Laser Line Plate Half Mirrors | BDHB

RoHS

**Laser line plate mirrors are part of plate beamsplitters that are optically coated with dielectric multi-layer on the surface of optical parallels or wedged substrates.
The other surfaces are coated with multi-layer anti-reflection.**

- Half mirror divides input beam to reflectance and transmittance in 1:1. A beamsplitter of R:T=1:1 is called “Half Mirror”.
- Any loss from the input beams on this product is minimized because dielectric coating has no absorption properties. However, the input ratio of reflection to transmission depends on wavelength, polarization and incident of angle of input beam.
- Plate beamsplitters have beam deviations on transmission and ghost on rear surface reflections. Wedged substrates are used to prevent ghost.

Specifications

Material	BK7, Synthetic fused silica, CaF_2
Surface Flatness	λ/10 (PSMH-157 is Polished)
Coating	Front surface: Dielectric multi-layer partial refection coating Rear surface: Multi-layer anti-reflection coating
Incident angle	45°
Divergence ratio (reflectance : transmittance)	1 : 1
Surface Quality (Scratch–Dig)	10–5 (PSMH-157: 40–20)
Clear aperture	90% of actual aperture

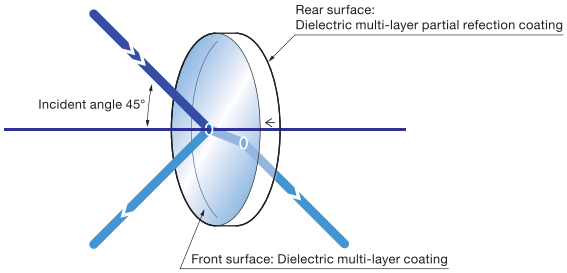
Guide

- Please contact our International Sales Division for customized products. (Customized on size, wavelength or R:T, etc.) Reference C063
- We also have ultra-wideband, broadband and cube types.
- For a guarantee in reflected wavefront error or transmitted wavefront error, please contact our International Sales Division.
- On most thickness surfaces, there is a thickness direction arrow marked for wedged types.

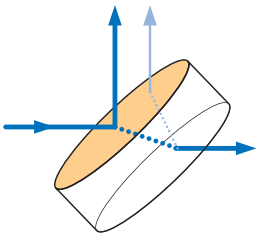
Attention

- Should these products do not function as a half mirror, please check the polarization characteristics of the light source. Do note that LD laser is linear in polarization.
- The beam deviation at transmission of a wedged beamsplitter is large compared to a one made of optical parallel.
- The amount of beam deviation of a beamsplitter depends on the thickness of the substrate and the wavelength or the incident angle of the input beam.
- Transmission curves are based on actual measurements and may be different with manufacturing lots.
- Surface flatness is the reflected wavefront distortion of the surface prior to coating.
- Be sure to wear laser safety goggles when checking optical path and adjusting optical axis.

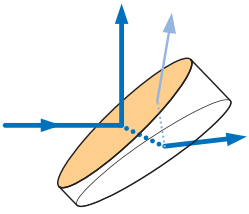
Schematic



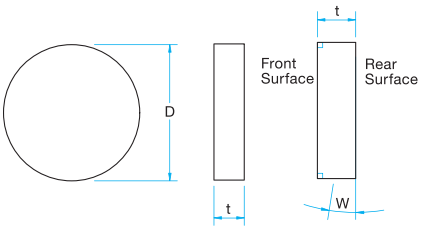
Optical Parallel



Wedged Substrate



Outline Drawing (in mm)



●Tolerance
Diameter $D^{0}_{-0.1}$
Thickness t ±0.1

Compatible Optic Mounts

GBH-30S, -50S / KMH-MP30-NL, MP50-NL

Laser Line Plate Half Mirrors | BDHB

- Application Systems
- Machine Vision
- Manual Positions
- Motion Control Products
- Optical & Mirror Holder
- F A Parts
- Measurement &Control
- FA Electrical Parts
- Tool & Measure
- Cleanroom & AntiStatic
- Index

Mirrors
Beamsplitters
Filters
Polarizers
Lenses
Multi-Element Optics
Prisms
Substrates & Windows
Holder & Vibration isolator

