

Variable Beamsplitter Light path corrector

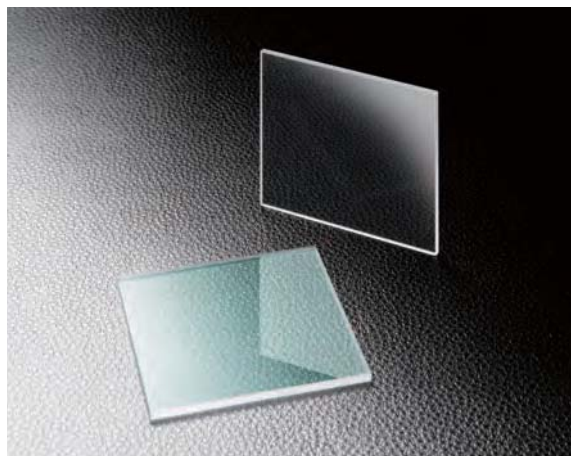
VBS
WSQNA/WBNA

RoHS
RoHS

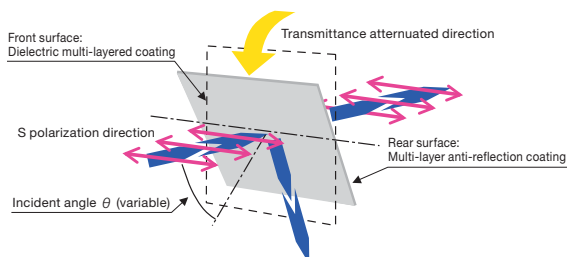
With a variable beamsplitter, the incident angle of a laser can be changed. The (R:T) ratios can also be modified.

This is commonly used to adjust the light intensity of the laser without a variable adjustment of the light intensity or the laser to be stabilized.

- The variable beamsplitter has a dielectric multilayer coating which has excellent durability and light resistance.
- The beam shift caused by the tilt of the beamsplitter can be removed by using a correcting plate. (See how to use)
- It can be used for arbitrary polarization. However, the transmittance characteristic depends on the polarization.

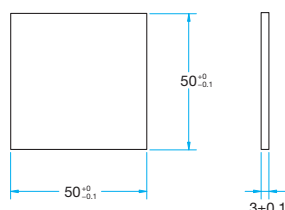


Schematic



Outline Drawing

(in mm)



Specifications

| | |
|----------------------------------|---|
| Material | BK7, Synthetic fused silica |
| Surface Flatness | λ |
| Parallelism | <5" |
| Coating | VBS Front surface: Dielectric multi-layer Coating Rear surface: Multi-layer anti-reflection coating WBMA, WSQMA Both surfaces: Multi-layer anti-reflection coating |
| Surface Quality (Scratch-Dig) | 10-5 |
| Clear aperture | Circle that internally connected to 90% of the side length |
| Effective beam incident diameter | Ellipsoidal 30x43mm (Angle of inclination) |

Guide

▶ Different size, wavelength and deviation not mentioned on-line or in our catalog are available as custom product upon request.

- ▶ We offer the most comprehensive range of beamsplitter holders and stages to select from. Let us know the angle of your choice.
- ▶ This variable attenuator (model SVAB) can be used in a system and is available.



Attention

- ▶ When using with high power laser, make sure to execute at the end edge of the reflected light.
- ▶ The reflectance properties of the optics may change in a high temperature environment.
- ▶ When adjusting the transmittance, the incident angle may change and cause the light path to shift. To correct this, please use the light path corrector (model WSQNA/WBNA)
- ▶ For a large beam size of 30mm diameter or larger and used it at a high inclination level, the beam can be cut at the reflected area.
- ▶ For "P" polarization use, make sure that the incident angle is at 45 degrees or more.

Variable beamsplitter

| Part Number | Wavelength Range [nm] | Transmittance of S polarization ($\theta=0^\circ$) [%] | Transmittance of S polarization ($\theta=45^\circ$) [%] | Material | Laser Damage Threshold* [J/cm ²] |
|------------------|-----------------------|--|---|------------------------|--|
| VBS-50S03-1-266 | 266 | >90 | <5 | Synthetic fused silica | 1 |
| VBS-50S03-1-355 | 355 | >93 | <5 | Synthetic fused silica | 1 |
| VBS-50S03-1-532 | 532 | >95 | <5 | BK7 | 2.5 |
| VBS-50S03-1-1064 | 1064 | >95 | <5 | BK7 | 3.5 |

* Laser pulse width 10ns, repetition frequency 20Hz

Light path corrector

| Part Number | Wavelength Range [nm] | Transmittance of S polarization ($\theta=0^\circ - 45^\circ$) [%] | Material | Laser Damage Threshold* [J/cm ²] |
|-------------------------|-----------------------|---|------------------------|--|
| WSQNA-50S03-1-266-0/45D | 266 | Average 97 | Synthetic fused silica | 1 |
| WSQNA-50S03-1-355-0/45D | 355 | Average 97 | Synthetic fused silica | 1 |
| WBNA-50S03-1-532-0/45D | 532 | Average 98 | BK7 | 2.5 |
| WBNA-50S03-1-1064-0/45D | 1064 | Average 98 | BK7 | 3.5 |

