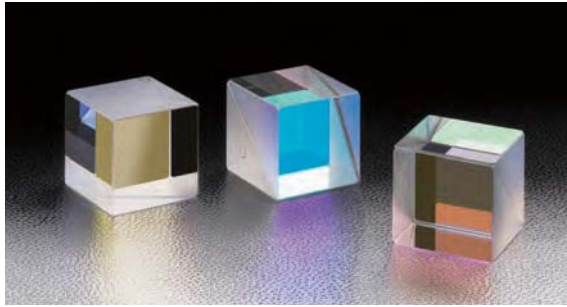


Dielectric Cube Half Mirrors | CSMH

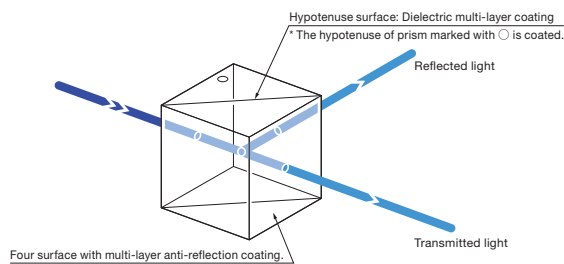
RoHS

Dielectric cube half mirrors consist of two right angle prisms. One of them is coated with dielectric multi-layer partial reflection coating on the hypotenuse face.

- Half mirror divides input beam into reflectance and transmittance at a 1:1 ratio. A beamsplitter with R:T (1:1 ratio) is called "Half Mirror".
- Four surfaces of the cube are coated with multi-layer anti-reflection coatings.
- The loss of input beam is minimized as there is no absorption from dielectric coating. However the reflection to transmittance ratio of these dielectric cube half mirrors vary depending on wavelength, polarization and the incident angle of input beam.

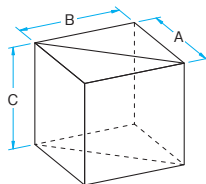


Schematic



Outline Drawing

(in mm)



- Tolerance
- A ± 0.2
- B ± 0.2
- C ± 0.1

Specifications

Material	BK7
Surface flatness of substrate	$\lambda/4$
Beam Deviation	$<5'$
Coating	Hypotenuse surface: Dielectric multi-layer coating Four surfaces: Multi-layer anti-reflection coating
Incident angle	0°
Divergence ratio (reflectance : transmittance)	1 : 1
Polarization of the incident beam	Unpolarized light or 45 degrees Linear polarization or circular polarization
Laser Damage Threshold	$0.3J/cm^2$ (Laser pulse width 10ns, repetition frequency 20Hz)
Surface Quality (Scratch-Dig)	20-10
Clear aperture	85% of circle to actual dimension (80% of actual aperture for 5 and 7mm dimension (A=B=C) products.)

Guide

- ▶ Please contact our Sales Team for customized products. (Customized on size, wavelength or R:T, etc.)
- ▶ For a guarantee in reflected wavefront error or transmitted wavefront error, please contact our Sales Division.

Attention

- ▶ Input beam from the prism side is indicated by a "O". Reflection and refraction over wavelength will differ when light input is applied from the opposite side of the prism.
- ▶ The transmittance curves are based on actual measurements and may vary with manufacturing lots.
- ▶ The surface flatness is the reflected wavefront distortion of the surface before coating.
- ▶ Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.

