

# Prisms

## WEDGE PRISMS

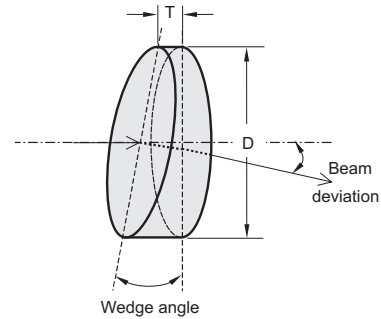
### FEATURES

- › 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.

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



### SPECIFICATIONS

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

### STANDARD WEDGE PRISMS

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

#### MATERIAL: BK7

Wedge, deg	Beam Deviation, deg		Ø12.7 × 3 mm		Ø25.4 × 3 mm	
	@ 1064	@ 532	Catalogue number	Price, EUR	Catalogue number	Price, EUR
0.5	0.25	0.26	310-0100E	25	310-0200E	30
1	0.51	0.52	310-0101E	25	310-0201E	30
2	1.01	1.04	310-0102E	25	310-0202E	30
3	1.52	1.56	310-0103E	25	310-0203E	30
5	2.54	2.60	310-0105E	25	310-0205E	30

#### MATERIAL: UV FS

Wedge, deg	Beam Deviation, deg			Ø12.7 × 3 mm		Ø25.4 × 3 mm	
	@ 1064	@ 532	@ 355	Catalogue number	Price, EUR	Catalogue number	Price, EUR
0.5	0.22	0.23	0.24	310-1100E	40	310-1200E	50
1	0.45	0.46	0.48	310-1101E	40	310-1201E	50
2	0.90	0.92	0.95	310-1102E	40	310-1202E	50
3	1.35	1.38	1.43	310-1103E	40	310-1203E	50
5	2.26	2.31	2.39	310-1105E	40	310-1205E	50

**PRECISION WEDGE PRISMS**

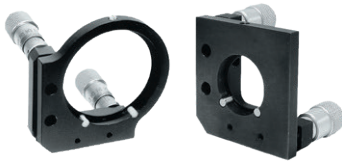
Surface quality: 20 – 10 scratch & dig (MIL-PRF-13830B). Surface flatness:  $\lambda/10$  @ 633 nm.

**MATERIAL: BK7**

Wedge, deg	Beam Deviation, deg		Ø12.7 × 6 mm		Ø25.4 × 6 mm	
	@ 1064	@ 532	Catalogue number	Price, EUR	Catalogue number	Price, EUR
0.5	0.25	0.26	<a href="#">311-0100E</a>	35	<a href="#">311-0200E</a>	45
1	0.51	0.52	<a href="#">311-0101E</a>	35	<a href="#">311-0201E</a>	45
2	1.01	1.04	<a href="#">311-0102E</a>	35	<a href="#">311-0202E</a>	45
3	1.52	1.56	<a href="#">311-0103E</a>	35	<a href="#">311-0203E</a>	45
5	2.54	2.60	<a href="#">311-0105E</a>	35	<a href="#">311-0205E</a>	45

**HOUSING ACCESSORIES**

Stable Steel Mirror/Beamsplitter Mount 840-0036



**MATERIAL: UV FS**

Wedge, deg	Beam Deviation, deg			Ø12.7 × 6 mm		Ø25.4 × 6 mm	
	@ 1064	@ 532	@ 355	Catalogue number	Price, EUR	Catalogue number	Price, EUR
0.5	0.22	0.23	0.24	<a href="#">311-1100E</a>	50	<a href="#">311-1200E</a>	60
1	0.45	0.46	0.48	<a href="#">311-1101E</a>	50	<a href="#">311-1201E</a>	60
2	0.90	0.92	0.95	<a href="#">311-1102E</a>	50	<a href="#">311-1202E</a>	60
3	1.35	1.38	1.43	<a href="#">311-1103E</a>	50	<a href="#">311-1203E</a>	60
5	2.26	2.31	2.39	<a href="#">311-1105E</a>	50	<a href="#">311-1205E</a>	60

**LASER DISPERSING PRISMS**

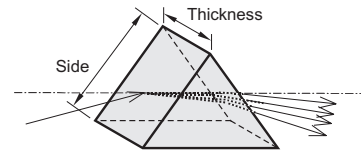
**FEATURES**

- › 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**

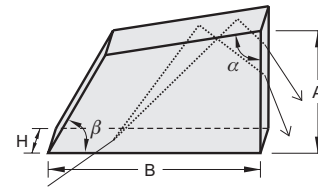
Material	BK7, UV FS, SF11
Surface quality	40 – 20 scratch & dig (MIL-PRF-13830B)
Surface flatness	$\lambda/4$ @ 633 nm
Apex angle tolerance	$\pm 2$ arcmin
Design wavelength	800 nm