* Laser pulse width 10ns, repetition frequency 20Hz

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Half Mirror Plate

Application Note

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Beam Samplers

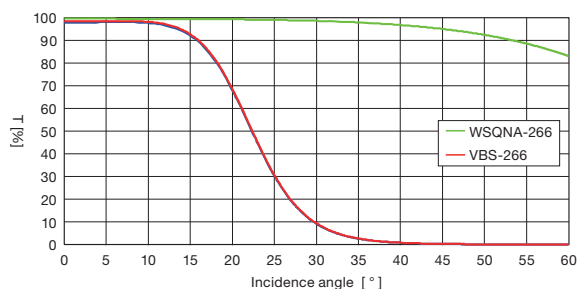
Others



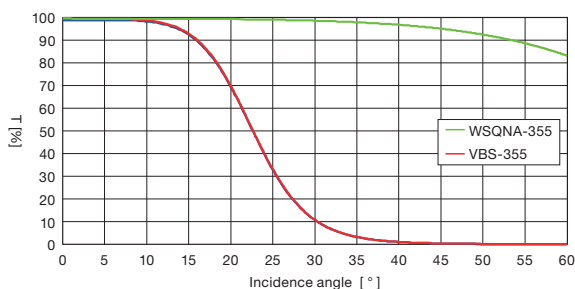
Typical Transmittance Data

T: Transmission (S polarization)

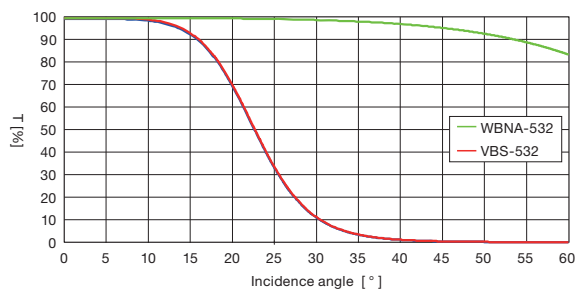
VBS-266 / WSQNA-266



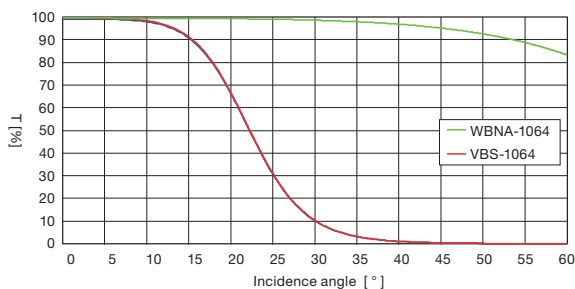
VBS-355 / WSQNA-355



VBS-532 / WBNA-532



VBS-1064 / WBNA-1064

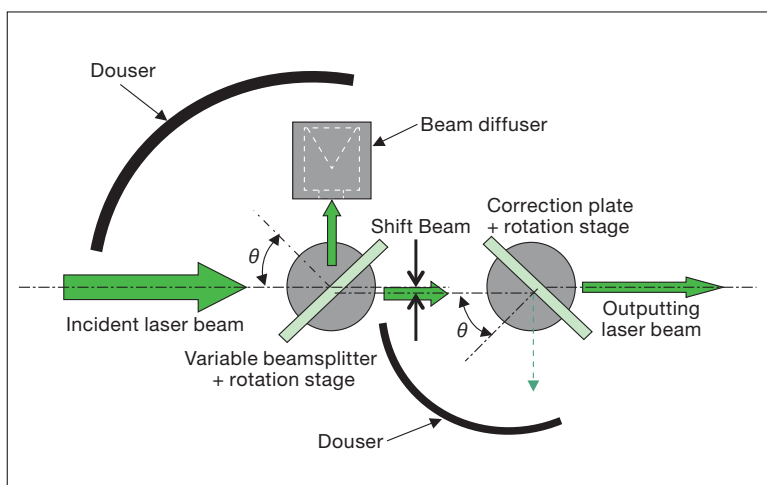


Sample of use

The variable beam splitter can be used individually. When modifying the incident angle, optics thickness and its refractive properties, a shift may occur in the light path. To reduce this shift, we highly recommend a light path corrector. Please see image below.

- Place the variable beamsplitter onto a rotation stage to allow an angle adjustment.
- Install the light path corrector onto a rotating stage.
- Position the light path corrector at a similar angle with the variable beamsplitter on an opposite side.
- If the reflected light of the variable beamsplitter is not used, make sure to place a light cut-off material or a beam diffuser at the edge-end of the light.
- The power of the reflected light from the light path corrector must be cut off at the edge-end of the light.

For part structure, please contact our International Sales Division.



Compatible Optic Mounts

CHA-60, -60F

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- Optics & Optical Coatings**
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