Laser Line

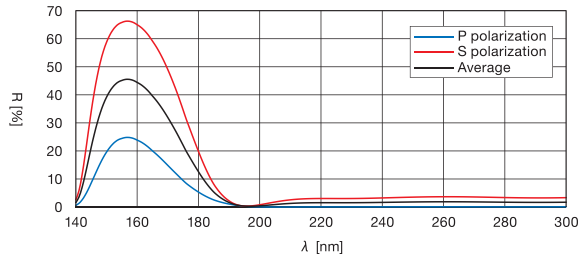
Part Number	Wavelength Range [nm]	Laser Type	Diameter D [mm]	Thickness t [mm]	Material	Parallelism	Reflectance:R Transmittance:T [%]	Laser Damage Threshold* [J/cm²]
BDHB-30C03-P-157	157	F_2	ϕ30	3	CaF_2	<3′	R=40±10	0.5
BDHB-50C05-P-157	157	F_2	ϕ50	5	CaF_2	<3′	R=40±10	0.5
BDHB-30C03-10-193	193	Ar*F	ϕ30	3	Synthetic fused silica	<5″	T=45±5	1
BDHB-30C05-10W-193	193	Ar*F	ϕ30	5	Synthetic fused silica	1°±5′	T=45±5	1
BDHB-50C05-10-193	193	Ar*F	ϕ50	5	Synthetic fused silica	<5″	T=45±5	1
BDHB-50C08-10W-193	193	Ar*F	ϕ50	8	Synthetic fused silica	1°±5′	T=45±5	1
BDHB-30C03-10-248	248.4	Kr*F	ϕ30	3	Synthetic fused silica	<5″	T=50±3	2
BDHB-30C05-10W-248	248.4	Kr*F	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-50C05-10-248	248.4	Kr*F	ϕ50	5	Synthetic fused silica	<5″	T=50±3	2
BDHB-50C08-10W-248	248.4	Kr*F	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-30C03-10-266	266	YAG4ω	ϕ30	3	Synthetic fused silica	<5″	T=50±3	2
BDHB-30C05-10W-266	266	YAG4ω	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-50C05-10-266	266	YAG4ω	ϕ50	5	Synthetic fused silica	<5″	T=50±3	2
BDHB-50C08-10W-266	266	YAG4ω	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-30C03-10-308	308	Xe*Cl	ϕ30	3	Synthetic fused silica	<5″	T=50±3	2
BDHB-30C05-10W-308	308	Xe*Cl	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-50C05-10-308	308	Xe*Cl	ϕ50	5	Synthetic fused silica	<5″	T=50±3	2
BDHB-50C08-10W-308	308	Xe*Cl	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3	2
BDHB-30C03-10-325	325	He-Cd	ϕ30	3	Synthetic fused silica	<5″	T=50±3 (S polarization)	2
BDHB-30C05-10W-325	325	He-Cd	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3 (S polarization)	2
BDHB-50C05-10-325	325	He-Cd	ϕ50	5	Synthetic fused silica	<5″	T=50±3 (S polarization)	2
BDHB-50C08-10W-325	325	He-Cd	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3 (S polarization)	2
BDHB-30C03-10-352	352	Xe*F	ϕ30	3	Synthetic fused silica	<5″	T=50±3	5
BDHB-30C05-10W-352	352	Xe*F	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3	5
BDHB-50C05-10-352	352	Xe*F	ϕ50	5	Synthetic fused silica	<5″	T=50±3	5
BDHB-50C08-10W-352	352	Xe*F	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3	5
BDHB-30C03-10-355	355	YAG3ω	ϕ30	3	Synthetic fused silica	<5″	T=50±3	5
BDHB-30C05-10W-355	355	YAG3ω	ϕ30	5	Synthetic fused silica	1°±5′	T=50±3	5
BDHB-50C05-10-355	355	YAG3ω	ϕ50	5	Synthetic fused silica	<5″	T=50±3	5
BDHB-50C08-10W-355	355	YAG3ω	ϕ50	8	Synthetic fused silica	1°±5′	T=50±3	5
BDHB-30C03-10-405	390 – 410	LD	ϕ30	3	BK7	<5″	T=50±3	2.1
BDHB-30C05-10W-405	390 – 410	LD	ϕ30	5	BK7	1°±5′	T=50±3	2.1
BDHB-50C05-10-405	390 – 410	LD	ϕ50	5	BK7	<5″	T=50±3	2.1
BDHB-50C08-10W-405	390 – 410	LD	ϕ50	8	BK7	1°±5′	T=50±3	2.1
BDHB-30C03-10-1064	1064	YAG	ϕ30	3	BK7	<5″	T=50±3	20
BDHB-30C05-10W-1064	1064	YAG	ϕ30	5	BK7	1°±5′	T=50±3	20
BDHB-50C05-10-1064	1064	YAG	ϕ50	5	BK7	<5″	T=50±3	20
BDHB-50C08-10W-1064	1064	YAG	ϕ50	8	BK7	1°±5′	T=50±3	20