Material	Maximum input beam diameter, mm	Side length, mm	Thickness, mm	Apex angle	Catalogue number	Price, EUR
BK7	6.0	15	10	67°	<a href="#">320-0110</a>	40
UV FS	6.0	15	10	69°	<a href="#">320-1110</a>	72
SF11	6.0	15	10	59°	<a href="#">320-8110</a>	49
BK7	12.0	25	18	67°	<a href="#">320-0218</a>	69
UV FS	12.0	25	18	69°	<a href="#">320-1218</a>	125
SF11	12.0	25	18	59°	<a href="#">320-8218</a>	95
BK7	22.0	50	25	67°	<a href="#">320-0525</a>	140
UV FS	22.0	50	25	69°	<a href="#">320-1525</a>	260
SF11	22.0	50	25	59°	<a href="#">320-8525</a>	195

## PELLIN-BROCA PRISMS

### FEATURES

- › 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.

### 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	$\pm 0.2$ mm
Clear aperture	> 80% of dimensions

### HOUSING ACCESSORIES

Tilt/Rotation Stage  
860-0110

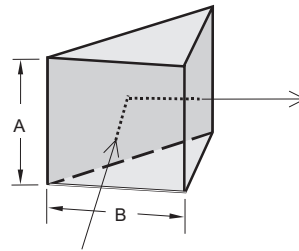


Material	A, mm	B, mm	H, mm	Catalogue number	Price, EUR
BK7	11.0	20.0	6.4	<a href="#">325-0206</a>	57
	23.5	40.0	12.7	<a href="#">325-0412</a>	63
UV FS	11.0	20.0	6.4	<a href="#">325-1206</a>	110
	23.5	40.0	12.7	<a href="#">325-1412</a>	150

## RIGHT ANGLE PRISMS

### FEATURES

- › 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.

### 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	$\pm 2$ arcmin or $\pm 5$ arcsec
Pyramidal tolerance	$\pm 1$ arcmin or $\pm 30$ arcsec
Dimensions	$\pm 0.25$ mm

Size of face, A × B mm	90° angle tolerance	Pyramidal tolerance	BK7		UV FS	
			Catalogue number	Price, EUR	Catalogue number	Price, EUR
5.0 × 5.0	2 arcmin	1 arcmin	<a href="#">330-0052</a>	18	<a href="#">330-1052</a>	45
10.0 × 10.0	2 arcmin	1 arcmin	<a href="#">330-0102</a>	20	<a href="#">330-1102</a>	49
12.5 × 12.5	2 arcmin	1 arcmin	<a href="#">330-0122</a>	22	<a href="#">330-1122</a>	51
15.0 × 15.0	2 arcmin	1 arcmin	<a href="#">330-0152</a>	25	<a href="#">330-1152</a>	55
20.0 × 20.0	2 arcmin	1 arcmin	<a href="#">330-0202</a>	31	<a href="#">330-1202</a>	59
25.0 × 25.0	2 arcmin	1 arcmin	<a href="#">330-0252</a>	37	<a href="#">330-1252</a>	70
10.0 × 10.0	5 arcsec	30 arcsec	<a href="#">330-0105</a>	42	<a href="#">330-1105</a>	93
12.5 × 12.5	5 arcsec	30 arcsec	<a href="#">330-0125</a>	44	<a href="#">330-1125</a>	95
15.0 × 15.0	5 arcsec	30 arcsec	<a href="#">330-0155</a>	50	<a href="#">330-1155</a>	103
20.0 × 20.0	5 arcsec	30 arcsec	<a href="#">330-0205</a>	57	<a href="#">330-1205</a>	116
25.0 × 25.0	5 arcsec	30 arcsec	<a href="#">330-0255</a>	73	<a href="#">330-1255</a>	142

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

### HOUSING ACCESSORIES

Prism Holders  
840-0160, 840-0170



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

## CORNER CUBES

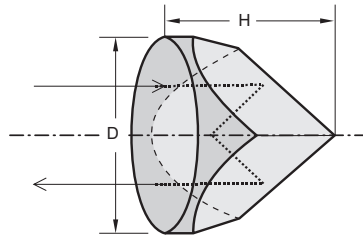
### FEATURES

- › 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	$\pm 5$ arcsec
Beam deviation	$180^\circ \pm 30$ sec
Diameter tolerance	+0.0 / -0.3mm
Clear aperture	>80%
Coating	uncoated

Material	Diameter D, mm	Height H, mm	Catalogue number	Price, EUR
BK7	22.0	17.5	<a href="#">340-0217</a>	120
	25.4	17.5	<a href="#">340-0217M</a>	140
	25.4	19.0	<a href="#">340-0219</a>	135
	38.1	28.5	<a href="#">340-0329</a>	175
	50.8	38.0	<a href="#">340-0538</a>	180
UV FS	63.5	48.0	<a href="#">340-0648</a>	250
	22.0	17.5	<a href="#">340-1217</a>	165
	25.4	17.5	<a href="#">340-1217M</a>	185

Models [340-0217M](#) and [340-1217M](#) are mounted into black anodized aluminium ring  $\varnothing 25.4$  mm and clear aperture  $\varnothing 17$  mm.

