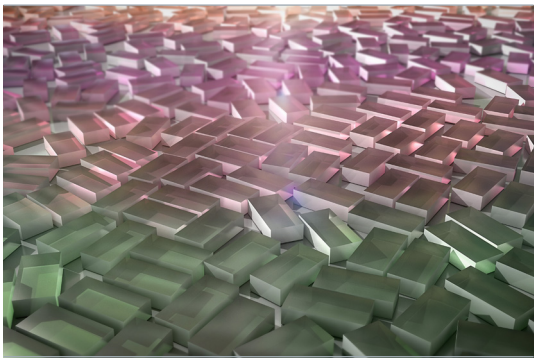
MATERION
// BALZERS OPTICS

Diflex™ eco Narrowband Dielectric Mirror

An attractively priced dielectrical mirror, giving excellent reflection for selected wavelength ranges in VIS and NIR



The Diflex™ eco mirror as narrowband high reflectivity mirror is characterized by extreme high reflectivity and almost no absorption loss at selected wavelength ranges within VIS or NIR spectrum. These dielectric mirrors are typically produced with a sputtering deposition process with excellent optical and mechanical stability, both at higher operating temperatures and under varying environmental conditions.

Our Diflex™ eco mirrors are generally less sensitive to polarization and angle of incidence over narrowband wavelength ranges.

Benefits

- Narrowband, high-reflective and durable dielectrical mirror
- Minimum absorption loss
- Designed specifically to meet demands of customer optical systems
- Wide AOI- range
- Excellent environmental stability thus long lifetime
- Engineering design support
- EU RoHS directive compliant

Applications

- All low loss reflective optics in VIS and NIR
- Optical sensors and instruments
- Metrology & Inspection
- Technical Lighting
- Automotive Lidar ranging systems

Technical Data

Diflex™ eco
Reflectance e.g.
Rabs. >= 99.0% at 633 nm (+-20 nm) / r-pol. / AOI = 0°-55°
Rabs. >= 99.0% at 633 nm (+-20 nm) / s-pol. / AOI = 0°-70°
Rabs. >= 99.0% at 633 nm (+-20 nm) / p-pol. / AOI = 0°-45°
Other selected wavelengths ranges between 400 nm – 2500 nm with high reflectance and broader band-width up to 400 nm on request.

Reflectance e.g.
Rabs. >= 99% at 633 nm (+-75 nm) / r-pol./ AOI = 0°
Rabs. >= 99% at 905 nm (+-100 nm) / r-pol./ AOI = 0°
Rabs. >= 98% at 1550 nm (+-200 nm) / r-pol. /AOI = 0°
Other customized solutions on request

Environmental resistance and durability
The coating withstands the following tests on glass substrates

Temperature
(MIL-M-13508C, para. 4.4.4.)
5 hrs each at -62° and 71 °C
(ISO 9022-2)
16 hrs at -62 °C and 2 hrs at +71 °C

Abrasion
(MIL-M-13508C, para. 4.4.5.)
50 strokes/cheesecloth
(ISO 9211-4-01)
50 strokes/Cheesecloth

Adhesion
(MIL-M-13508C, para.4.4.6.)
Scotch tape test, quick
(ISO 9211-4-02-02)
1 s/25 mm, tape 3M

Humidity
(MIL-M-13508C, para. 4.4.7.)
24 hrs. at 49 °C r.h. 95%
(ISO 9022-2)
24 hrs at +40 °C, r.h. 95%

Optics Balzers AG
Neugrüt 35
LI-9496 Balzers

Liechtenstein
T +423 388 9200
F +423 388 9390
info.mbo@materion.com
www.materionbalzersoptics.com

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Diflex™ eco Narrowband Dielectric Mirror 633 nm

