	6.35	25.00	6.00	3.50	1.60	-2.30	4.00	8.30
40102	12.70	25.00	12.00	5.00	1.10	-3.30	9.40	16.60
40103	25.40	60.00	22.00	7.00	1.00	-4.60	20.80	31.40
40104	40.00	60.00	15.00	2.70	1.30	-1.80	38.20	41.40
40105	60.00	60.00	20.00	3.00	1.30	-2.00	58.00	61.70
40106	80.00	60.00	30.00	4.00	1.20	-2.60	77.40	82.80
40107	100.00	60.00	50.00	8.00	1.60	-5.30	94.70	106.40

●Demension unit:mm

●Other sizes and coatings are available upon request.

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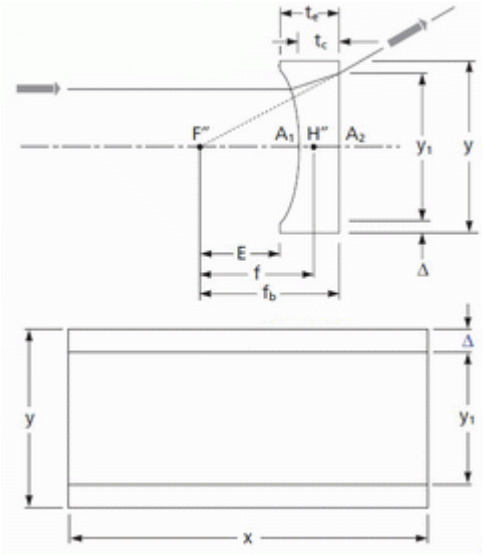
Standard BK7 Plano-Concave Cylindrical Lens



Plano-Concave cylindrical lenses have a negative focal length and are used for image reduction or to spread light.

Specifications:

Material.....BK7 Grade A

Length.....X±0.5mm

Width.....Y±0.5mm

Thickness Tolerance.....±0.5mm

Design Wavelength(λ0).....587.6nm

Design Index(n0).....1.5168 8±0.001

Centration.....<3 arc min.

Clear Aperture.....>90%

Surface Quality.....60-40

Paraxial Focal Length.....f±2%

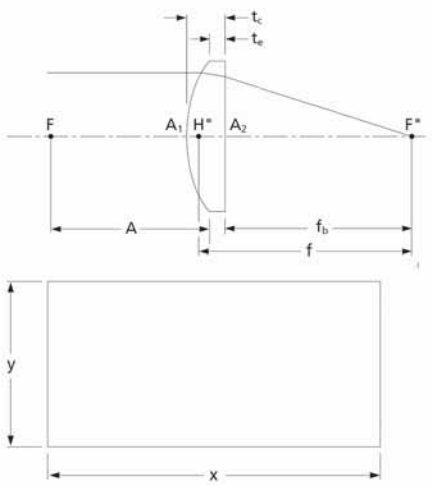
P/N	f	x	y	y_1	t_c	t_e	A_2H''	f_b	E
40201	-6.35	25.00	7.00	6.00	3.10	5.10	-2.00	-8.40	3.34
40202	-12.70	25.00	13.00	12.00	3.20	7.10	-2.10	-14.80	7.71
40203	-25.40	60.00	16.00	15.00	3.70	6.00	-2.40	-27.80	21.79
40204	-40.00	60.00	16.00	15.00	4.60	6.00	-3.00	-43.00	37.02
40205	-60.00	60.00	21.00	20.00	4.40	6.10	-2.90	-62.90	56.84
40206	-80.00	60.00	31.00	30.00	3.20	6.00	-2.10	-82.10	76.09
40207	-100.00	60.00	51.00	50.00	3.00	9.40	-2.00	-102.00	92.54

●Demension unit:mm

●Other sizes and coatings are available upon request.

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

Precision BK7 Plano-Convex Cylindrical Lens



Specifications:

Material.....BK7 Grade A

Length.....X±0.1mm

Width.....Y±0.1mm

Thickness Tolerance.....±0.2mm

Design Wavelength(λ0).....587.6nm

Design Index(n0).....1.5168 8±0.001

Surface Accuracy.....λ/2 in the y direction and λ/4 per centimeter in the x-direction, at 632.8nm

Centration.....<3 arc min.

Clear Aperture.....>90%

Surface Quality.....60-40

Paraxial Focal Length.....f±2%

P/N	f	x	y	t_c	t_e	A_2H''	f_b	A	Xap	Yap
40301	4	12.5	3.2	1.8	1	41.2	2.8	4.8	11	2.75
40302	8	12.5	7	3.8	1.9	42.5	5.5	9.9	11	5.5
40303	10	12.5	9	3.8	1.2	42.5	7.5	12.6	11	7.5
40304	6.35	25	6	2.95	1	42	4.4	8.3	23	5
40305	12.7	25	11	4	1	42.6	10.1	15.7	23	9
40306	19	25	16	5.1	1	43.4	15.6	23.1	23	13
40307	22.2	20	12.5	5.75	3.9	43.8	18.4	24.1	11	19
40308	25.4	60	22	7	1	44.6	20.8	31.4	57	19
40309	38.1	60	26	6.9	2	44.6	33.5	43	57	23

P/N	f	x	y	t_c	t_e	A_2H''	f_b	A	Xap	Yap
40310	40	60	15	5.75	4.3	43.8	36.2	41.4	57	12
40311	50	60	26	5.5	2	43.6	46.4	53.5	57	23
40312	60	60	20	5.75	4.1	43.8	56.2	61.7	57	17
40313	76.2	60	26	4.2	2	42.8	73.4	78.4	57	23
40314	80	60	30	5.75	2.9	43.8	76.2	82.8	57	27
40315	100	60	50	8.89	2.4	45.9	94.1	106.4	57	46
40316	150	60	50	5.75	1.6	43.8	146.2	154.1	57	46
40317	200	60	50	6.35	3.3	44.2	195.8	203.1	57	46
40318	250	60	50	5.4	3	43.6	252.4	252.4	57	46
40319	300	60	50	6	4	44	296	302	57	46

●Demension unit:mm

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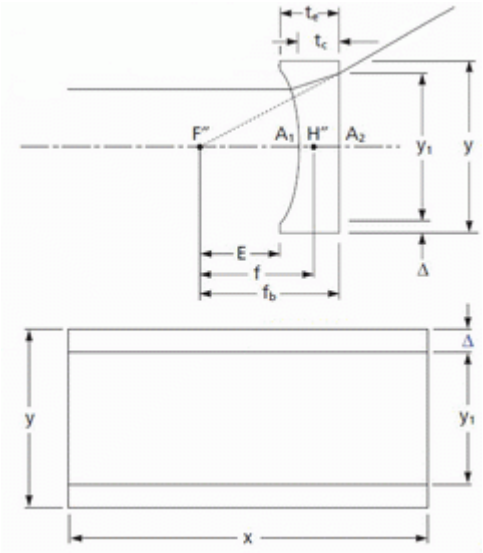
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

Precision BK7 Plano-Concave Cylindrical Lens



Specifications:
Material.....BK7 Grade A
Length.....X±0.1mm
Width.....Y±0.1mm
Thickness Tolerance.....±0.2mm
Design Wavelength(λ0).....587.6nm
Design Index(n0).....1.5168 8±0.001
Surface Accuracy.....λ/2 in the y direction and λ/4 per centimeter in the x-direction, at 632.8nm
Centration.....<3 arc min.
Clear Aperture.....>90%
Surface Quality.....60-40
Paraxial Focal Length.....f±2%

P/N	f	x	y	t_c	t_e	A_2H''	f_b	E	Xap	Yap
40401	-6.35	25	6	5	6.2	-3.3	-9.7	3.49	23	4
40402	-12.7	25	11	5	7.3	-3.3	-16	8.68	23	9
40403	-19	25	16	5	8.5	-3.3	-22.3	13.81	23	13.5
40404	-25.4	60	16	5	7.4	-3.3	-28.7	21.34	57	13
40405	-38.1	60	26	5	9.5	-3.3	-41.4	31.92	57	23
40406	-40	60	26	5	9.2	-3.3	-43.3	34.09	57	23
40407	-50	60	26	5	8.2	-3.3	-53.3	45.07	57	23
40408	-60	60	26	5	7.6	-3.3	-63.3	55.67	57	23
40409	-76.2	60	26	5	7	-3.3	-79.5	72.46	57	23

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P/N	f	x	y	t_c	t_e	A_2H''	f_b	E	Xap	Yap
40410	-80	60	26	5	6.9	-3.3	-83.3	76.36	57	23
40411	-100	60	26	5	6.5	-3.3	-103.3	96.76	57	23
40412	-150	60	26	5	6	-3.3	-153.3	147.28	57	23
40413	-200	60	26	5	5.8	-3.3	-203.3	197.54	57	23
40414	-250	60	26	5	5.6	-3.3	-253.3	247.69	57	23
40415	-300	60	26	5	5.5	-3.3	-303.3	297.79	57	23

●Demension unit:mm

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Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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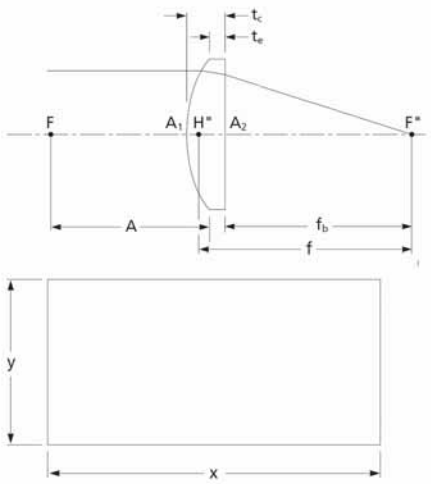
Precision Fused Silica Plano-Convex Cylindrical Lens



Although precision fused-silica plano-convex cylindrical lenses are suitable for the same applications as precision BK7 cylindrical lenses, they have several distinct advantages:

1)They can be used over a larger spectral range (180–2100 nm) than BK7.

