

Non-polarizing Cube Half Mirrors

NPCHB

RoHS

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Mirrors

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Multi-Element Optics

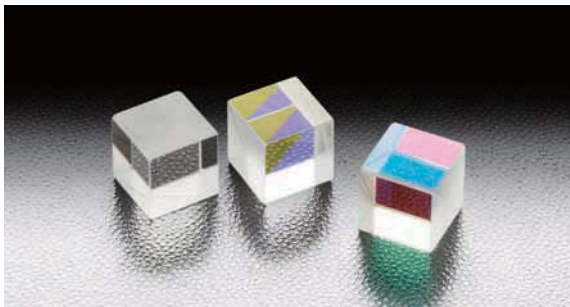
Prisms

Substrates & Windows

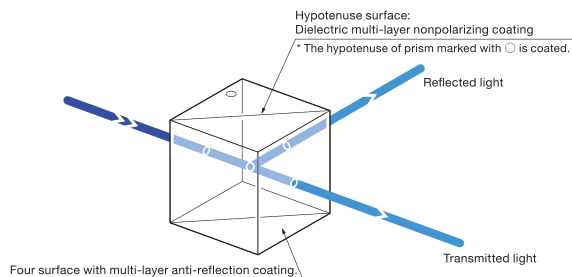
Holder & Vibration isolator

This is a half mirror that has an even 1:1 ratio of reflection and transmission in both linear polarized light and normal light source.

- The reflection to transmission ratio is 1:1 regardless of the polarization condition from the input beam.
- Depending on polarization, the reflection to transmission ratio of these products does not vary.
- The laser line corresponds to various wavelengths.
- Narrowband multi-layer AR coatings are applied to the four surfaces of the cube.
- Because the effective bandwidth of a non-polarizing coat is narrow, these products are designed for a single wavelength.

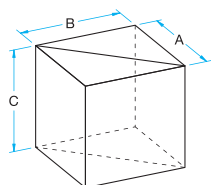


Schematic



Outline Drawing

(in mm)



- Tolerance
A ± 0.2
B ± 0.2
C ± 0.1

Specifications

Material	BK7, Synthetic fused silica
Surface flatness of substrate	$\lambda/4$
Beam Deviation	$<5'$
Coating	Hypotenuse Surface: Dielectric multi-layer nonpolarizing coating Four Surfaces: Multi-layer anti-reflection coating
Incident angle	0°
Divergence ratio (reflectance : transmittance)	1 : 1
Laser Damage Threshold	$0.3\text{J}/\text{cm}^2$ (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 International Sales Division for customized products. (Customized on size, wavelength or R:T, etc.) [Reference](#) C063
- ▶ To produce non-polarizing beam splitter (plate type) is also possible.
- ▶ For a guarantee in reflected wavefront error or transmitted wavefront error, please contact our International Sales Division.

Attention

- ▶ Input beam from the prism side is indicated by a $\odot$.
- ▶ Phase retardation of light input will not be preserved. Use a waveplate for phase compensation.
- ▶ Wavelength dispersion on transmitted and reflected light derives from refraction index and glass thickness. And also, when diverging or introducing a focusing beam, chromatic aberration or spherical aberration may occur.

266 – 532nm

Part Number	Wavelength Range [nm]	A=B=C [mm]	Material	Transmittance [%]
NPCHB-10-2660	266	10	Synthetic fused silica	50 ± 10
NPCHB-15-2660	266	15	Synthetic fused silica	50 ± 10
NPCHB-20-2660	266	20	Synthetic fused silica	50 ± 10
NPCHB-10-3550	355	10	Synthetic fused silica	50 ± 7
NPCHB-15-3550	355	15	Synthetic fused silica	50 ± 7
NPCHB-20-3550	355	20	Synthetic fused silica	50 ± 7
NPCHB-10-4050	405	10	BK7	50 ± 7
NPCHB-15-4050	405	15	BK7	50 ± 7
NPCHB-20-4050	405	20	BK7	50 ± 7
NPCHB-10-4880	488	10	BK7	50 ± 5
NPCHB-15-4880	488	15	BK7	50 ± 5
NPCHB-20-4880	488	20	BK7	50 ± 5
NPCHB-10-5145	514.5	10	BK7	50 ± 5
NPCHB-15-5145	514.5	15	BK7	50 ± 5
NPCHB-20-5145	514.5	20	BK7	50 ± 5
NPCHB-10-5320	532	10	BK7	50 ± 5
NPCHB-15-5320	532	15	BK7	50 ± 5
NPCHB-20-5320	532	20	BK7	50 ± 5

