

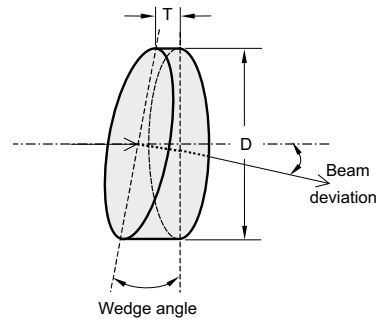
Prisms

WEDGE PRISMS

- Steer beams in optical systems
- Can be used in pairs for continuous angular adjustment

Having selected an appropriate wedge, it is easy to create a precise beam deviation without affecting other beam parameters. If two wedges are used together with the sloping surfaces in close proximity, it is possible to produce a continuous variation of beam deviation by counter – rotating the wedges.

Wedge prisms are made from alternative materials, such as UV grade fused silica, and different shapes and sizes or with various anti-reflection coatings.



SPECIFICATIONS

Material	BK7, UV FS
Clear aperture	90% of the diameter
Diameter tolerance	+0.00 -0.12 mm
Wedge tolerance	±3 arcmin

Contact us for other types of prisms
e.g. trapezoidal, various isosceles, Dove, Amici, Penta, etc.

Standard Wedge Prisms

Surface quality: 40-20 scratch & dig (MIL-PRF-13830B). Surface flatness: $\lambda/4$ @633nm

Catalogue number BK7		Wedge, deg	Beam Deviation, deg	
Ø12.7 × 3 mm	Ø25.4 × 3 mm		@ 1064	@ 532
310-0100	310-0200	0.5	0.25	0.26
310-0101	310-0201	1	0.51	0.52
310-0102	310-0202	2	1.01	1.04
310-0103	310-0203	3	1.52	1.56
310-0105	310-0205	5	2.54	2.60

Catalogue number UV FS		Wedge, deg	Beam Deviation, deg		
Ø12.7 × 3 mm	Ø25.4 × 3 mm		@ 1064	@ 532	@ 355
310-1100	310-1200	0.5	0.22	0.23	0.24
310-1101	310-1201	1	0.45	0.46	0.48
310-1102	310-1202	2	0.90	0.92	0.95
310-1103	310-1203	3	1.35	1.38	1.43
310-1105	310-1205	5	2.26	2.31	2.39



Most of the Prisms are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



Precision Wedge Prisms

Surface quality: 20-10 scratch & dig (MIL-PRF-13830B). Surface flatness: $\lambda/10$ @633nm

Catalogue number BK7		Wedge, deg	Beam Deviation, deg	
Ø12.7 × 3 mm	Ø25.4 × 6 mm		@ 1064	@ 532
311-0100	311-0200	0.5	0.25	0.26
311-0101	311-0201	1	0.51	0.52
311-0102	311-0202	2	1.01	1.04
311-0103	311-0203	3	1.52	1.56
311-0105	311-0205	5	2.54	2.60

Catalogue number UV FS		Wedge, deg	Beam Deviation, deg		
Ø12.7 × 3 mm	Ø25.4 × 6 mm		@ 1064	@ 532	@ 355
311-1100	311-1200	0.5	0.22	0.23	0.24
311-1101	311-1201	1	0.45	0.46	0.48
311-1102	311-1202	2	0.90	0.92	0.95
311-1103	311-1203	3	1.35	1.38	1.43
311-1105	311-1205	5	2.26	2.31	2.39

HOUSING ACCESSORIES

Stable Steel
Mirror/Beamsplitter
Mount 840-0036

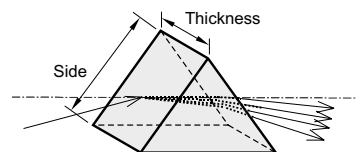
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LASER DISPERSING PRISMS

- Separate light by wavelength
- Are made so that entrance and exit beams pass through at the Brewster angle

Like Brewster angle windows, laser dispersing prisms can be used inside the cavity of a laser operating on very low gain laser transitions, where even slight reflection losses may be intolerable.



Contact us for other types of prisms
e.g. trapezoidal, various isosceles, Dove, Amici, Penta, etc.

Custom fabrication also available:
coating, cutting, edging, drilling according to your specification.