2)They have low dispersion with a low thermal-expansion coefficient and offer better resistance to thermal shock and scratches.

3)They have excellent transmission in the deep ultraviolet range.

Specifications:

Material.....UV Fused Silica
Length.....X±0.1mm
Width.....Y±0.1mm
Thickness Tolerance.....±0.2mm
Design Wavelength(λ0).....587.6nm
Surface Accuracy.....λ/2 in the y direction and λ/4 per centimeter in the x-direction, at 632.8nm
Centration.....<3 arc min.
Clear Aperture.....>90%
Surface Quality.....60-40
Paraxial Focal Length.....f±2%

P/N	f	x	y	t_c	t_e	A_2H''	f_b	A	Xap	Yap
40501	4	12.5	3.2	1.8	0.9	41.2	2.8	4.9	11	2.75
40502	8	12.5	6.5	3.8	1.9	42.6	5.4	10	11	5
40503	10	12.5	8	3.8	1.5	42.6	7.4	12.3	11	6.5
40504	12.7	25	10	3.84	1	42.63	10	15.5	23	8
40505	19	25	15	5.28	1	43.62	15.4	23.3	23	12
40506	25	60	15	4.79	2	43.29	21.7	27.8	57	12

P/N	f	x	y	t_c	t_e	A_2H''	f_b	A	Xap	Yap
40507	40	60	26	7.4	2	45.08	34.9	45.4	57	23
40508	50	60	26	6.04	2	44.14	45.9	54	57	23
40509	76.2	60	26	4.51	2	43.09	73.1	78.7	57	23
40510	100	60	26	3.88	2	42.66	97.3	101.9	57	23
40511	200	60	26	3.93	3	42.69	197.3	200	57	23
40512	300	60	26	3.62	3	42.48	297.5	300.6	57	23

●Demension unit:mm

●Other sizes and coatings are available upon request.

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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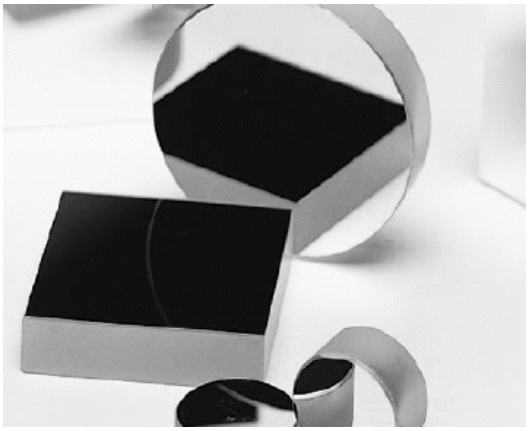
Mirrors



Metallic coatings are very broadband and relatively insensitive to incidence angle. The most commonly used coatings, they offer good performance at an economical price.Dielectric coatings are multilayer coatings that offer excellent performance over a specific wavelength range and are relatively insensitive to small angle changes. As a rule, dielectric coatings offer superior durability and damage resistance.

- Dielectric Mirror
- Protected Aluminum Mirror
- Enhanced Aluminum Mirror
- Protected Silver Mirror
- Protected Gold Mirror

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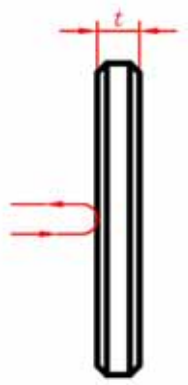
http://www.eastoptics.com

Dielectric Mirror



Specifications:

Material.....BK7 grade A optical glass
Dimension Tolerance.....±0.2mm
Clear Aperture.....>85%
Parallelism.....< 30 arc seconds
Surface Quality.....20-10 scratch and dig
Flatness.....λ/10 per 25mm @632.8nm
Coating.....R > 98% on S1, R=(Rs+Rp)/2
Bevel.....0.25mm x 45°

P/N	Φ	t	Incident Angle	Wavelenth
50101	25.40	6.00	0°	632.8nm
50102	25.40	6.00	45°	632.8nm
50103	25.40	6.00	0°	1064nm
50104	25.40	6.00	45°	1064nm

●Demension unit:mm

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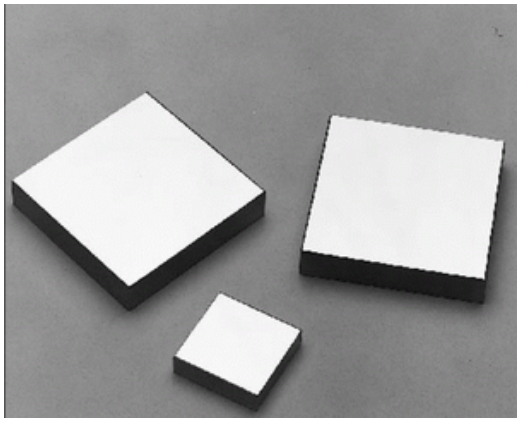
Protected Aluminum Mirror



Material.....BK7,Fused Silica
Dimension Tolerance.....±0.20 mm
Thickness Tolerance.....±0.20 mm
Clear Aperture.....90% of edge dimension
Parallelism.....<3 arc minutes
Surface Quality.....60–40 scratch and dig
Coating.....Protected aluminum,Ravg≥87%@400-800nm

P/N	Size	Flatness	Substrate
50201	10×10×1	3λ per 25mm	BK7
50202	15×15×1	3λ per 25mm	BK7
50203	20×20×1	3λ per 25mm	BK7
50204	25×25×1	3λ per 25mm	BK7
50205	50×50×3	3λ per 25mm	BK7
50206	75×75×3	3λ per 25mm	BK7
50207	100×100×3	3λ per 25mm	BK7
50208	Φ12.7×1	3λ per 25mm	BK7
50209	Φ25.4×1	3λ per 25mm	BK7
50210	Φ38×1	3λ per 25mm	BK7
50211	Φ50×3	3λ per 25mm	BK7
50212	Φ75×3	3λ per 25mm	BK7
50213	Φ100×3	3λ per 25mm	BK7
50214	10×10×5	λ/4	BK7
50215	15×15×5	λ/4	BK7
50216	20×20×5	λ/4	BK7
50217	25×25×5	λ/4	BK7

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Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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P/N	Size	Flatness	Substrate
50218	50×50×6	λ/4	BK7
50219	75×75×6	λ/4	BK7
50220	100×100×10	λ/4	BK7
50221	Φ12.7×5	λ/4	BK7
50222	Φ25.4×5	λ/4	BK7
50223	Φ38×6	λ/4	BK7
50224	Φ50×6	λ/4	BK7
50225	Φ75×6	λ/4	BK7
50226	Φ100×10	λ/4	BK7
50227	10×10×5	λ/10	Fused Silica
50228	15×15×5	λ/10	Fused Silica
50229	20×20×5	λ/10	Fused Silica
50230	25×25×5	λ/10	Fused Silica
50231	50×50×6	λ/10	Fused Silica
50232	75×75×6	λ/10	Fused Silica
50233	100×100×10	λ/10	Fused Silica
50234	Φ12.7×5	λ/10	Fused Silica
50235	Φ25.4×5	λ/10	Fused Silica
50236	Φ38×6	λ/10	Fused Silica
50237	Φ50×6	λ/10	Fused Silica
50238	Φ75×6	λ/10	Fused Silica
50239	Φ100×10	λ/10	Fused Silica
50240	10×10×6	λ/20	Fused Silica
50241	15×15×6	λ/20	Fused Silica
50242	20×20×6	λ/20	Fused Silica
50243	25×25×6	λ/20	Fused Silica
50244	50×50×10	λ/20	Fused Silica
50245	Φ12.7×6	λ/20	Fused Silica
50246	Φ25.4×6	λ/20	Fused Silica
50247	Φ38×10	λ/20	Fused Silica
50248	Φ50×10	λ/20	Fused Silica

●Demension unit:mm

●Other sizes and coatings are available upon request.

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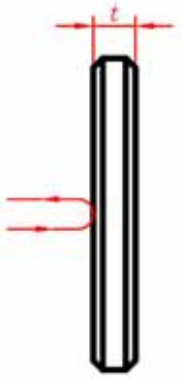
Enhanced Aluminum Mirror



Specifications:

Material.....see the table

Length or width tolerance.....±0.1mm

Diameter tolerance.....+0/-0.2mm

Thickness tolerance.....±0.20mm

Clear Aperture.....>90%

Parallelism.....<3 arc minutes

Surface Quality.....60–40 scratch and dig

Coating.....Enhanced aluminum,Ravg≥93% (450 - 750 nm)

P/N	Size	Flatness	Substrate
50301	10×10×1	3λ per 25mm	BK7
50302	15×15×1	3λ per 25mm	BK7
50303	20×20×1	3λ per 25mm	BK7
50304	25×25×1	3λ per 25mm	BK7
50305	50×50×3	3λ per 25mm	BK7
50306	75×75×3	3λ per 25mm	BK7
50307	100×100×3	3λ per 25mm	BK7
50308	Φ12.7×1	3λ per 25mm	BK7
50309	Φ25.4×1	3λ per 25mm	BK7
50310	Φ38×1	3λ per 25mm	BK7
50311	Φ50×3	3λ per 25mm	BK7
50312	Φ75×3	3λ per 25mm	BK7
50313	Φ100×3	3λ per 25mm	BK7
50314	10×10×5	λ/4	BK7
50315	15×15×5	λ/4	BK7
50316	20×20×5	λ/4	BK7
50317	25×25×5	λ/4	BK7