Compatible Optic Mounts

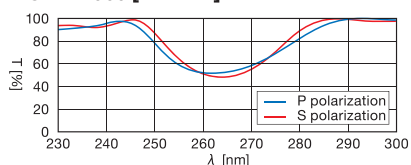
PH-25, -40 / PH-25HRO, -40PHRO

Cube Type: Nonpolarizing 632.8 – 1550nm				
Part Number	Wavelength Range [nm]	A=B=C [mm]	Material	Transmittance [%]
NPCHB-05-6328	632.8	5	BK7	50±5
NPCHB-10-6328	632.8	10	BK7	50±5
NPCHB-15-6328	632.8	15	BK7	50±5
NPCHB-20-6328	632.8	20	BK7	50±5
NPCHB-10-6700	670	10	BK7	50±5
NPCHB-15-6700	670	15	BK7	50±5
NPCHB-20-6700	670	20	BK7	50±5
NPCHB-10-7800	780	10	BK7	50±5
NPCHB-15-7800	780	15	BK7	50±5
NPCHB-20-7800	780	20	BK7	50±5
NPCHB-10-8300	830	10	BK7	50±5
NPCHB-15-8300	830	15	BK7	50±5
NPCHB-20-8300	830	20	BK7	50±5
NPCHB-10-10640	1064	10	BK7	50±5
NPCHB-15-10640	1064	15	BK7	50±5
NPCHB-20-8300	1064	20	BK7	50±5
NPCHB-10-13000	1300	10	BK7	50±5
NPCHB-15-13000	1300	15	BK7	50±5
NPCHB-20-13000	1300	20	BK7	50±5
NPCHB-10-15500	1550	10	BK7	50±5
NPCHB-15-15000	1550	15	BK7	50±5
NPCHB-20-15000	1550	20	BK7	50±5

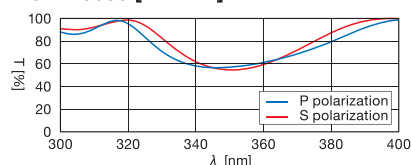
Typical Transmittance Data

T: Transmission

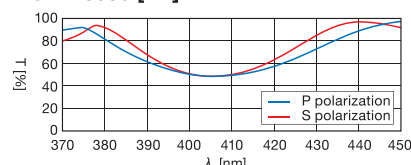
NPCHB-2660 [YAG4ω]



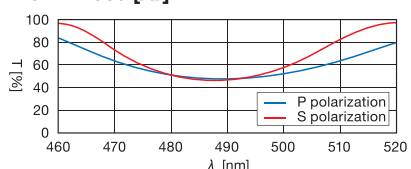
NPCHB-3550 [YAG3ω]



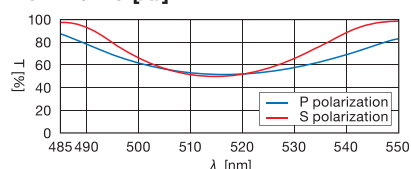
NPCHB-3550 [LD]



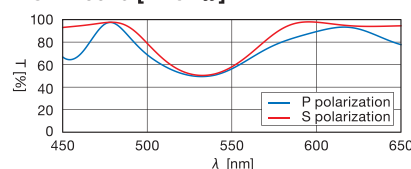
NPCHB-4880 [Ar]



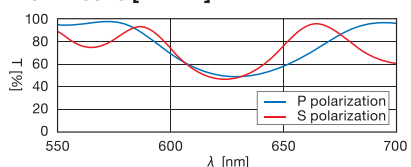
NPCHB-5145 [Ar]



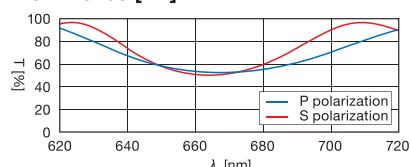
NPCHB-5320 [YAG2ω]



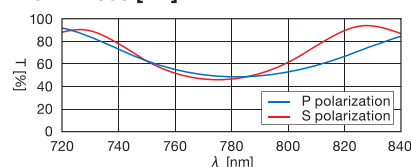
NPCHB-6328 [He-Ne]



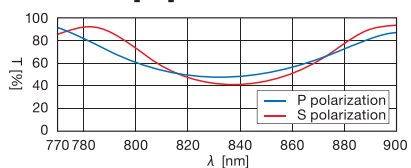
NPCHB-6700 [LD]



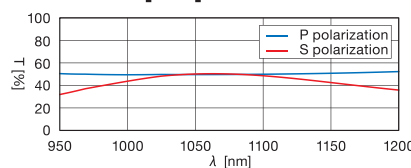
NPCHB-7800 [LD]



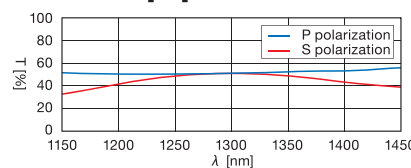
NPCHB-8300 [LD]



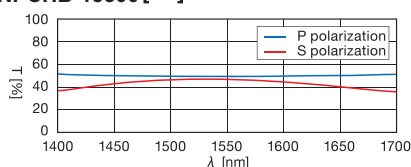
NPCHB-10640 [YAG]



NPCHB-13000 [LD]



NPCHB-15500 [LD]



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