SPECIFICATIONS

Material	BK7, UV FS, SF11
Surface quality	40-20 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ @ 633 nm
Apex angle tolerance	± 2 arcmin
Design wavelength	800 nm



Most of the Prisms are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



Material	Catalogue number	Maximum input beam diameter, mm	Side length, mm	Thickness, mm	Apex angle
BK7	320-0110	6.0	15	10	67°
UV FS	320-1110	6.0	15	10	69°
SF11	320-8110	6.0	15	10	59°
BK7	320-0218	12.0	25	18	67°
UV FS	320-1218	12.0	25	18	69°
SF11	320-8218	12.0	25	18	59°
BK7	320-0525	22.0	50	25	67°
UV FS	320-1525	22.0	50	25	69°
SF11	320-8525	22.0	50	25	59°

PELLIN-BROCA PRISMS

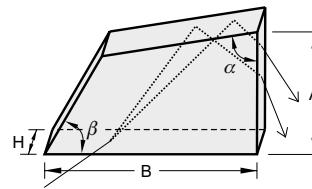
- Extremely small loss of a p-polarized beam
- Light separated by wavelength is conveniently turned at an 90° angle with minimum deviation
- UV FS prisms provide 1.26° separation between 532 nm and 1064 nm

In a Pellin-Broca prism, an ordinary dispersing prism is split in half along the bisector of the apex angle. Using a right angle prism, the two halves are joined to create a dispersing prism with an internal right angle bend obtained by total internal reflection. The entrance beam is deviated at an 90° angle to its initial direction.

Material	Catalogue number	A, mm	B, mm	H, mm
BK7	325-0206	11.0	20.0	6.4
	325-0412	23.5	40.0	12.7
UV FS	325-1206	11.0	20.0	6.4
	325-1215	15.0	26.0	15.0
	325-1412	23.5	40.0	12.7



Most of the Prisms are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



SPECIFICATIONS

Material	BK7, UV FS
Surface quality	20-10 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/10$ @ 633 nm
Angles	$\alpha = 79.5^\circ \pm 0.5^\circ$, $\beta = 60^\circ \pm 1^\circ$
Design wavelength	546.1 nm
Dimensions	± 0.2 mm
Clear aperture	> 80% of dimensions

HOUSING ACCESSORIES

Tilt/Rotation Stage
860-0110

See page 8.130



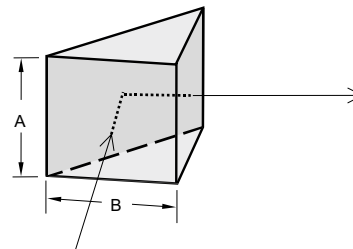
RIGHT ANGLE PRISMS

- 45–45–90 degree prisms
- Can be used as internal or external reflectors or as retro-reflectors

These prisms are used to direct beams at 90 degrees by using a hypotenuse face in total internal reflection (TIR). Right angle prisms are often preferable to an inclined mirror in applications involving severe acoustic or inertial loads, because they are easier to mount and deform much less than a mirror in response to external mechanical stress. As long as acceptance angle limitations for TIR from the roof faces are not exceeded, right angle prisms can serve as a retro reflector, turning beams back to the original direction.

For various HR or AR coatings, please refer to the Coatings section.

Contact us for other types of prisms e.g. trapezoidal, various isosceles, Dove, Amici, Penta, etc.



SPECIFICATIONS

Material	BK7, UV FS
Surface quality	40-20 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ @ 633 nm
Clear aperture	80% of the face size
90° angle tolerance	± 2 arcmin or ± 5 arcsec
Pyramidal tolerance	± 1 arcmin or ± 30 arcsec
Dimensions	± 0.25 mm