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Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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P/N	Size	Flatness	Substrate
50318	50×50×6	λ/4	BK7
50319	75×75×6	λ/4	BK7
50320	100×100×10	λ/4	BK7
50321	Φ12.7×5	λ/4	BK7
50322	Φ25.4×5	λ/4	BK7
50323	Φ38×6	λ/4	BK7
50324	Φ50×6	λ/4	BK7
50325	Φ75×6	λ/4	BK7
50326	Φ100×10	λ/4	BK7
50327	10×10×5	λ/10	Fused Silica
50328	15×15×5	λ/10	Fused Silica
50329	20×20×5	λ/10	Fused Silica
50330	25×25×5	λ/10	Fused Silica
50331	50×50×6	λ/10	Fused Silica
50332	75×75×6	λ/10	Fused Silica
50333	100×100×10	λ/10	Fused Silica
50334	Φ12.7×5	λ/10	Fused Silica
50335	Φ25.4×5	λ/10	Fused Silica
50336	Φ38×6	λ/10	Fused Silica
50337	Φ50×6	λ/10	Fused Silica
50338	Φ75×6	λ/10	Fused Silica
50339	Φ100×10	λ/10	Fused Silica
50340	10×10×6	λ/20	Fused Silica
50341	15×15×6	λ/20	Fused Silica
50342	20×20×6	λ/20	Fused Silica
50343	25×25×6	λ/20	Fused Silica
50344	50×50×10	λ/20	Fused Silica
50345	Φ12.7×6	λ/20	Fused Silica
50346	Φ25.4×6	λ/20	Fused Silica
50347	Φ38×10	λ/20	Fused Silica
50348	Φ50×10	λ/20	Fused Silica

●Demension unit:mm

●Other sizes and coatings are available upon request.

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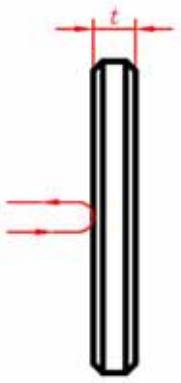
Protected Silver Mirror



Specifications:

Material.....See the table

Diameter.....+0/-0.10mm

Thickness.....±0.20mm

Clear Aperture.....80% of diameter

Parallelism.....<3 arc minutes

Surface Quality.....60–40 scratch and dig

Coating.....Protected silver,Ravg≥95%(400nm-20mm)

P/N	Size	Flatness	Substrate
50401	Φ12.7×6	λ/4	BK7
50402	Φ25.4×6	λ/4	BK7
50403	Φ12.7×6	λ/10	Fused Silica
50404	Φ25.4×6	λ/10	Fused Silica

●Demension unit:mm

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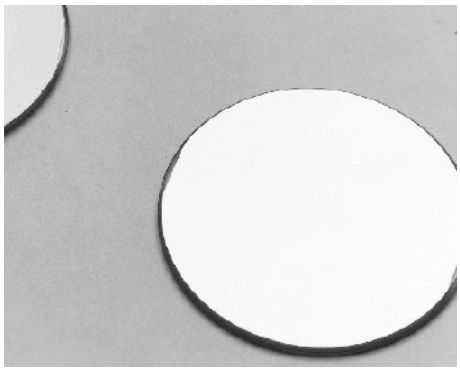
Protected Gold Mirror



Specifications:

Material.....See table
Diameter.....+0/-0.10mm
Thickness.....±0.20mm
Clear Aperture.....90% of diameter
Parallelism.....<3 arc minutes
Surface Quality.....60–40 scratch and dig
Coating.....Protected or bare gold
.....Ravg≥99% [700nm–20mm(bare)]
.....Ravg≥98% [650 nm–16 mm (protected)]

P/N	Size	Flatness	Substrate
50501	Φ12.7×6	λ/4	BK7
50502	Φ25.4×6	λ/4	BK7
50503	Φ12.7×6	λ/10	Fused Silica
50504	Φ25.4×6	λ/10	Fused Silica

●Demension unit:mm

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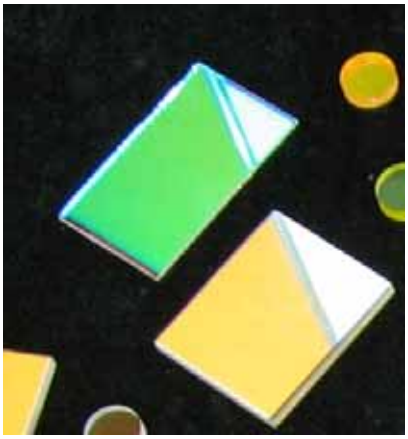
Beamsplitters



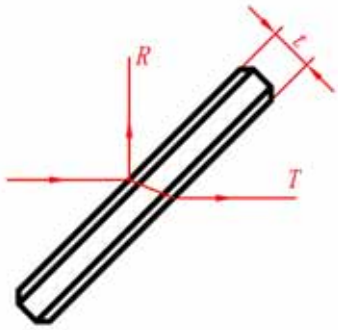
Beamsplitters are used to split or combine beam of light. The most common types provided by Eastoptics are: plates and cubes. Plates are used for most laser applications as they exhibit low absorption. Cubes are a convenient, proteced form for low power applications. The performance of beamsplitters are mainly dependent on the coating specifications. For the coating curves of each types of beamsplitters, please refer to “Coatings” chapter for more information.

In selecting beamsplitters, the type, coating, transmission range and damage threshold shold be considered.

- Narrow Band Beamsplitter Plate
- Broadband Beamsplitter Plate
- Narrow Band Beamsplitter Cube
- Broadband Beamsplitter Cube

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

Narrow Band Beamsplitter Plate



A plate type (mirror-type) beamsplitter is an optical window with semi-transparent mirrored coating to break a beam into two or more separate beams. A beamsplitter will reflect a portion of the incident energy (see reflection %), absorb a relatively small portion, and transmit the remaining energy (see transmission %). Beamsplitter plates have very neutral color characteristics and are often referred to as beam-splitters plate.

Specifications:
Material.....Float white glass
Dimension Tolerance.....±0.2mm
Thinkness Tolerance.....±0.2mm
Clear Aperture.....> 85%
Parallelism.....< 1 arc minute
Surface Quality.....60-40 scratch and dig
Flatness.....λ/4 per 25mm @632.8nm
T/R.....50/50 5%, for natrual light
.....T=(Ts+Tp)/2, R=(Rs+Rp)/2
Coatings.....(incidence angle:45°)
.....S1:Single wavelength partial reflectance
.....S2 "V" AR-coatings
Wavelenths:532nm,632.8nm,635nm,670,780nm,850nm,980nm,1064nm,1300nm,1550nm

P/N	Size	λ
60101	10×10×3	532nm
60102	10×10×3	632.8nm
60103	10×10×3	650nm
60104	10×10×3	670nm
60105	10×10×3	780nm

●Demension unit:mm
●Other sizes and coatings are available upon request.

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P/N	Size	λ
60106	10×10×3	850nm
60107	10×10×3	980nm
60108	10×10×3	1064nm
60109	10×10×3	1300nm
60110	10×10×3	1550nm
60111	12.7×12.7×3	532nm
60112	12.7×12.7×3	632.8nm
60113	12.7×12.7×3	650nm
60114	12.7×12.7×3	670nm
60115	12.7×12.7×3	780nm
60116	12.7×12.7×3	850nm
60117	12.7×12.7×3	980nm
60118	12.7×12.7×3	1064nm
60119	12.7×12.7×3	1300nm
60120	12.7×12.7×3	1550nm
60121	25.4×25.4×3	532nm
60122	25.4×25.4×3	632.8nm
60123	25.4×25.4×3	650nm
60124	25.4×25.4×3	670nm
60125	25.4×25.4×3	780nm
60126	25.4×25.4×3	850nm
60127	25.4×25.4×3	980nm
60128	25.4×25.4×3	1064nm
60129	25.4×25.4×3	1300nm
60130	25.4×25.4×3	1550nm
60131	Φ10×3	532nm
60132	Φ10×3	632.8nm
60133	Φ10×3	650nm
60134	Φ10×3	670nm
60135	Φ10×3	780nm
60136	Φ10×3	850nm
60137	Φ10×3	980nm
60138	Φ10×3	1064nm
60139	Φ10×3	1300nm
60140	Φ10×3	1550nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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P/N	Size	λ
60141	Φ12.7×3	532nm
60142	Φ12.7×3	632.8nm
60143	Φ12.7×3	650nm
60144	Φ12.7×3	670nm
60145	Φ12.7×3	780nm
60146	Φ12.7×3	850nm
60147	Φ12.7×3	980nm
60148	Φ12.7×3	1064nm
60149	Φ12.7×3	1300nm
60150	Φ12.7×3	1550nm
60151	Φ25.4×3	532nm
60152	Φ25.4×3	632.8nm
60153	Φ25.4×3	650nm
60154	Φ25.4×3	670nm
60155	Φ25.4×3	780nm
60156	Φ25.4×3	850nm
60157	Φ25.4×3	980nm
60158	Φ25.4×3	1064nm
60159	Φ25.4×3	1300nm
60160	Φ25.4×3	1550nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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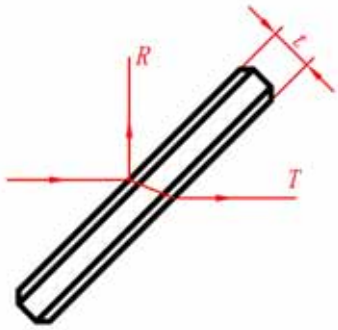
Broadband Beamsplitter Plate



Specifications:
Material ..... BK7 grade A, optical glass
Dimension Tolerance ..... ±0.2mm
Thickness Tolerance ..... ±0.2mm
Flatness ..... λ/4 @ 632.8 nm per 25mm
Surface Quality ..... 60/40 scratch and dig
Parallelism ..... 1 arc minute
T/R ..... 50/50±5%, for natrual light
..... T=(Ts+Tp)/2, R=(Rs+Rp)/2
Coatings ..... (Incidence angle: 45 degree)
S1: Broadband partial reflectance S2: BBAR-coatings
Wavelenth:450-650,650-900,900-1200,1200-1550