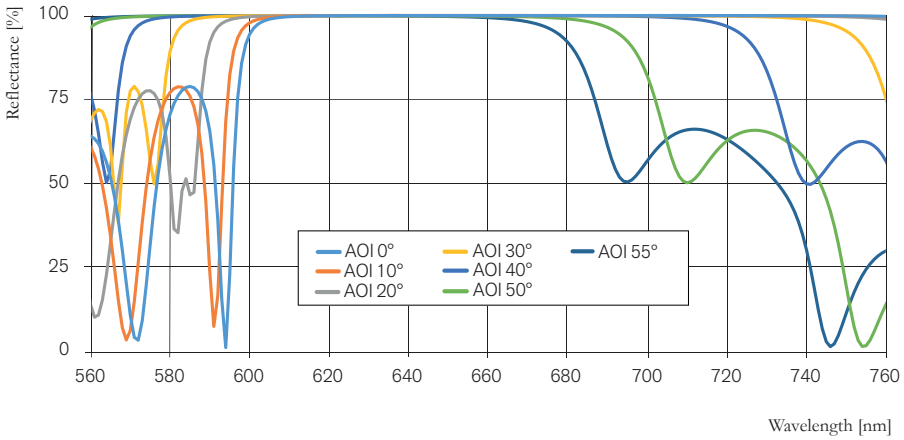

Fig.1: Measured spectral reflectance of r-pol light, various AOI

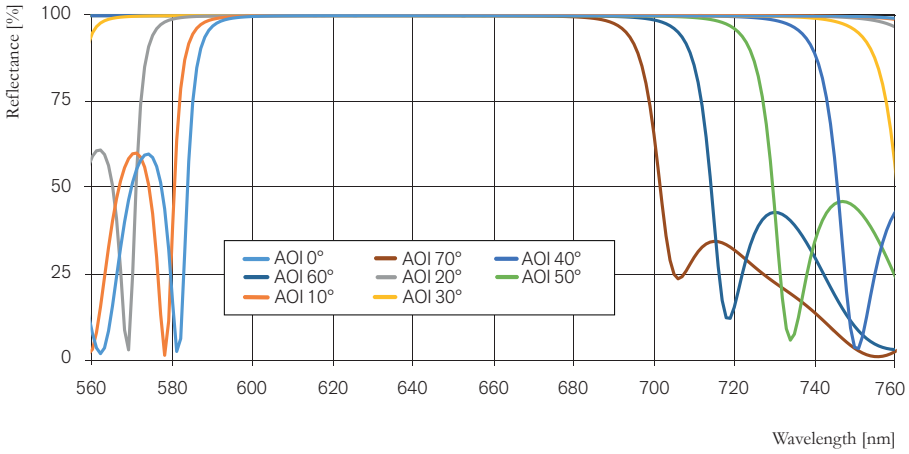

Fig.2: Measured spectral reflectance of s-pol light, various AOI

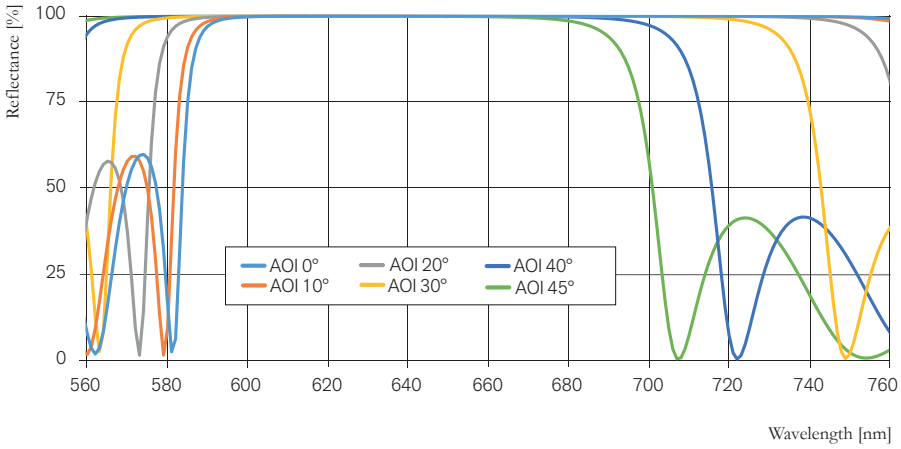

Fig.3: Measured spectral reflectance of p-pol light, various AOI

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