HOUSING ACCESSORIES

Prism Holders 840-0160, 840-0170

See page 8.86



Catalogue number	Size of face, A x B mm	90° angle tolerance	Pyramidal tolerance	
BK7 330-0052	UV FS 330-1052	5.0 x 5.0	2 arcmin	1 arcmin
330-0102	330-1102	10.0 x 10.0	2 arcmin	1 arcmin
330-0122	330-1122	12.5 x 12.5	2 arcmin	1 arcmin
330-0152	330-1152	15.0 x 15.0	2 arcmin	1 arcmin
330-0202	330-1202	20.0 x 20.0	2 arcmin	1 arcmin
330-0252	330-1252	25.0 x 25.0	2 arcmin	1 arcmin
330-0105	330-1105	10.0 x 10.0	5 arcsec	30 arcsec
330-0125	330-1125	12.5 x 12.5	5 arcsec	30 arcsec
330-0155	330-1155	15.0 x 15.0	5 arcsec	30 arcsec
330-0205	330-1205	20.0 x 20.0	5 arcsec	30 arcsec
330-0255	330-1255	25.0 x 25.0	5 arcsec	30 arcsec

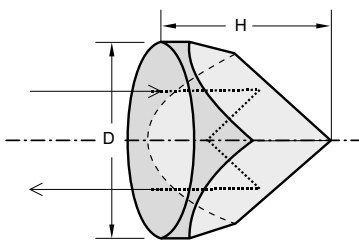
Custom fabrication also available: coating, cutting, edging, drilling according to your specification.

CORNER CUBES

- Incident light deviates by **180 degrees independently of the angle of incidence**

These prisms have 3 mirror surfaces making angles of 90° to each other, juxtaposed to form the corner of a cube with the entrance face perpendicular to the cube diagonal. Respective of an incident direction, all beams are reflected back to the original direction. Solid corner cubes are used in high precision applications or with lasers over very long distances. These "angle insensitive" mirrors therefore find frequent applications in situations where orientation is difficult or impossible to control and where a mirror would therefore be unsatisfactory.

Contact us for other types of prisms e.g. trapezoidal, various isosceles, Dove, Amici, Penta, etc.



SPECIFICATIONS

Material	BK7, UV FS
Surface quality	60-40 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ at 633 nm
Angle tolerances	± 5 arcsec
Beam deviation	$180^\circ \pm 30$ sec
Diameter tolerance:	+0.0/-0.3mm
Clear aperture	>80%
Uncoated	

Material	Catalogue Number	Diameter D, mm	Height H, mm
BK7	340-0217	22.0	17.5
	340-0217M	25.4	17.5
	340-0219	25.4	19.0
	340-0329	38.1	28.5
	340-0538	50.8	38.0
	340-0648	63.5	48.0
UV FS	340-1217	22.0	17.5
	340-1217M	25.4	17.5

Models **340-0217M** and **340-1217M** are mounted into black anodized aluminium ring $\varnothing 25.4$ mm and clear aperture $\varnothing 17$ mm.



Most of the Corner Cubes are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



Mounting Suggestion



MOUNTING

Corner cube (**340-0217M**, **340-1217M**) is mounted into black anodized aluminium ring $\varnothing 25.4$ mm and clear aperture $\varnothing 17$ mm.



HOUSING ACCESSORIES

Kinematic Mirror and Beamsplitter Mount 840-0020

See page 8.57

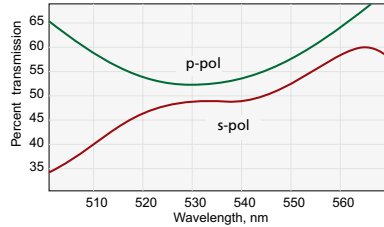
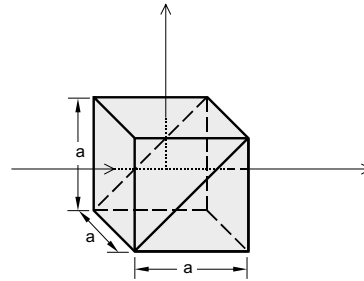


NON-POLARIZING CUBE BEAMSPLITTERS

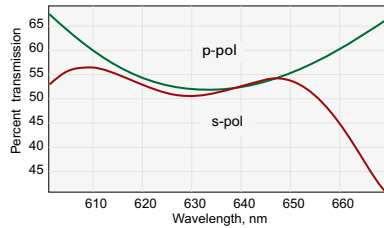
- Two right angle prisms cemented together with a partially reflecting surface on the internal (protected) face

All dielectric coatings of non-polarizing laser beamsplitters are optimised to be insensitive to polarization at designed wavelengths. The coatings hold both the s- and p-polarization components to the same ratio of reflection-to-transmission over a specific laser wavelength region.

