

## Neutral Beam Splitters

### Dielectric neutral beam splitters

Dielectric neutral beam splitters separate light into reflected and transmitted parts without spectral influence and are free of absorption. Typical division ratio is e.g. R:T = 50:50 at 45° light incidence from 400 to 700 nm. Neutral beam splitters can be manufactured for narrow and wide spectral ranges with different splitting ratios and with or without polarizing effect.

Usually the layers are applied on a planar substrate and the backside is coated with a broadband anti-reflection layer for the respective angle of incidence.

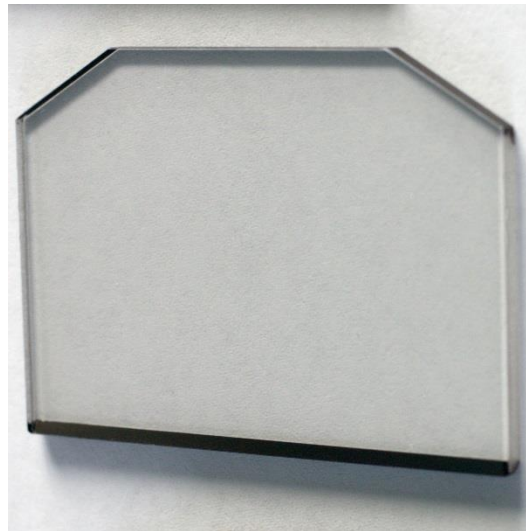
Our neutral beam splitters are optically stable and practically indestructible even under the harshest temperature and environmental conditions. This guarantees a long service life. The beam splitters can be manufactured for any angle of incidence.

The dielectric neutral beam splitters are limited in bandwidth to, for example, the visible spectrum or the near infrared. For very broad spectral ranges, so-called Polka Dot neutral beam splitters are used.

Plane neutral beam splitters with a splitting ratio T:R = 50:50 are available from stock in various sizes and thicknesses.

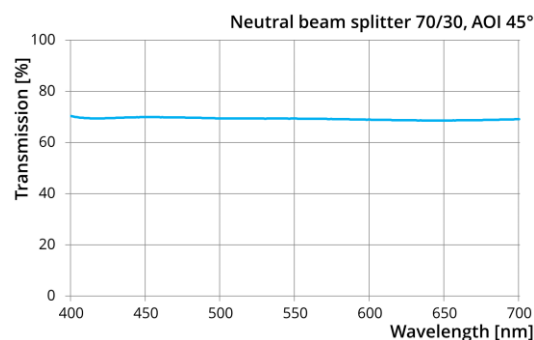
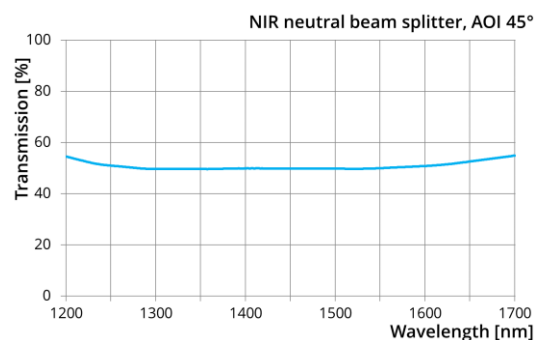
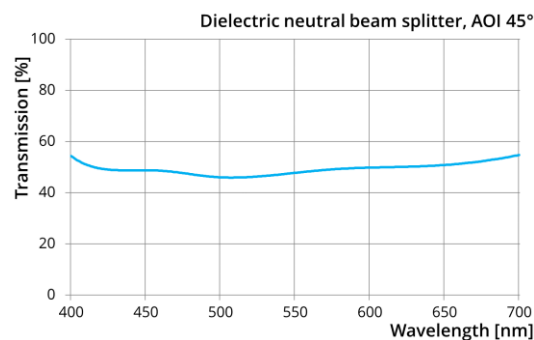
### Properties

- Absorption-free
- Dense waterproof layers
- Tropicalized, high environmental stability
- High scratch resistance
- Temperature resistant up to 400°C
- Neutral over broad spectral ranges



Neutral Beam Splitter 70:30

### Typical curves:



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### Polka dot neutral beam splitters

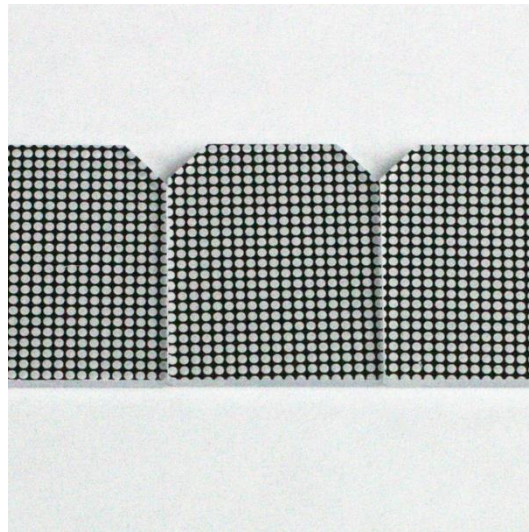
A special form of beam splitters are the so-called polka dot neutral beam splitters. Here, a broadband mirror layer is applied to a substrate, leaving a repeating circular pattern uncoated (or vice versa). Thus a very broadband light division can be achieved in any desired division ratio.

The mirror layer is usually a metal layer (aluminum) with a protective oxide layer. Therefore, these light splitters have a certain absorption.

Please note that polka dot beam splitters are not recommended for imaging systems.

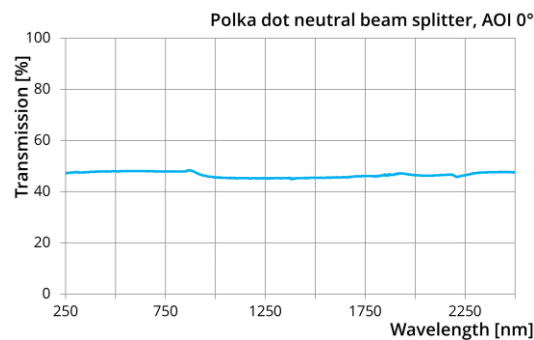
We are specialized in manufacturing neutral beam splitters according to customer specifications for OEM applications.

Please do not hesitate to contact us for an expert consultation.



Polka dot neutral beam splitters 50:50

### Typical curve:



### Properties

- Dense waterproof layers
- Tropicalized, high environmental stability
- High scratch resistance
- Temperature resistant up to 150°C
- Neutral over a very broad spectral range
- Beam diameter should be at least 9.5 mm
- Angle-independent light division

### Application

- Projection and observation equipment
- Optical measuring instruments, spectroscopy
- Light barriers, scanner
- Optical sensors
- Operating microscopes

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