P/N	Size	λ
60201	10×10×3	450nm-650nm
60202	10×10×3	650nm-900nm
60203	10×10×3	900nm-1200nm
60204	10×10×3	1200nm-1500nm
60205	12.7×12.7×3	450nm-650nm
60206	12.7×12.7×3	650nm-900nm
60207	12.7×12.7×3	900nm-1200nm
60208	12.7×12.7×3	1200nm-1500nm
60209	25.4×25.4×3	450nm-650nm
60210	25.4×25.4×3	650nm-900nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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P/N	Size	λ
60211	25.4×25.4×3	900nm-1200nm
60212	25.4×25.4×3	1200nm-1500nm
60213	Φ10×3	450nm-650nm
60214	Φ10×3	650nm-900nm
60215	Φ10×3	900nm-1200nm
60216	Φ10×3	1200nm-1500nm
60217	Φ12.7×3	450nm-650nm
60218	Φ12.7×3	650nm-900nm
60219	Φ12.7×3	900nm-1200nm
60220	Φ12.7×3	1200nm-1500nm
60221	Φ25.4×3	450nm-650nm
60222	Φ25.4×3	650nm-900nm
60223	Φ25.4×3	900nm-1200nm
60224	Φ25.4×3	1200nm-1500nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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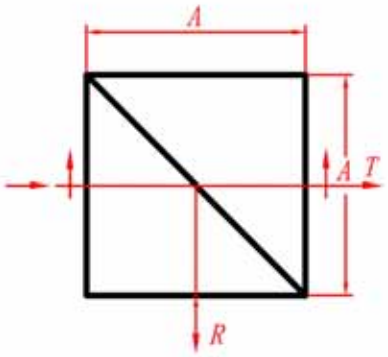
Narrow Band Beamsplitter Cube



Beamsplitter Cube is a more sophisticated type consisting of two right- angle prisms cemented together at their hypotenuse faces. The cemented face of one prism is coated. Before cementing, with a metallic or dielectric layer having the desired reflecting properties, both in the percentage of reflection and the desired color. The absorption loss to the coating is minimal and transmission and reflection approach 50%.

Specifications:
Material .....BK7 grade A, optical glass
Dimension tolerance .....±0.2mm
Flatness ..... λ/4 @ 632.8 nm
Surface quality ..... 60/40 scratch and dig
T/R .....50/50 ± 5%, for natrual light,T=(Ts+Tp)/2, R=(Rs+Rp)/2
Beam Deviation .....<3 arc minutes
Coatings……Single wavelength partial reflectance: on hypotenuse face,
"V" AR-coatings on all input and output face
Wavelength:532,632.8,635,670,780,850,980,1064,1300,1550

P/N	Size	λ
60301	10×10×10	532nm
60302	10×10×10	632.8nm
60303	10×10×10	650nm
60304	10×10×10	670nm
60305	10×10×10	780nm
60306	10×10×10	850nm
60307	10×10×10	980nm
60308	10×10×10	1064nm
60309	10×10×10	1300nm
60310	10×10×10	1550nm

P/N	Size	λ
60311	15×15×15	532nm
60312	15×15×15	632.8nm
60313	15×15×15	650nm
60314	15×15×15	670nm
60315	15×15×15	780nm
60316	15×15×15	850nm
60317	15×15×15	980nm
60318	15×15×15	1064nm
60319	15×15×15	1300nm
60320	15×15×15	1550nm
60321	20×20×20	532nm
60322	20×20×20	632.8nm
60323	20×20×20	650nm
60324	20×20×20	670nm
60325	20×20×20	780nm
60326	20×20×20	850nm
60327	20×20×20	980nm
60328	20×20×20	1064nm
60329	20×20×20	1300nm
60330	20×20×20	1550nm
60331	25.4×25.4×25.4	532nm
60332	25.4×25.4×25.4	632.8nm
60333	25.4×25.4×25.4	650nm
60334	25.4×25.4×25.4	670nm
60335	25.4×25.4×25.4	780nm
60336	25.4×25.4×25.4	850nm
60337	25.4×25.4×25.4	980nm
60338	25.4×25.4×25.4	1064nm
60339	25.4×25.4×25.4	1300nm
60340	25.4×25.4×25.4	1550nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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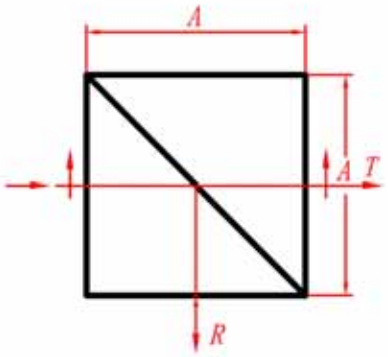
Broadband Beamsplitter Cube



Specifications:
Material ..... BK7 grade A, optical glass
Dimension Tolerance ..... ±0.2mm
Flatness ..... λ/4 @ 632.8 nm
Surface Quality ..... 60/40 scratch and dig
T/R ..... 50/50 ± 5%, for natrual light
..... T=(Ts+Tp)/2, R=(Rs+Rp)/2
Beam Deviation ..... <3 arc minutes
Coating:..... Broadband partial reflectance coating on hypotenuse face,
BBAR coatings: on all input and output face
Wavelength(nm):450-650,650-900,900-1200,1200-1550

P/N	Size	λ
60401	10×10×10	450nm-650nm
60402	10×10×10	650nm-900nm
60403	10×10×10	900nm-1200nm
60404	10×10×10	1200nm-1500nm
60405	15×15×15	450nm-650nm
60406	15×15×15	650nm-900nm
60407	15×15×15	900nm-1200nm
60408	15×15×15	1200nm-1500nm
60409	20×20×20	450nm-650nm
60410	20×20×20	650nm-900nm

●Demension unit:mm
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P/N	Size	λ
60411	20×20×20	900nm-1200nm
60412	20×20×20	1200nm-1500nm
60413	25.4×25.4×25.4	450nm-650nm
60414	25.4×25.4×25.4	650nm-900nm
60415	25.4×25.4×25.4	900nm-1200nm
60416	25.4×25.4×25.4	1200nm-1500nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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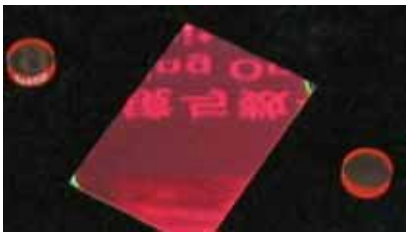
Filters



- Laser Line Filter
- Neutral Density Filter

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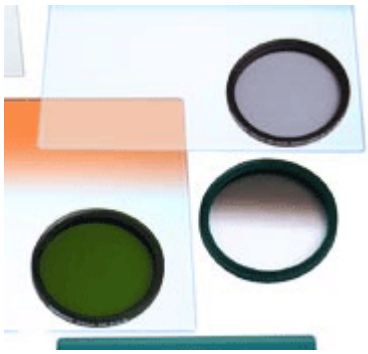
Laser Line Filter



Specifications:
Substrate Material:BK7 Grade A
Central Wavelength Tolerance:+/-20% of Nominal Bandwidth
Bandwidth Tolerance:+/-20% Max
Blocking:<0.01%
Diameter tolerance:+0/-0.2mm
Thickness tolerance:±0.1mm
Clear Aperture:>90%
Operation temperature:-50°C to 80°C

P/N	Φ	T	Centeral Wavelength	Bandwidth	Peak Transmittance
70101	12.70	2.00	532nm	3nm	50%
70102	12.70	2.00	632.8nm	3nm	50%
70103	12.70	2.00	650nm	10nm	50%
70104	12.70	2.00	780nm	11nm	45%
70105	12.70	2.00	830nm	12nm	45%
70106	12.70	2.00	850nm	12nm	45%
70107	12.70	2.00	1064nm	10nm	45%
70108	12.70	2.00	1310nm	12nm	45%
70109	12.70	2.00	1550nm	10nm	45%
70110	25.40	3.00	532nm	10nm	50%

●Demension unit:mm

●Other sizes and coatings are available upon request.

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P/N	Φ	T	Centeral Wavelength	Bandwidth	Peak Transmittance
70111	25.40	3.00	632.8nm	10nm	50%
70112	25.40	3.00	650nm	10nm	50%
70113	25.40	3.00	780nm	11nm	45%
70114	25.40	3.00	830nm	12nm	45%
70115	25.40	3.00	850nm	12nm	45%
70116	25.40	3.00	1064nm	10nm	45%
70117	25.40	3.00	1310nm	12nm	45%
70118	25.40	3.00	1550nm	10nm	45%

●Demension unit:mm

●Other sizes and coatings are available upon request.

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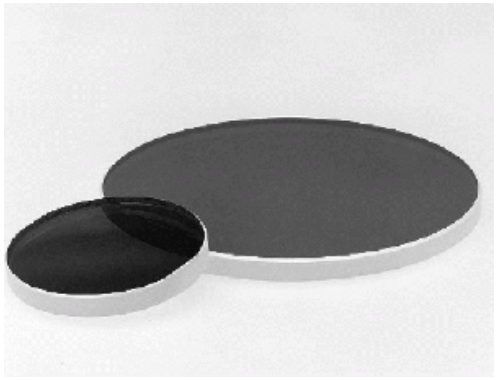
Neutral Density Filter



Neutral Density Filters,Also known as a gray filter. A light filter that decreases the intensity of the light without altering the relative spectral distribution of the energy.