Specifications

Part Number	Wavelength Range [nm]	A=B=C [mm]	Transmittance (The average value of the P-Polarization and the S-Polarization) [%]
CSMH-10-405	390 - 410	10	Average 50 ± 3
CSMH-12.7-405	390 - 410	12.7	Average 50 ± 3
CSMH-15-405	390 - 410	15	Average 50 ± 3
CSMH-20-405	390 - 410	20	Average 50 ± 3
CSMH-25-405	390 - 410	25	Average 50 ± 3
CSMH-30-405	390 - 410	30	Average 50 ± 3
CSMH-05-550	400 - 700	5	Average 50 ± 5
CSMH-07-550	400 - 700	7	Average 50 ± 5
CSMH-10-550	400 - 700	10	Average 50 ± 5
CSMH-12.7-550	400 - 700	12.7	Average 50 ± 5
CSMH-15-550	400 - 700	15	Average 50 ± 5
CSMH-20-550	400 - 700	20	Average 50 ± 5
CSMH-25-550	400 - 700	25	Average 50 ± 5
CSMH-30-550	400 - 700	30	Average 50 ± 5
CSMH-40-550	400 - 700	40	Average 50 ± 5
CSMH-50-550	400 - 700	50	Average 50 ± 5
CSMH-10-800	750 - 850	10	Average 50 ± 5
CSMH-12.7-800	750 - 850	12.7	Average 50 ± 5
CSMH-15-800	750 - 850	15	Average 50 ± 5
CSMH-20-800	750 - 850	20	Average 50 ± 5
CSMH-25-800	750 - 850	25	Average 50 ± 5
CSMH-30-800	750 - 850	30	Average 50 ± 5
CSMH-10-1400	1300 - 1550	10	Average 50 ± 5
CSMH-12.7-1400	1300 - 1550	12.7	Average 50 ± 5
CSMH-20-1400	1300 - 1550	20	Average 50 ± 5

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Half Mirror Cube

Half Mirror Plate

Application Note

Beamsplitters

Harmonic Separator

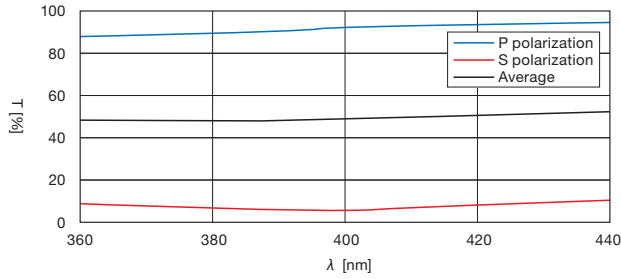
Beam Samplers

Others

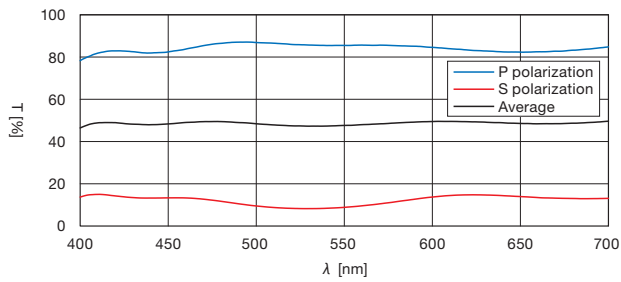
Typical Transmittance Data

T: Transmission

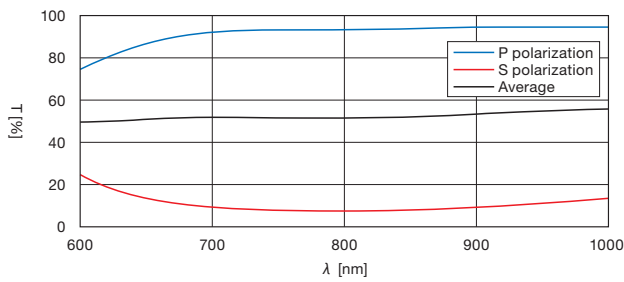
CSMH-405



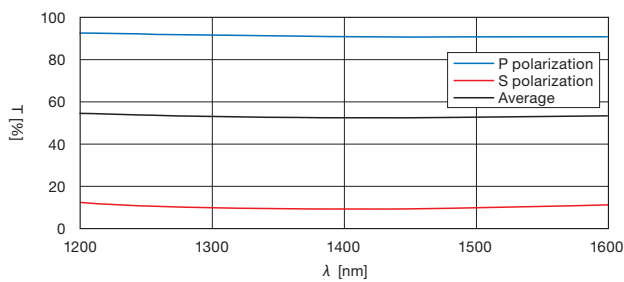
CSMH-550



CSMH-800



CSMH-1400



Compatible Optic Mounts

PLH-25, -40 / KKD-25PHRO, -40PHRO, -60PHRO / SHA-60RO



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