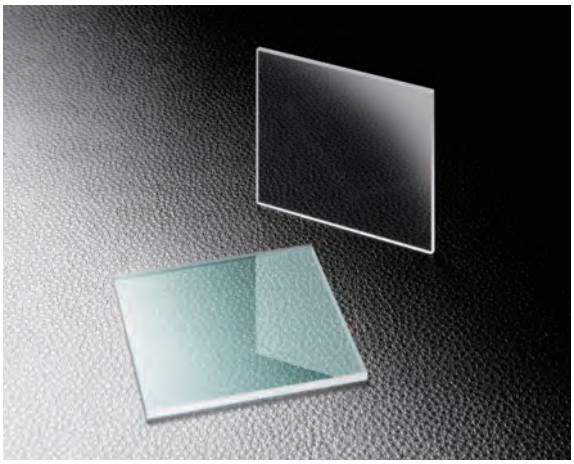
Variable Beamsplitter
Light path corrector

VBS
WSQNA/WBNA

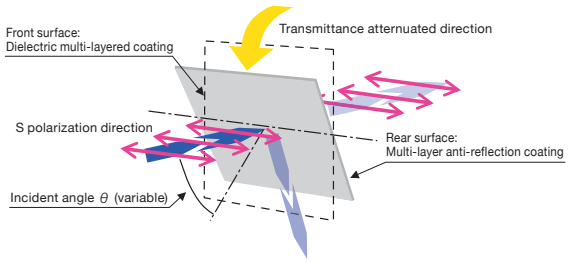
RoHS
RoHS

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.

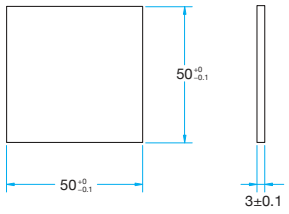
- The veriable beamsplitter has a dielectric multilayer coating which has excellent durability and light resistance.
- The beam shift caused by the tilt of the beamsplitter can be removed by using a correcting plate. (See how to use)
- It can be used for arbitrary polarization. However, the transmittance 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 30×43mm (Angle of inclinaison)

Guide

- Different size, wavelength and deviation not mentioned on-line or in our catalog are available as custom product upon on request.
  Reference B068
- 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 inclinaison 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 (θ=0°) [%]	Transmittance of S polarization (θ=45°) [%]	Material	Laser Damage Threshold* [J/cm²]
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

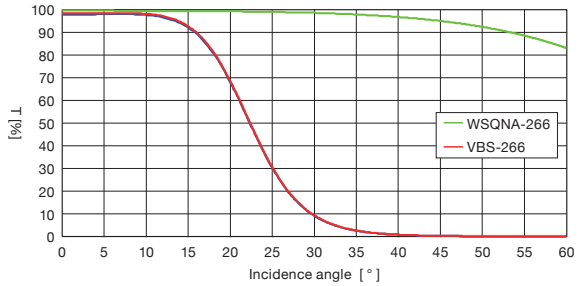
Part Number	Wavelength Range [nm]	Transmittance of S polarization (θ=0° – 45°) [%]	Material	Laser Damage Threshold* [J/cm²]
WSQNA-50S03-1-266-0/45D	266	Average 97	Synthetic fused silica	1
WSQNA-50S03-1-355-0/45D	355	Average 97	Synthetic fused silica	1
WBNA-50S03-1-532-0/45D	532	Average 98	BK7	2.5
WBNA-50S03-1-1064-0/45D	1064	Average 98	BK7	3.5

* Laser pulse width 10ns, repetition frequency 20Hz

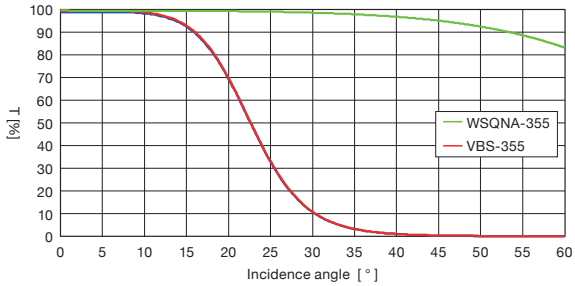
Typical Transmittance Data

T: Transmission (S polarization)

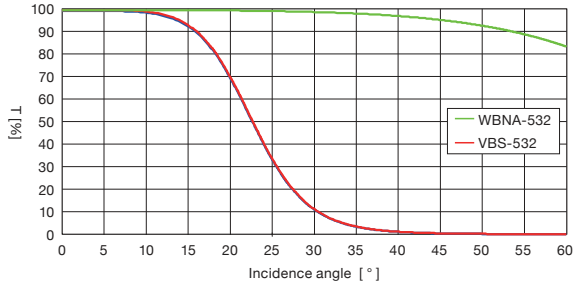
VBS-266 / WSQNA-266



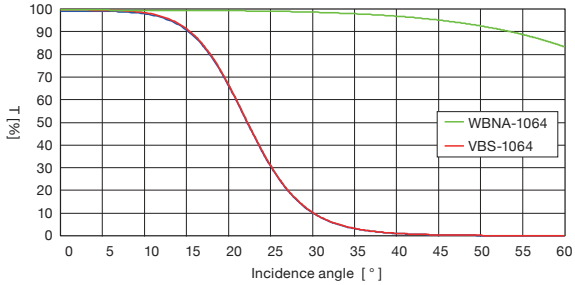
VBS-355 / WSQNA-355



VBS-532 / WBNA-532



VBS-1064 / WBNA-1064

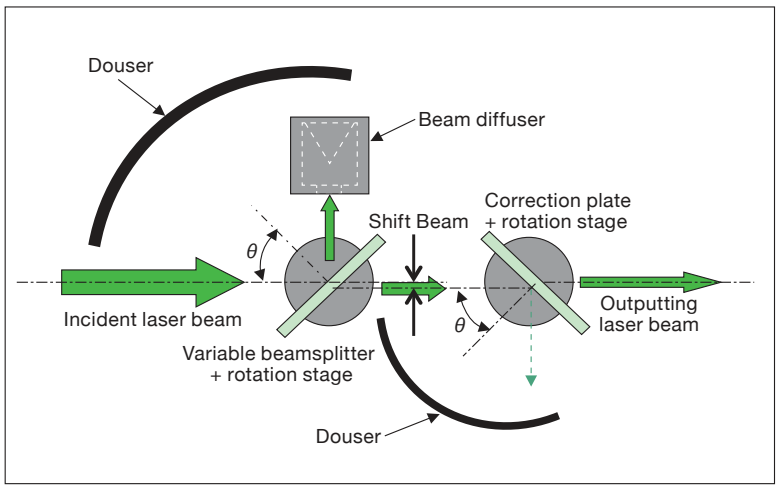


Sample of use

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