

Non-polarizing Laser Cube Beamsplitters

- All-dielectric coatings optimized to be insensitive to polarization at design wavelengths
- BK7 cube material - polished to $\lambda/4$
- Available in a range of laser wavelengths
- Highest performance - negligible absorption
- 5mm beamsplitter cubes available for fiber optic applications
- Standard cubes from 5 to 20mm

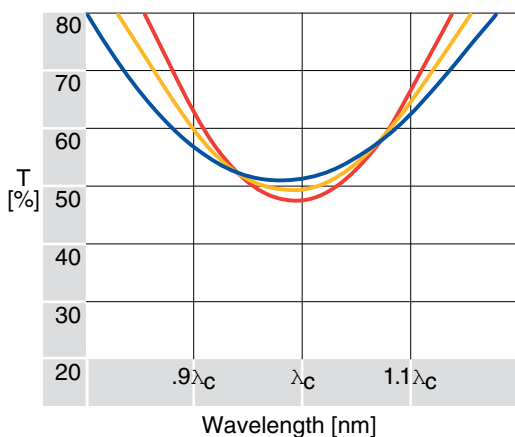


The all-dielectric coatings for these cube beamsplitters are largely insensitive to the polarization state of the incoming beam. The coatings have been designed to hold both the s- and p-polarization components to the same ratio of reflection-to-transmission over a specific laser wavelength region. The graph shows a typical reflectivity curve for the 633nm wavelength. At all the design wavelengths the s-reflectance equals the p-reflectance within $\pm 3\%$, while both the reflectance and the transmittance equal 50% within $\pm 5\%$.

Non-polarizing beamsplitters are available for other wavelength regions. Please call.

These beamsplitters are made from optical grade BK7. The faces are all polished flat to $\lambda/4$ and two like prisms are cemented to form a cube. Both pairs of sides are parallel to within 5arcmin. The four outer faces are all Anti-Reflection coated.

Four standard sizes are offered: 5,10,15 and 20mm. Larger sizes are available on request.



NON-POLARIZING BEAMSPLITTER COATING

P-POL ————
 AVG-POL ————
 S-POL ————

Specifications & Tolerances

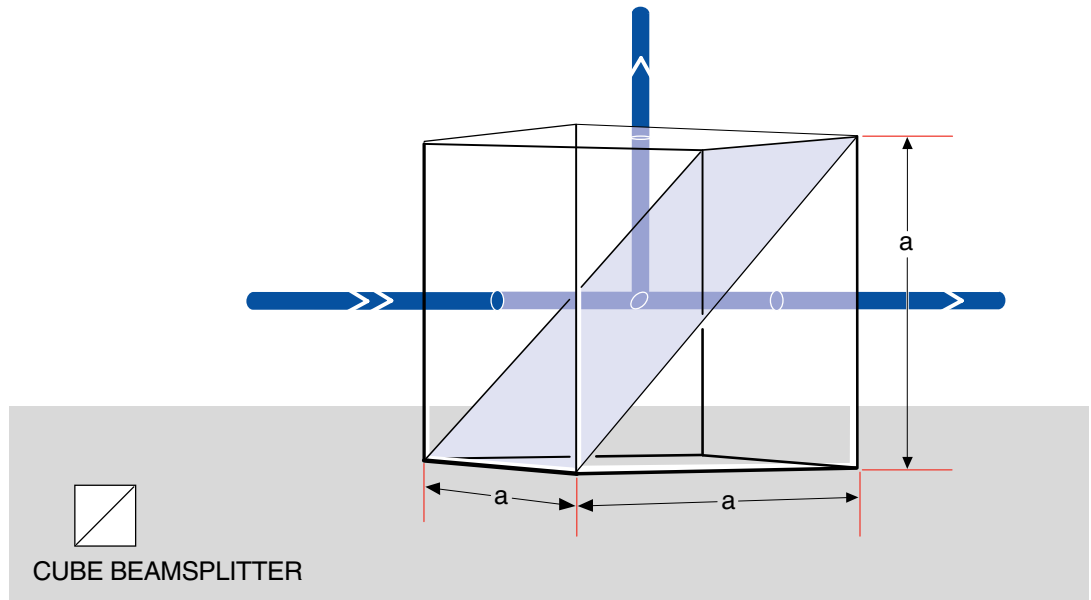
$R_s = R_p \pm 3\%$
 $R_{av} = T_{av} = 50\% \pm 5\%$
 Surface flatness: $\lambda/4$
 Surface quality: 40-20
 Dimensions: $\pm 0.2\text{mm}$
 Beam deviation: $\leq 10\text{arcmin}$
 Material: BK7, grade A
 Damage Threshold: $< 100\text{mJ/cm}^2 @ 10\text{ns}$ pulse

In general, polarization changes in an optical beam whenever a non-normal reflection occurs. In classical optics this usually was of little concern, but laser beams are often quite sensitive to the exact state of polarization of the beam.

