

# Dichroic Color Mirrors

## High Transmission / Narrow Tolerance Dichroic Color Mirrors

Materion Balzers Optics shift-free color filters are dielectric coated interference mirrors which transmit certain regions of the visible spectrum and reflect others with the highest possible degree of efficiency. The mirrors are manufactured with the Materion Balzers Optics proprietary sputter technology which makes them extremely stable to changing operating temperatures and harsh environmental conditions.



### Benefits

- Sharp spectral separation between transmission and reflection with highest transmission and reflection values
- Spectral stability at changing operating temperatures and humidity (shift-free)
- Narrow cut-on/cut-off tolerances ( $\leq 1\%$ ) and excellent spectral uniformity
- Highest scratch and mechanical resistance
- Virtually absorption free for utmost transmission and reflection efficiency and minimum thermal stress
- Aging and fading free colors with ultimate color saturation
- Widest flexibility in custom designed colors, polarization planes, angles of incidence (AOI), substrate material and dimensions
- Engineering support for custom designed color management systems
- Available for use in transmissive mode as well as in reflective mode
- Specification in CIE chromaticity coordinates with luminous transmission for projection display applications

### Applications

Materion Balzers Optics color mirrors are used in color separation and recombination, mixing, and recognition systems. The most popular applications today are transmissive LCD projection display systems and film printers.

### Technical Data

#### Colors

Customized colors on request

#### Spectral performance

With tighter tolerances and specifications on request

#### Angles of incidence

45° in reflective mode, other angles on request

#### Substrate material

Heat resistant borosilicate glass,  
other materials on request

#### Temperature stability

up to 350°C (mechanical and spectral)

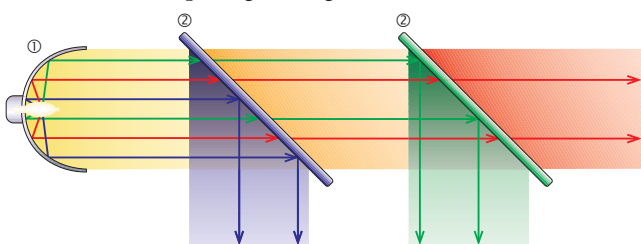
#### Dimensions

Available 160 x 110 mm x 1.1 mm,  
other dimensions on request

#### Polarization

s, p and random

### Schematic of color splitting showing dichroic color mirrors



- ① Lamp with cold light reflector
- ② Dichroic color mirrors

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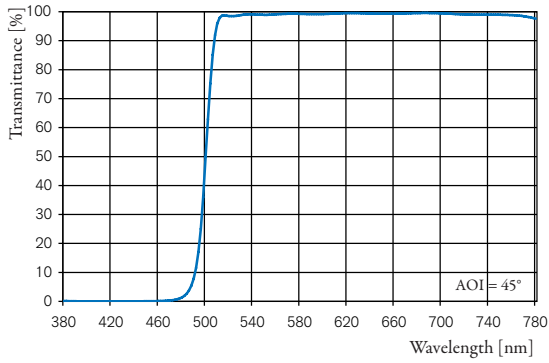
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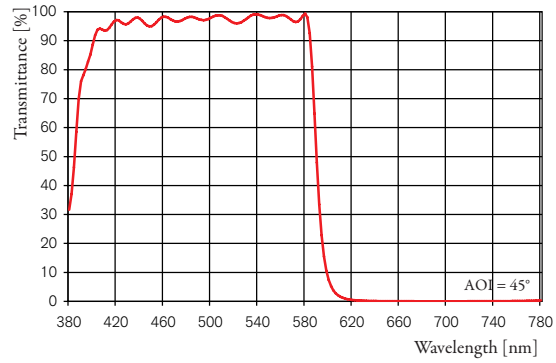
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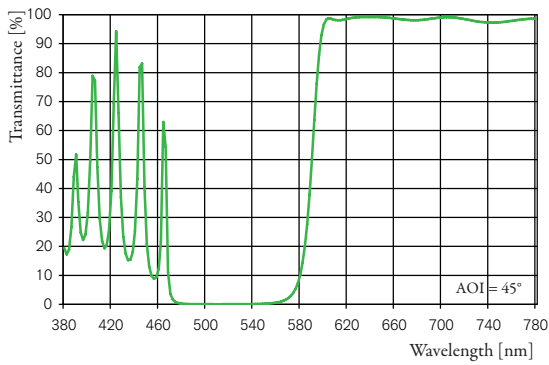
**Blue**  
Principle curve



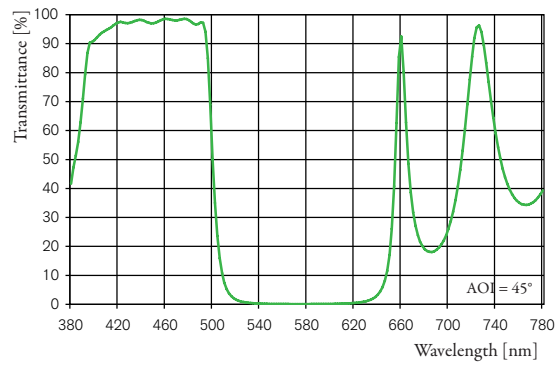
**Red**  
Principle curve



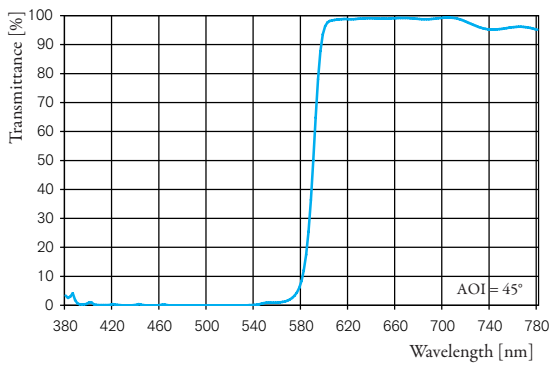
**Green (red transmissive)**  
Principle curve



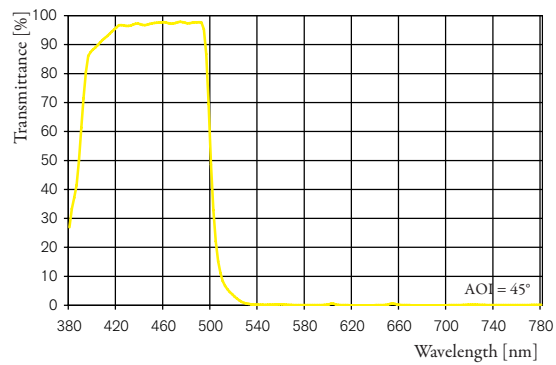
**Green (blue transmissive)**  
Principle curve



**Cyan**  
Principle curve



**Yellow**  
Principle curve



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