*Laser pulse width 10ns (PSMH-157: 20ns), repetition frequency 20Hz

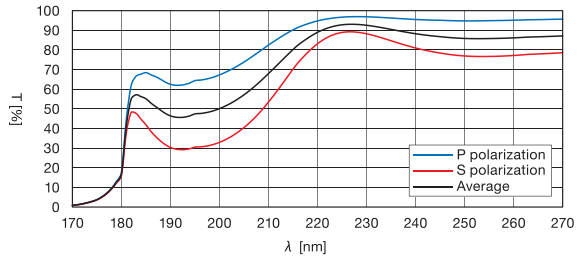
Typical Reflectance Data & Typical Transmittance Data

R: Reflectance T: Transmission

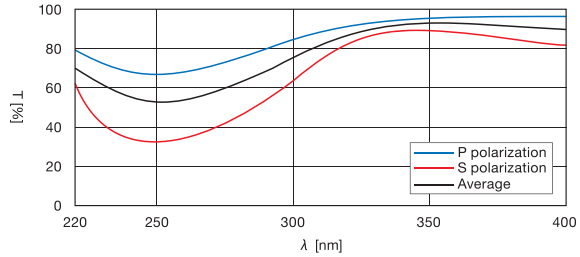
BDHB-157 [F_2]



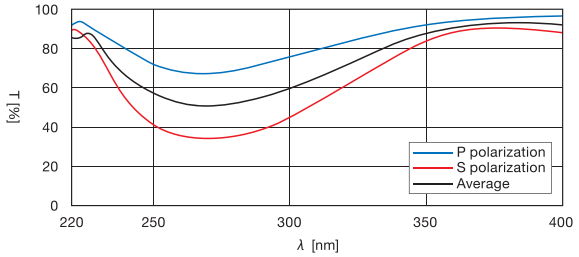
BDHB-193 [Ar*F]



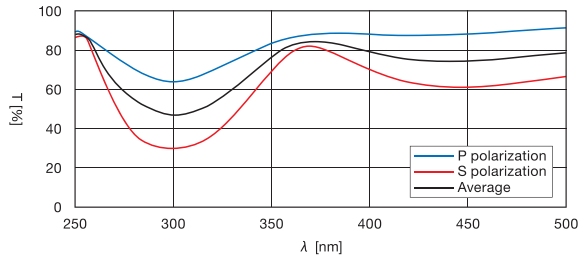
BDHB-248 [Kr*F]



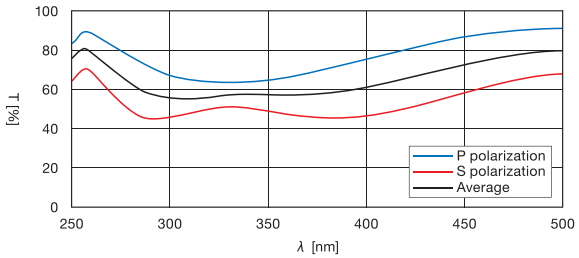
BDHB-266 [YAG4ω]



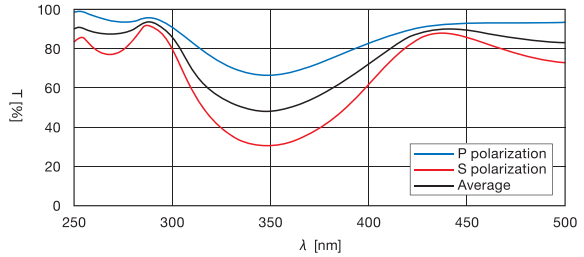
BDHB-308 [Xe*Cl]



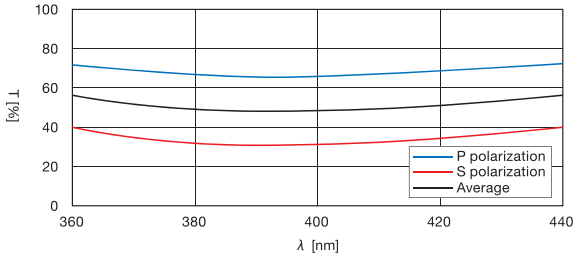
BDHB-325 [He-Cd]



BDHB-352 [Xe*F]・355 [YAG3ω]



BDHB-405 [LD]



BDHB-1064 [YAG]