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Non-polarizing Laser Cube Beamsplitters

Wavelength Range (nm)	Cube Side, a (mm)	Material	Surface Flatness	Transmission (P/S %)	Price	PART NUMBER
266	10	SFS	$\lambda/4$	50 ± 10		039-1000
266	15	SFS	$\lambda/4$	50 ± 10		039-1005
266	20	SFS	$\lambda/4$	50 ± 10		039-1010
355	10	SFS	$\lambda/4$	50 ± 7		039-1015
355	15	SFS	$\lambda/4$	50 ± 7		039-1020
355	20	SFS	$\lambda/4$	50 ± 7		039-1025
405	10	BK7	$\lambda/4$	50 ± 7		039-1030
405	15	BK7	$\lambda/4$	50 ± 7		039-1035
405	20	BK7	$\lambda/4$	50 ± 7		039-1040
488	10	BK7	$\lambda/4$	50 ± 5		039-1045
488	15	BK7	$\lambda/4$	50 ± 5		039-1050
488	20	BK7	$\lambda/4$	50 ± 5		039-1055
514.5	10	BK7	$\lambda/4$	50 ± 5		039-1060
514.5	15	BK7	$\lambda/4$	50 ± 5		039-1065
514.5	20.0	BK7	$\lambda/4$	50 ± 5		039-1070
532	10.0	BK7	$\lambda/4$	50 ± 5		039-1075
532	15.0	BK7	$\lambda/4$	50 ± 5		039-1080
532	20.0	BK7	$\lambda/4$	50 ± 5		039-1085
632.8	5.0	BK7	$\lambda/4$	50 ± 5		039-1105
632.8	10.0	BK7	$\lambda/4$	50 ± 5		039-1110
632.8	15.0	BK7	$\lambda/4$	50 ± 5		039-1120
632.8	20.0	BK7	$\lambda/4$	50 ± 5		039-1130
670	10.0	BK7	$\lambda/4$	50 ± 5		039-1140
670	15.0	BK7	$\lambda/4$	50 ± 5		039-1150
670	20.0	BK7	$\lambda/4$	50 ± 5		039-1160
780	10.0	BK7	$\lambda/4$	50 ± 5		039-1170
780	15.0	BK7	$\lambda/4$	50 ± 5		039-1180
780	20.0	BK7	$\lambda/4$	50 ± 5		039-1190

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Non-polarizing Laser Cube Beamsplitters (continued)

Wavelength Range (nm)	Cube Side, a (mm)	Material	Surface Flatness	Transmission (P/S %)	Price	PART NUMBER
830	10.0	BK7	$\lambda/4$	50 \pm 5		039-1220
830	15.0	BK7	$\lambda/4$	50 \pm 5		039-1230
830	20.0	BK7	$\lambda/4$	50 \pm 5		039-1240
1064	10.0	BK7	$\lambda/4$	50 \pm 5		039-1350
1064	15.0	BK7	$\lambda/4$	50 \pm 5		039-1355
1064	20.0	BK7	$\lambda/4$	50 \pm 5		039-1360
1300	10.0	BK7	$\lambda/4$	50 \pm 5		039-1250
1300	15.0	BK7	$\lambda/4$	50 \pm 5		039-1260
1300	20.0	BK7	$\lambda/4$	50 \pm 5		039-1270
1550	10.0	BK7	$\lambda/4$	50 \pm 5		039-1280
1550	15.0	BK7	$\lambda/4$	50 \pm 5		039-1290
1550	20.0	BK7	$\lambda/4$	50 \pm 5		039-1330

Larger non-polarizing cube beamsplitters are available on request.

The Non-polarizing Beamsplitters described here should be used in any situation where a change in the polarization state of the beam will have an undesired or unpredictable result. Please call if you need larger sizes or optimization at other wavelengths.



OptoSigma has a broad range of products with most available from stock and can be shipped to you the same day that your order is placed.

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