Neutral Density filters appear gray in color and reduce the amount of light reaching the CCD camera. Since the transmission value only varies over a small percent in the visible, there is no effect on color balance. Instead of just stopping down the lens aperture due to high light levels, ND filters allow for wider apertures which can be used to decrease the depth of field. This allows the important information to be separated from the background. Compared to polarizing filters, ND filters are ideal for overall light reduction in cases of extreme light intensity. By stacking filters, it is possible to achieve other Optical Density (OD) values. All mounted filters can be threaded together with identical male and female threads on each mount. Optical Density exhibits an additive relationship; for example, stacking filters with OD values of 0.6 and 0.9 yields a resultant density of 1.5. The optical density is related to the transmission by the following equation: $T = 10^{-D} \times 100$ = percent transmission.

Specifications:
Substrate Material:BK7 grade A
Dimension Tolerance:±0.2 mm
Thickness: 2±0.2 mm
Parallelism:3 arc minutes
Surface Quality: 80-50 scratch and dig
Surface Flatness: 2λper 25-mm area
Deviation Allowed from Catalog Nominal Density at 550 nm:
±0.02 density for densities of less than 0.5,±5% of density value at or above a density of 0.5
Accuracy of Spectrophotometer Curves between 200 nm and 700 nm:±1% of full scale
Clear Aperture (CA):>85%
Coating:Vacuum-deposited metallic alloy

P/N	Φ	T	OD@550nm	Nominal Transmittance
70201	12.70	2.00	0.04	91.20%
70202	12.70	2.00	0.10	79.43%
70203	12.70	2.00	0.20	63.10%
70204	12.70	2.00	0.30	50.12%
70205	12.70	2.00	0.40	39.81%
70206	12.70	2.00	0.50	31.62%
70207	12.70	2.00	0.60	25.12%
70208	12.70	2.00	0.70	19.95%
70209	12.70	2.00	0.80	15.85%
70210	12.70	2.00	0.90	12.59%
70211	12.70	2.00	1.00	10.00%
70212	25.40	2.00	0.04	91.20%
70213	25.40	2.00	0.10	79.43%
70214	25.40	2.00	0.20	63.10%
70215	25.40	2.00	0.30	50.12%
70216	25.40	2.00	0.40	39.81%
70217	25.40	2.00	0.50	31.62%
70218	25.40	2.00	0.60	25.12%
70219	25.40	2.00	0.70	19.95%
70220	25.40	2.00	0.80	15.85%
70221	25.40	2.00	0.90	12.59%
70222	25.40	2.00	1.00	10.00%

●Demension unit:mm

●Other sizes and coatings are available upon request.

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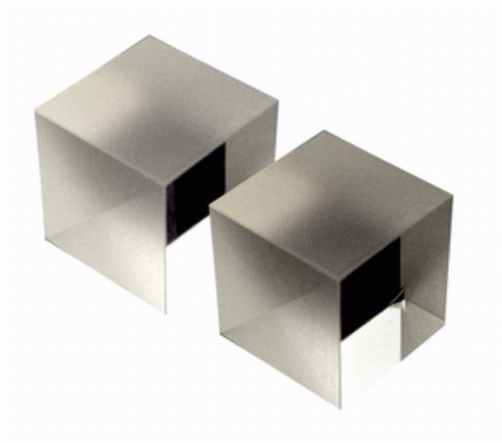
Polarization Optics



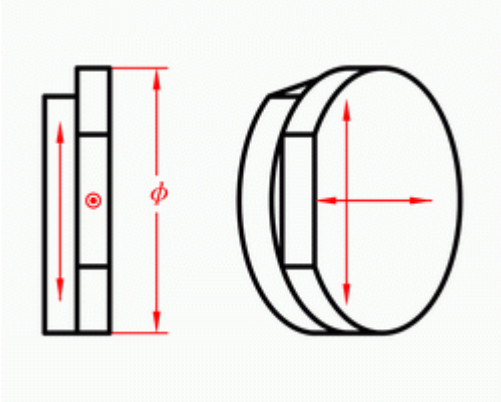
Polarized light carries valuable information about the various physical parameters that have been acting on it. Magnetic fields,chemical interactions, molecular structures, and mechanical stress all affect optical polarization.Applications relying on these polarization changes include astrophysics, agricultural production,electric power generation, and molecular biology.

Polarization states are linear, circular, or elliptical according to the paths traced by electric field vectors in a propagating wave train.Unpolarized light (such as from an incandescent bulb) is a combination of all linear, circular, and elliptical states. Randomly polarized light, in reference to laser output, is composed of two orthogonally linearly polarized collinear beams whose power randomly varies over time. Although random, this radiation is always linearly polarized.

Depolarized light is usually linearly polarized light that has been randomized by either temporal or spatial retardation variations across or along the beam. If the various retardations are integrated enough, the beam will appear to be depolarized. The randomization process usually varies the linear polarization in a fairly smooth and predictable manner.

- Cemented Zero Order Waveplate
- Cemented True Zero Order Waveplate
- Singlet True Zero Order Waveplate
- Low Order Waveplate
- Narrow Band Polarization Beamsplitter Cube
- Broadband Polarization Beamsplitter Cube
- Rotator

Cemented Zero Order Waveplate



A quarter–wave or half-wave retarder made from two plates of quartz with their fast axes crossed;the difference in thickness between the two plates determines the retardance.Zero-order retarders provide accurate retardance over a broad range of wavelengths and are more durable than single-element retarders.

Specification:

Material.....Crystal Quartz
Dimension Tolerance.....+0.0, -0.1mm
Optical Angle Orientation Tolerance.....± 0.1°
Wavefront Distortion.....λ/8 @632.8nm
Retardation Tolerance.....< λ/500
Wavelength Range.....400-2100nm
Parallelism.....< 5 arc second
Clear Aperture.....> 80%
Surface Quality.....20-10 scratch and dig
AR/AR Coating.....R < 0.2% at central wavelength

P/N	Φ	Coating
80101	10.00	coated
80102	12.70	coated
80103	15.00	coated
80104	20.00	coated
80105	25.40	coated

●Demension unit:mm

●Other sizes and coatings are available upon request.

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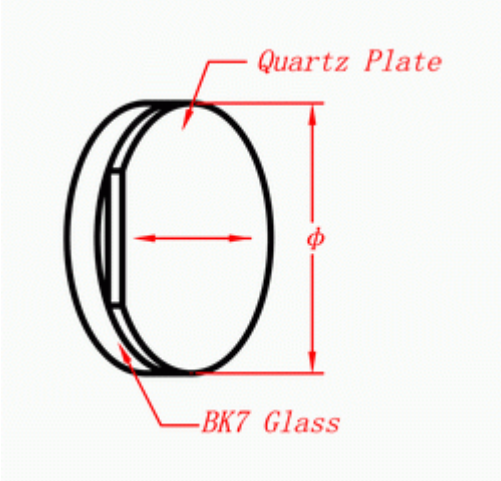
Cemented True Zero Order Waveplate



- Broad Spectral Bandwidth
- Wide Temperature Bandwidth
- Wide Angle Bandwidth
- Cemented By Epoxy

Specification;
Material: Crystal quartz/ BK7 optical glass
Dimension Tolerance: +0.0, -0.2 mm
Wavefront Distortion: λ/ 8 @ 632.8 nm
Retardation Tolerance: <λ/ 500
Wavelength Range: 400-2100 nm
Parallelism: < 1 arc second
Surface Quality: 20-10 scratch & dig
Coating: R<0.2% on both surface at central wavelength
Recommend Standard Wavelength:
532, 632.8, 650, 780, 808, 850 ,1064 ,1310 & 1550nm.

P/N	Φ	Coating
80201	10.00	coated
80202	12.70	coated
80203	15.00	coated
80204	20.00	coated
80205	25.40	coated

●Demension unit:mm

●Other sizes and coatings are available upon request.

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
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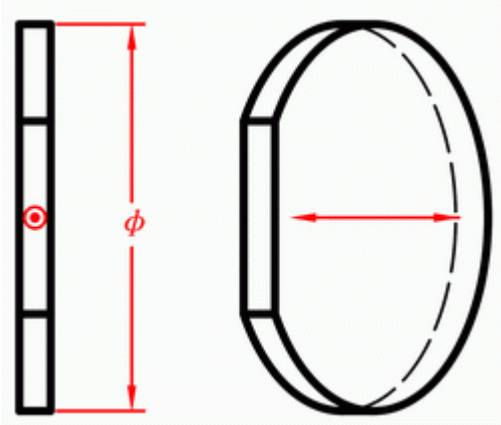
Singlet True Zero Order Waveplate



- Broad Spectral Bandwidth
- Wide Temperature Bandwidth
- Wide Angle Bandwidth
- High Damage Threshold

Specifications:
Material: Crystal quartz
Dimension Tolerance: +0.0, -0.2 mm
Wavefront Distortion:λ/ 8 @ 632.8 nm
Retardation Tolerance: <λ/ 500
Wavelength Range: 1000-2100 nm
Parallelism: < 1 arc sec.
Surface Quality: 20-10 scratch & dig
Coating: R<0.2% on both surface at central wavelength

P/N	Φ	Coating
80301	10.00	coated
80302	12.70	coated
80303	15.00	coated
80304	20.00	coated
80305	25.40	coated

●Demension unit:mm
●Other sizes and coatings are available upon request.

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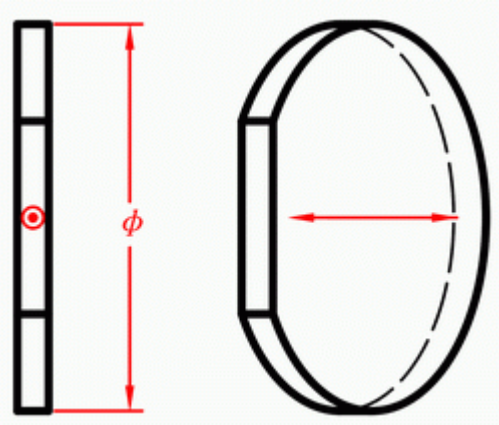
Low Order Waveplate



Low Order Waveplates are much better than the multi-order wave-plates because of its thinner thickness(less than 0.5 mm). Better temperature (38ºC), Wavelength (1.5 nm) and incident angle (4.5º) bandwidth and high damage threshold make it widely used in common application. Also it is economical.