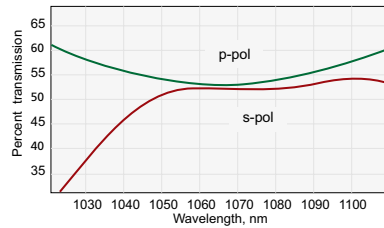
The four outer faces are all anti-reflection coated.



Typical transmission curve @ 532 nm



Typical transmission curve @ 633 nm



Typical transmission curve @ 1064 nm

SPECIFICATIONS

Material	BK7
Surface quality	40-20 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ @ 633 nm
Clear aperture	80% of the face size
Beam deviation	3 arcmin
Dimension tolerance	± 0.5 mm
Splitting ratio	R/T = 50/50 $\pm 5\%$, $ R_s - R_p \leq 5\%$ and $ T_p - T_s \leq 5\%$

Catalogue number	Wavelength, nm	Cube side a, mm
350-0101	532	10
350-0151	532	15
350-0201	532	20
350-0251	532	25
350-0102	633	10
350-0152	633	15
350-0202	633	20
350-0252	633	25
350-0106	1064	10
350-0156	1064	15
350-0206	1064	20
350-0256	1064	25

Please contact us if you need larger sizes or optimisation at other wavelengths.



Most of the Non-Polarizing Cube Beamsplitters are available for fast off-the-shelf delivery. Check the availability at www.eksmaoptics.com



HOUSING ACCESSORIES

Prism Holders
840-0160, 840-0170-04
See page 8.86



COATINGS

WINDOWS & FILTERS

MIRRORS

LENSES

PRISMS

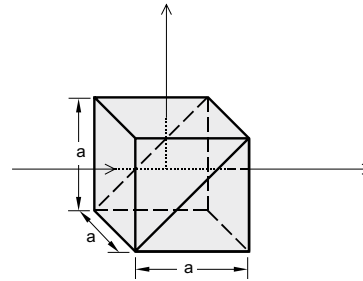
POLARIZING OPTICS

UV & IR OPTICS

FIXED RATIO CUBE BEAMSPLITTERS

- Two right angle prisms cemented together with a partially reflecting surface on the internal (protected) face

All dielectric coatings of fixed ratio laser beamsplitters are optimised to be insensitive to split only s- or only p-polarization or only unpolarized light ($R=(R_s+R_p)/2$ and $T=(T_s+T_p)/2$) at designed wavelengths.



The four outer faces are all anti-reflection coated.

SPECIFICATIONS

Material	BK7, UV FS
Surface quality	40-20 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ @ 633 nm
Clear aperture	80% of the face size
Beam deviation	<3 arcmin
Dimension tolerance	± 0.5 mm
Reflectance / Transmittance	50 / 50% with tolerance $\pm 5\%$ at designed wavelengths

BK7

Catalogue number	Wavelength, nm	Cube side a, mm
355-0100	488-515	10
355-0150	488-515	15
355-0200	488-515	20
355-0250	488-515	25
355-0101	532	10
355-0151	532	15
355-0201	532	20
355-0251	532	25
355-0102	633	10
355-0152	633	15
355-0202	633	20
355-0252	633	25

Catalogue number	Wavelength, nm	Cube side a, mm
355-0105	800	10
355-0155	800	15
355-0205	800	20
355-0255	800	25
355-0107	1064	10
355-0157	1064	15
355-0207	1064	20
355-0257	1064	25
355-0109	1550	10
355-0159	1550	15
355-0209	1550	20
355-0259	1550	25

UV Fused Silica

Catalogue number	Wavelength, nm	Cube side a, mm
355-1102	280	10
355-1152	280	15
355-1202	280	20
355-1252	280	25

Catalogue number	Wavelength, nm	Cube side a, mm
355-1105	355	10
355-1155	355	15
355-1205	355	20
355-1255	355	25

HOUSING ACCESSORIES

Prism Holders
840-0160, 840-0170-04
See page 8.86



COATINGS

WINDOWS & FILTERS

MIRRORS

LENSES

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POLARIZING OPTICS

UV & IR OPTICS