

About light behaviour on a beamsplitter

A half mirror is designed with reflectance and transmission of light with a 1:1 ratio. If light incident direction and polarization conditions change, it may impact the ratio.

Reflectance and transmittance properties of the incident light direction

Chrome coating and multi-wavelength coating application.

Reflection properties change when light is projected onto the coated and black surfaces. Any configuration similar to Michelson interferometer may require both sides to have incident light. In this case, light ratios may be unbalanced.

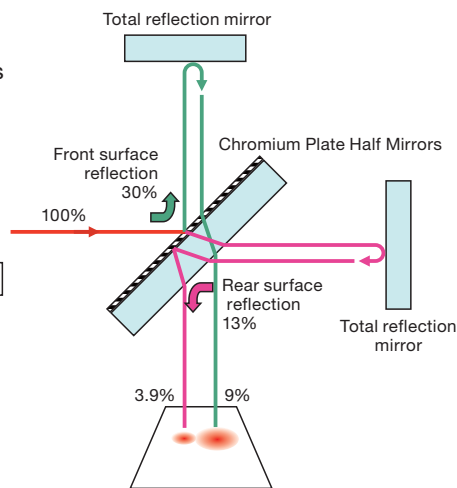
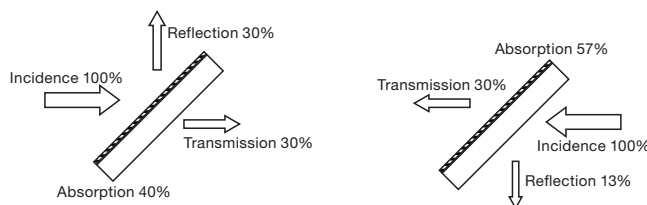
Choose the following set up if the light incident direction can be selected.

Incident light onto the coated surface of plate type beamsplitter.

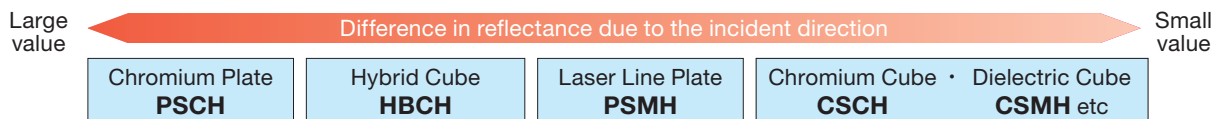
Incident light onto the \odot mark surface for cube type beamsplitter.

If the Incident light is on the wrong surface, the specifications mentioned in the catalogue cannot be realized.

Comparison reflectance and transmittance properties of the incident light direction in the chromium plate half mirror.



The difference in reflectance due to the incident direction occurs when there is absorption in the coating. It does not occur in the dielectric multilayer coating.



The reflectance and the transmittance of a polarized light incident

In case of using Laser

Light emitted from the laser is linearly polarized light. Because of this, even though it is used in the experiments and the optical system which are not related to the polarization, it is necessary to take into account the polarization characteristics of the beam splitter.

The transmittance and the reflectance may change in accordance with the type of beamsplitter and its polarization direction.

To split the light into a balanced light ratio, a non-polarized beam splitter (NPCH) is recommended. The polarization properties of the laser has no influence to it.