Specification:
Material: Crystal Quartz
Dimension Tolerance: +0.0, -0.2 mm
Wavefront Distortion: λ/ 8 @ 632.8 nm
Retardation Tolerance: <λ/500
Parallelism: < 1 arc second
Surface Quality: 20-10 scratch & dig
Coating:Uncoated or AR R<0.2% on both surfaces at central wavelength

P/N	Φ	Coating
80401	10.00	uncoated
80402	12.70	uncoated
80403	15.00	uncoated
80404	20.00	uncoated
80405	25.40	uncoated
80406	10.00	coated
80407	12.70	coated
80408	15.00	coated
80409	20.00	coated
80410	25.40	coated

●Demension unit:mm

●Other sizes and coatings are available upon request.

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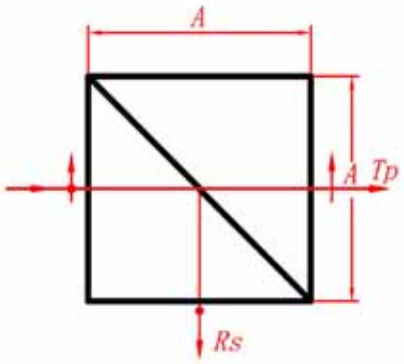
Narrow Band Polarization Beamsplitter Cube



Polarization Beamsplitter Cubes are constructed by cementing two precision right angle prisms together with the appropriate interference coating on the hypotenuse surface.The P-polarization of the input beam is transmitted, and S-polarization of the input beam is reflected.

Specification:
Material.....BK7 grade A optical glass
Dimension Tolerance.....± 0.2mm
Surface Quality.....60-40 scratch and dig
Beam deviation.....< 3 arc minutes
Extinction Ratio.....> 100:1
Principal Transmittance.....Tp > 95% and Ts < 1%
Principal Reflectance.....Rs > 99% and Rp < 5%
Coatings
.....Polarization beamsplitter coating: on hypotenuse
.....AR coating: R < 0.25% on all input and output face

P/N	Size	Wavelength
80501	10×10×10	532nm
80502	12.7×12.7×12.7	532nm
80503	15×15×15	532nm
80504	20×20×20	532nm
80505	25.4×25.4×25.4	532nm
80506	10×10×10	632.8nm
80507	12.7×12.7×12.7	632.8nm
80508	15×15×15	632.8nm
80509	20×20×20	632.8nm
80510	25.4×25.4×25.4	632.8nm

●Demension unit:mm
●Other sizes and coatings are available upon request.

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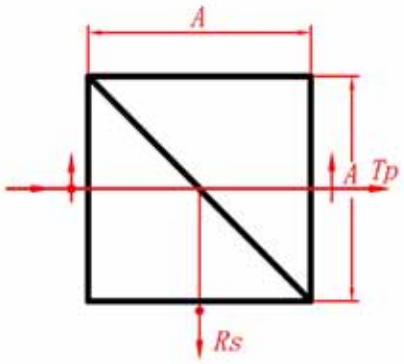
Broadband Polarization Beamsplitter Cube



Polarization Beamsplitter Cubes are constructed by cementing two precision right angle prisms together with the appropriate interference coating on the hypotenuse surface.The P-polarization of the input beam is transmitted, and S-polarization of the input beam is reflected.

Specification:
Material.....SF5 optical glass
Dimension Tolerance.....±0.2mm
Surface Quality.....60-40 scratch and dig
Beam Deviation.....< 3 arc minutes
Principal Transmittance.....Tp > 95% and Ts < 1%
Principal Reflectance.....Rs > 99% and Rp < 5%
Coatings
.....Broadband polarization beamsplitter coating on hypotenuse
.....BBAR coating on all input and output face

P/N	Size	Wavelength
80601	10×10×10	450nm-650nm
80602	12.7×12.7×12.7	450nm-650nm
80603	15×15×15	450nm-650nm
80604	20×20×20	450nm-650nm
80605	25.4×25.4×25.4	450nm-650nm

●Demension unit:mm
●Other sizes and coatings are available upon request.

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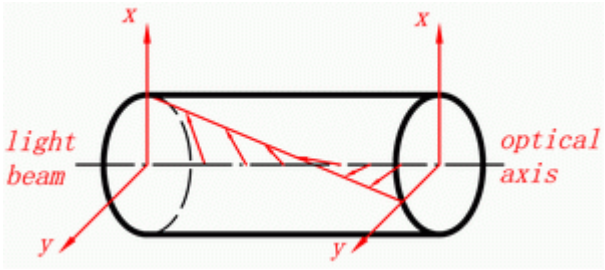
Rotator



The plane of polarization of linearly polarized light will be rotated by Quartz Crystal due to the optical activity. Eastoptics's polarization rotators have very high temperature,bandwidth and can be easily used in rotating the polarization of lasers.

Specification:

Material.....Crystal Quartz
Dimension Tolerance.....+0.0, -0.1mm
Optical Angle Orientation Tolerance.....± 0.1°
Rotation Accuracy.....< 5 arc minutes
Wavefront Distortion.....λ/4 @632.8nm
Wavelength Range.....350-1300nm
Parallelism.....< 10 arc second
Surface Quality.....20-10 scratch and dig
Coating.....AR,R<0.2% at central wavelength or Uncoated
Rotation.....counter-clockwise (left-handed, standard)
Standard Wavelength.....532nm,632.8nm,808nm,1064nm

P/N	Diameter	λ	Roration Angle	Coating
80701	10.00	532nm	45°	Uncoated
80702	12.70	532nm	45°	Uncoated
80703	15.00	532nm	45°	Uncoated
80704	20.00	532nm	45°	Uncoated
80705	10.00	532nm	90°	Uncoated
80706	12.70	532nm	90°	Uncoated
80707	15.00	532nm	90°	Uncoated
80708	20.00	532nm	90°	Uncoated
80709	10.00	532nm	45°	AR Coating
80710	12.70	532nm	45°	AR Coating

●Demension unit:mm

●Other sizes and coatings are available upon request.

P/N	Diameter	λ	Roration Angle	Coating
80711	15.00	532nm	45°	AR Coating
80712	20.00	532nm	45°	AR Coating
80713	10.00	532nm	90°	AR Coating
80714	12.70	532nm	90°	AR Coating
80715	15.00	532nm	90°	AR Coating
80716	20.00	532nm	90°	AR Coating
80717	10.00	632.8nm	45°	Uncoated
80718	12.70	632.8nm	45°	Uncoated
80719	15.00	632.8nm	45°	Uncoated
80720	20.00	632.8nm	45°	Uncoated
80721	10.00	632.8nm	90°	Uncoated
80722	12.70	632.8nm	90°	Uncoated
80723	15.00	632.8nm	90°	Uncoated
80724	20.00	632.8nm	90°	Uncoated
80725	10.00	632.8nm	45°	AR Coating
80726	12.70	632.8nm	45°	AR Coating
80727	15.00	632.8nm	45°	AR Coating
80728	20.00	632.8nm	45°	AR Coating
80729	10.00	632.8nm	90°	AR Coating
80730	12.70	632.8nm	90°	AR Coating
80731	15.00	632.8nm	90°	AR Coating
80732	20.00	632.8nm	90°	AR Coating

●Demension unit:mm

●Other sizes and coatings are available upon request.

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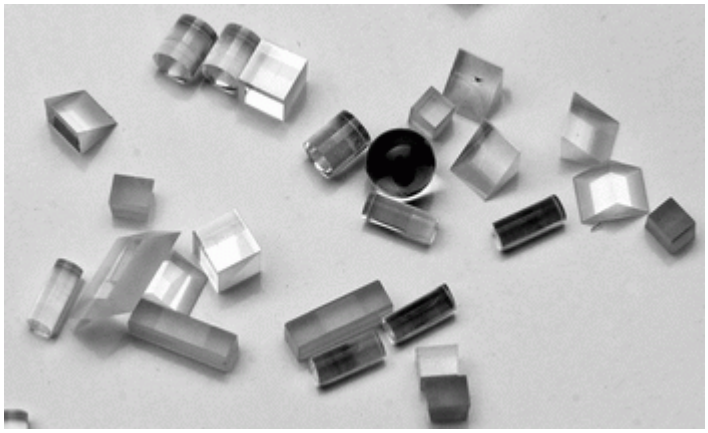
Fiber Optics



Fiber Optics are precision optical components for fiber opticcal communication systems, made from optical material and optical crystal, that are used in optical communication devices as collimator, isolator, circulator, interleaver, attenuator, switch and DWDM etc. Eastoptics' telecom optics include C-Lens, Micro Wedges, Micro Roof Prisms (obtuse angle Roof Prisms), Brewster Prisms, Micro Rhomboid Prisms, Micro Waveplates, Brirefringent Wedges etc..

- C-Lens
- Grin Lens
- Micro Wedge Prism
- Micro Roof Prism
- Micro Brewster Prism
- Micro Rhomboid Prism
- Micro Waveplate

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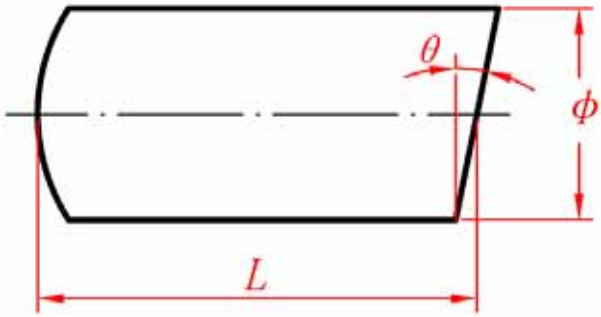
C-LENS



C-Lens is specially designed with special material and profile for collimator used in fiber optics. C-Lens can transform the light from single mode fiber into a collimating beam in lower loss (IL, Insertion Loss), than Grin-lens, and perfectly return loss (RL). In reverse, C-Lens also can as a coupler from collimating beam into fiber. C-Lens can be designed for collimator at different working distance.