### MOUNTING SUGGESTION



### HOUSING ACCESSORIES

Kinematic Mirror and Beamsplitter Mount 840-0020



COATINGS

WINDOWS & FILTERS

MIRRORS

LENSES

PRISMS

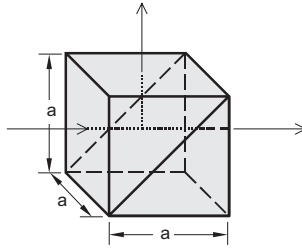
POLARIZING OPTICS

UV & IR OPTICS

## NON-POLARIZING BROADBAND CUBE BEAMSPLITTERS

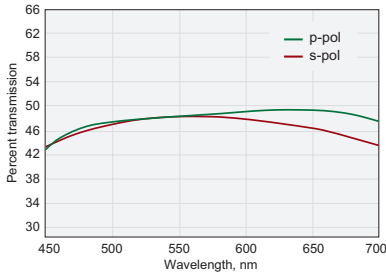
### FEATURES

- › Cemented for low power applications
- › Typical damage threshold:  
>0.1 J/cm<sup>2</sup>, 10 ns, 10 Hz at 1064 nm
- › Four sides broadband antireflection coated:  
R < 1% @ 450–700 nm or R < 1% @ 750–1100 nm



### SPECIFICATIONS

Material	BK7
Size tolerance	±0.25 mm
Surface quality	40 – 20 scratch & dig
Surface flatness	λ/4 at 633 nm
Beam deviation	<5 arcmin
Clear aperture	>80% of size
Absorption	<10%
Reflection/Transmission ratio	50/50 ± 5%
Transmission	T <sub>p</sub> = T <sub>s</sub> = 45 ± 5%

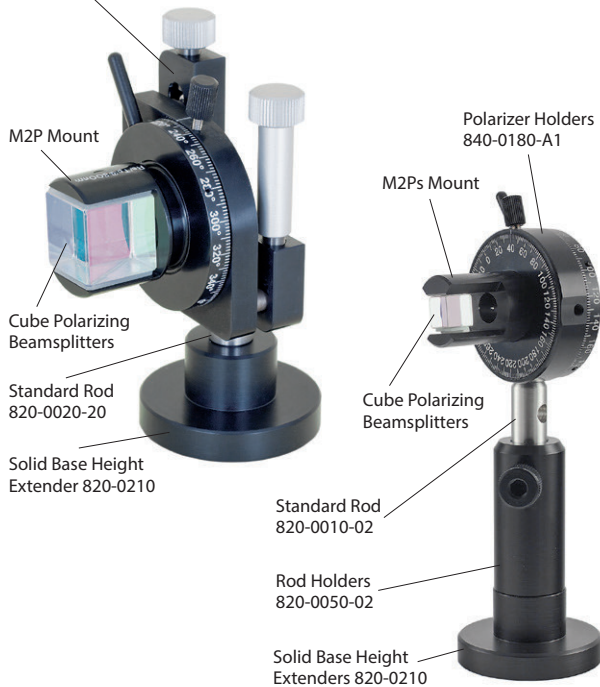


Typical transmission curve @ 450–700 nm

Operating wavelength, nm	Size, mm	Unmounted		Mounted	
		Catalogue number	Price, EUR	Catalogue number	Price, EUR
450–700	10 × 10	351-0107	135	351-0107-M2Ps	185
450–700	15 × 15	351-0157	150	351-0157-M2Ps	205
450–700	20 × 20	351-0207	155	351-0207-M2P	225
450–700	25 × 25	351-0257	170	351-0257-M2P	245
750–1100	10 × 10	351-0108	135	351-0108-M2Ps	185
750–1100	15 × 15	351-0158	150	351-0158-M2Ps	205
750–1100	20 × 20	351-0208	155	351-0208-M2P	225
750–1100	25 × 25	351-0258	170	351-0258-M2P	245

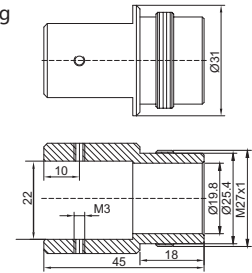
### MOUNTING SUGGESTION

Adjustable Polarizer Holder of Side Driver 840-0195



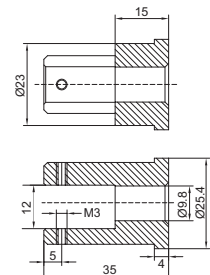
### MOUNTING

Example of M2P mount for Cube Polarizing Beamsplitters of 20×20 mm standard dimensions.



M2P mount can be used with 840-0180, 840-0195, 840-0020.

Example of M2Ps mount for Cube Polarizing Beamsplitters of 10×10 mm dimensions.



M2Ps mount can be used with 840-0180, 840-0020.

Drawings of M2P and M2Ps for prisms of other dimensions are available on request.