Eastoptics can provide and design many kinds of precision C-Lens for customers. Special C-Lens can be designed by Eastoptics' engineers unpon request. Main parameters of C-Lens are Working Distance (WD), Focal Length (f'), Length of the C-Lens (L), Wedge (θ), Beam Diameter (2ω), Beam Waist Diameter (2ω0). Please keep in mind that selection of the most suitable C-Lens is primarily dependent on the application.

Specification:
Material.....Glass like material
Max. Operating Temperature.....400℃
Transmission.....> 99% (900-1700nm)
Hygroscopic Susceptibility.....None
Polarization Preservation.....> 0.99
Acide and Alkaline Resistance.....Excellent
Thermal Expansion Coefficient.....< 6x10-6/℃
Maximum Power.....> 600mW
Diameter.....1.8mm
Diameter Tolerance.....+0.005/-0.010mm
Diameter Ellipticity.....0.003mm
Length Tolerance.....±0.04mm
Wedge Angle.....8°
Wedge Angle Tolerance.....±0.5°
Clear Aperture.....S1:>85%,S2:>0.6mm
Surface Quality.....40-20 scratch and dig

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Surface Figure.....N=2, N=0.4 @546.1nm on S1
.....< λ/4 @632.8nm on S2
Centration.....< 30 arc minutes
AR Coating.....R < 0.2% @ (design wavelength)
±40nm on S1 and S2 surface

P/N	Working Distance	Φ	L	θ	λ
90101	<100	1.80	3.85	8°	1550nm
90102	<100	1.80	3.84	8°	1310nm
90103	<67	1.80	2.94	8°	1550nm
90104	<67	1.80	2.93	8°	1310nm
90105	<68	1.00	2.90	8°	1550nm
90106	<68	1.00	2.89	8°	1310nm
90107	<50	1.00	2.62	8°	1550nm
90108	<50	1.00	2.61	8°	1310nm
90109	<10	1.00	1.92	8°	1550nm
90110	<32	1.00	2.10	8°	1550nm
90111	<49	1.00	2.46	8°	1550nm
90112	<71	1.80	3.05	8°	1550nm
90113	<73	1.00	3.16	8°	1310nm
90114	<140	1.00	4.81	8°	1550nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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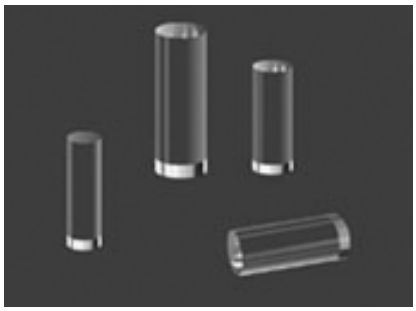
Grin Lens



GRIN (Gradient Index) lens has a high coupling efficiency and easy to modulator especially for coupling with laser diode and other device.

Specifications:
N.A.: 0.4-0.6
Diameter Tolerance: +0.005 mm, -0.01 mm
Length tolerance: +/-0.04mm
Curvature Radius: +/-0.1 um
Surface Quality: 40/20 Scratch/Dig
Coating: R<0.25%@center wavelength
Coupling Efficiency: around 50%

P/N	Pitch	Φ	λ	Radius of Curvature
90201	0.22	1.80	830nm	2.00
90202	0.22	1.80	980nm	2.00
90203	0.22	1.80	1310nm	2.00
90204	0.22	1.80	1550nm	2.00

●Demension unit:mm

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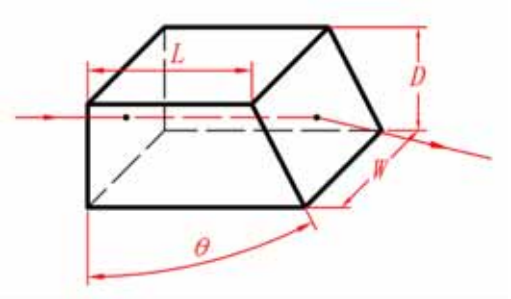
Micro Wedge



Specifications:

Material.....BK7 grade A optical glass

Dimension Tolerance.....+0.0, -0.1mm

Wege Angle Tolerance.....< 3 arc minutes

Chip.....< 0.15mm

Clear Aperture.....> 90%

Surface Quality.....40-20 scratch and dig

Flatness.....λ/8 @632.8nm

AR Coating.....R < 0.2%@1550nm±40nm
on input and output surface

P/N	L	W	D	θ
90301	1.90	1.80	0.80	7°3'
90302	1.90	1.80	0.80	7°17'
90303	1.90	1.80	0.80	7°21'
90304	1.90	1.80	0.75	7°14'

●Demension unit:mm

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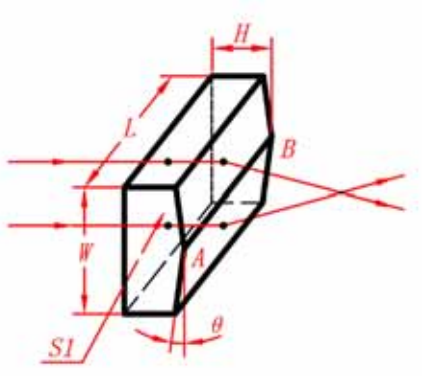
Micro Roof Prism



Specifications:

Material.....BK7 grade A optical glass

Dimension Tolerance.....±0.05mm

Wege Tolerance.....< 30 arc seconds

Chip.....AB border < 0.01mm, other < 0.15mm

Tower Tolerance.....AB border: < 1 arc minute

Clear Aperture.....> 90%

Surface Quality.....40-20 scratch and dig

Flatness.....λ/8 @632.8nm

AR Coating....R < 0.2%@1550nm±40nm (IOA: 5°)
on input and output surface

P/N	L	W	H	θ
90401	2.00	2.00	1.50	3.694°
90402	2.00	2.00	1.50	3.628°
90403	2.00	2.00	1.50	3.722°

●Demension unit:mm

●Other sizes and coatings are available upon request.

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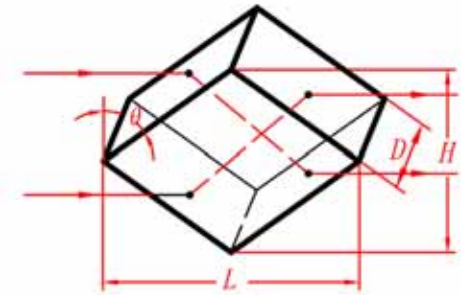
Micro Brewster Prism



Specifications:

Material.....Fused Silica

Dimension Tolerance.....+0.0, -0.1mm

Clear Aperture.....> 90%

Parallelism

.....S1 and S3, S2 and S4: < 10 arc seconds

Surface Quality

.....S1, S2, S3 and S4: 40-20 scratch and dig

.....other surface are fine ground

Flatness.....λ/8 @632.8nm

Angle Tolerance.....< 3 arc minutes

Perpendicularity.....< 0.3°

Chip.....< 0.15mm

P/N	L	W	D	θ
90501	2.89	1.98	1.30	55.297°
90502	4.13	2.68	1.30	55.297°

●Demension unit:mm

●Other sizes and coatings are available upon request.

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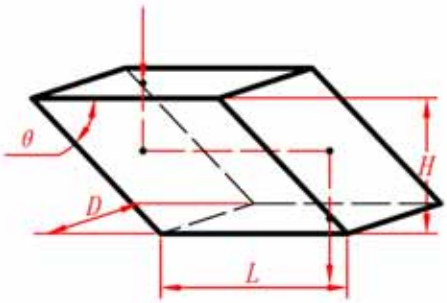
Micro Rhomboid Prism



Specifications:

Material.....SF11 grade A optical glass

Dimension Tolerance.....+0.0, -0.1mm

Clear Aperture.....> 90%

Surface Quality.....40-20 scratch and dig

Flatness.....λ/4 @632.8nm

AR Coating.....R < 0.2%@1550nm±40nm
on input and output surface

Bevel.....0.2mm x 45°

P/N	H	L	D	θ
90601	3.00	5.00	3.00	45°
90602	3.00	3.00	3.00	45°

●Demension unit:mm

●Other sizes and coatings are available upon request.

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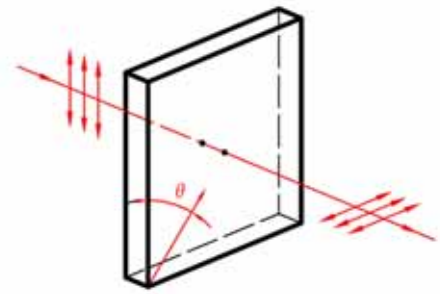
Micro Waveplate



Specification:

Material.....Optical grade Crystal Quartz
Dimension Tolerance.....+0.00, -0.05mm
Optical Angle Orientation Tolerance..... 0.1°
Wavefront Distortion.....λ/10 @632.8nm
Phase Retardation.....see the table @1550nm
Retardation Tolerance.....< λ/500
Parallelism.....< 1 arc second
Clear Aperture.....> 90%
Surface Quality.....20-10 scratch and dig
Chip.....< 0.02mm
AR/AR Coating.....R < 0.2% @1550nm±40nm

P/N	Size	θ	Phase Retardation	λ
90701	2.0×1.0	45°	λ/2	1550nm
90702	1.0×0.5	45°	λ/2	1550nm
90703	2.0×2.0	45°	λ/2	1550nm
90704	2.0×1.0	45°	λ/4	1550nm
90705	1.0×0.5	45°	λ/4	1550nm
90706	2.0×2.0	45°	λ/4	1550nm
90707	2.0×1.0	22.5°	λ/2	1550nm
90708	1.0×0.5	22.5°	λ/2	1550nm
90709	2.0×2.0	22.5°	λ/2	1550nm
90710	2.0×1.0	22.5°	λ/4	1550nm
90711	1.0×0.5	22.5°	λ/4	1550nm
90712	2.0×2.0	22.5°	λ/4	1550nm

●Demension unit:mm

●Other sizes and coatings are available upon request.

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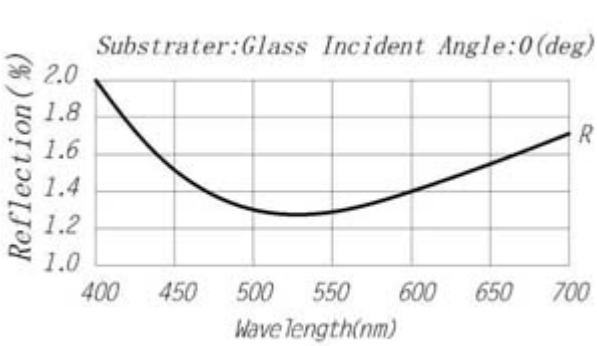
Coatings

As light passes through an uncoated glass substrate,approximately 4% will be reflected at each surface.This result in a total transmission of only 92% of the incident light.Anti-Reflection coatings are especially important if the system contains many transmitting optical elements.Coationg each component will increase the throughput of the system and reduce hazards caused by reflections traveling backwards through the system(ghost images).Many low-light system incorporate AR coated optics to allow for an efficient use of the light.We now can provide many kinds of antireflective,high reflective and partial reflective coatings.

- Single Layer MgF2 AR Coating
- "V" Type AR Coating
- "W" Type AR Coating
- Dielectric High Reflection Coating
- Metal Reflection Coating

EastOptics Inc.
P. O. Box 03A-057,Fuzhou,Fujian 350003 P. R. China
Tel.:+86-591-83399361 Fax: +86-591-83399362 E-mail:sales@eastoptics.com
http://www.eastoptics.com

Single Layer MgF_2 AR Coating



Specification
Single layer MgF2@540nm
R<1.5% @Center Wavelength,R<3% @ 400-700nm

Application:
Economic,Lens & Prism,Input & output surface

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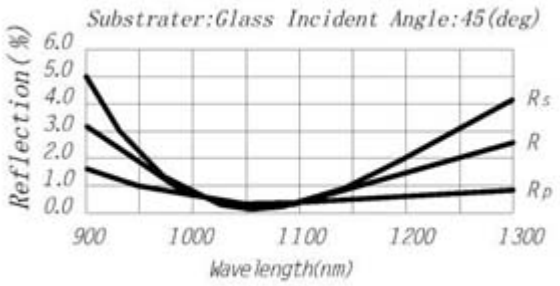
“V” Type AR Coating



Specification
0°:R<0.2%@Center Wavelength
45°:R<0.5%@Center Wavelength

Application
High performance,Element in laser system

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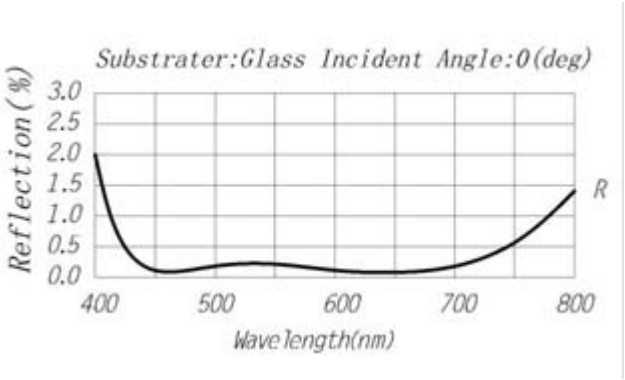
"W" Type AR Coating



Specification
0°:R<0.5% @ 450-650nm
45°:R<1.0% @ 450-650nm

Application
High performance,Lens & Prism,Input & output surface

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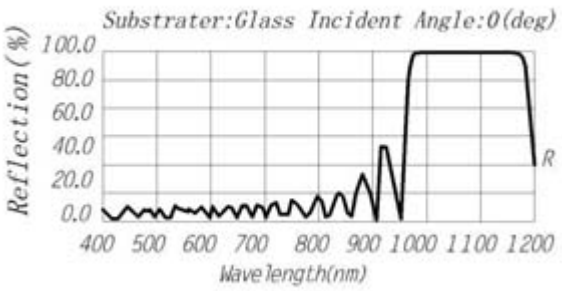
Dielectric High Reflection Coating



Specification

0°:R<99.8%@Center Wavelength

45°:R<99.5%@Center Wavelength

Application

Laser cavity mirror,laser system folder

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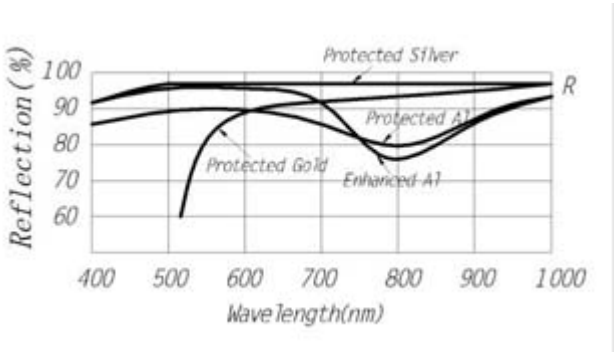
Metal Reflection Coating



Specification:

Protected aluminum.....R_{avg}≥87%@400–800nm

Enhanced aluminum.....R_{avg}≥93%@450–750nm

Protected silver.....Ravg≥95%@400nm–20mm

Au(Bare).....Ravg≥99%@700nm–20mm

Au(Protected).....Ravg≥98%@650nm–16mmApplication

Application:

Sphere mirror,Broadband,Economic

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Custom Optics

The skilful engineers and technicians in EastOptics are developing specialized fabrication techniques for optical components to meet a wide range of requirements up to the highest international standards.

In addition to standards optical components described in the previous pages of this catalog,EastOptics designs and provides a wide range of custom optics.EastOptics is not only capable of serving high volume order but also in a position to provide as few as a single piece,customized products.Customized products are normally a quite expensive.However, EastOptics will work to meet your budget requirements.

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Terms and Conditions

Technical specifications

Technical specifications are subject to change without notification.Customers should always verify the suitability of a product for its intended use. If a particular specification is crucial, please check before ordering.

Price

All prices in quotation or contract are in US dollars and subject to change without advanced notice. All products are shipped FOB Fuzhou,Fujian,China.Any tax or other charges which EastOptics is liable to collect on behalf of any governmental authority as a result of the sale,use or delivery of products,including without limitation, duties,value added and withholding taxes, is the responsibility of the customers, and if paid by EastOptics shall be charged to customers as a separate item on the invoice, to the extent possible.

Shipping

Unless given written instruction,EastOptics shall select the carrier.EastOptics will select the most efficient and economical method for your order.If you have a preferred shipping carrier,we will need the name,address, phone number of your shipper,and your account number.Default shipping and handling charges are prepaid and added to your invoice.All claims for shortage of Products ordered or for incorrect charges must be presented to EastOptics within 10 days after receipt by customers of the particular shipment of products.

Payment

All payments are in US dollars unless otherwise approved.Invoice amount includes total price of items, shipping and handling charges.Upon approved credit by EastOptics payments terms shall be net 30 days from date of shipment.EastOptics reserves the right to require alternative payment terms including,without limitation, letter of credit or payment in advance.

Returns

EastOptics will only accept defective products or fault products(by the reason of EastOptics) returned.Customer should send inspection report to EastOptics first,and return the products according to the EastOptics's instructions.Any product which has been returned to EastOptics shall be subject to EastOptics standard examination procedure,and EastOptics will make free replacement for defective product and will not evaluate the product returned without any itemized statement of claimed defects and will return it to the customer at the customer's expense.

Warranty

EastOptics warrants the goods against defective materials or workmanship for a period of 6 months from the date on which the goods are ready for delivery or the date of invoice whichever is the earlier.

FAQ

1) How to know the prices?

Re: Please send your request for quotations(RFQs) to us,you can send them via e-mail,fax or call.It is strongly recommended that you send them in written work,we'll send you the quotation within 24 hours.

2) How to order products from EastOptics?

Re: You can place an order to us via fax, email, or postal mail.We will send you an order confirmation within 2 days. To avoid any misunderstand,we don't accept order via call.

3) I want to order some custom products for my application.Is it available?

Re: It's available.We produce optical components in both customized design and standard design. Please send us your detail requirements or drawings. We will check if we can do it,and reply you as soon as possible.

4) What's the lead time?

Re: It depends on the products. It also depends on the quantity. Some products can be shipped within 2 weeks, some need more weeks. Delivery time will be indicated in the quotation.

5) How to make payments to EastOptics? What's the payment term?

Re: The payments can be made by Wire Transfer or cheque.The payment term shall be net 30 days from date of shipment.EastOptics reserves the right to require alternative payment terms including,without limitation,letter of credit or payment in advance.

6) I have no experience with EastOptics products, and worry about the products quality.Can EastOptics guarantee the products to be complied with requirements?

Re: You don't need worry the quality too much. First of all, we do what we are capable of. When we receive your inquiry and send you quotation, we will report you what we can achieve and what we can't.

With over 10 years of experience and skilful staff, EastOptics have the capability to produce high quality products.All of optical components shipped from EastOptics are fully inspected and controlled to meet customers' requirements.

7) In case there is a faulty product, or one of specification is out of requirement. How do I handle it?

Re: Please return defective products to EastOptics, and we'll inspect them and make free replacements for you.

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