



MATERION

// BALZERS OPTICS

Silflex™ (MKII, VIS, UV)

Versatile Silver Mirrors, giving highest light Output from UV to FIR

Silflex™ MKII

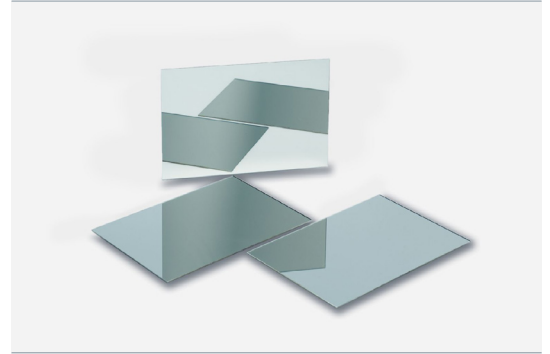
Silflex™ MKII is a broadband high-reflectivity mirror coating offering unprecedented performance and durability. It is virtually insensitive to polarization and angle of incidence, yet maintains more than 98% reflectivity from VIS to FIR wavelength range.

Silflex™ VIS

Unlike enhanced aluminium and all-dielectric mirror coatings Silflex™ VIS blue enhanced is virtually insensitive to polarization and angle of incidence, yet maintains more than 98% reflectivity for VIS wavelength range.

Silflex™ UV

Silflex™ UV as member of the Silflex™ family features a higher reflectivity in the UV wavelength range as the other Silflex™ mirrors. It is virtually insensitive to polarization and angle of incidence, yet maintains more than 89% reflectivity in the UV-A wavelength range and up to more than 97% reflectivity in the NIR wavelength range.



Benefits

- Excellent environmental stability due to protective dielectric coatings
- Very low angle of incidence dependency
- Virtually free of polarization effects
- No color shift
- Designed specifically to meet demands of customer systems
- Engineering design support
- EU RoHS directive compliant

Applications

- All reflective optics at UV, VIS, IR and FIR
- Optical sensors and instruments
- Metrology & Inspection (e.g. Spectrometer)
- Safety & Security
- Technical Lighting
- Data projection systems
- Automotive Lidar ranging systems
- Space applications

Technical Data

Substrate type

Floatglass, other substrates e.g. plastic or metal on request. Silflex™ are applicable as well on customer supplied substrates.

Cleaning

Silflex™ withstands immersion in acetone, ethanol, etc., as specified in MIL-C48497, para. 4.5.4.2. It can be cleaned with a soft cotton cloth soaked in mild soapy water, ethanol or other non-abrasive substances.

Technical Data Silflex™ MKII

Rabs. $\geq$ 98.5% at 550–650 nm

Ravg. $\geq$ 98% at 450–750 nm

Ravg. $\geq$ 97.5% at 700–3500 nm

Rabs. $\geq$ 98% at 3500–12000 nm

AOI = 45°

r-pol.

Environmental resistance and durability

The coating withstands the following tests on glass substrates:

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OBA 065 PE (2109-1)

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Subject to technical change without notice



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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 $+71^{\circ}\text{C}$

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, slow

(ISO 9211-4-02-01)

2–3 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 $+40^{\circ}\text{C}$, r.h. 95%

Salt atmosphere

(MIL-STD-202G 101 EC)

24 hrs. at 35°C r.h. 95%

(ISO 9022-4)

16 hrs. at 35°C , fog test

Technical Data Silflex™ VIS

Rabs. $\geq 97\%$ at 425–490 nm (blue enhanced)

Ravg. $\geq 98\%$ at 420–680 nm

AOI = 45°

r-pol.

Environmental resistance and durability

The coating withstands the following tests

on glass substrates: as Silflex™ MKII

Technical Data Silflex™ UV

Rabs. $\geq 89\%$ at 350–600 nm

Ravg. $\geq 94.5\%$ at 350–600 nm

Rabs. $\geq 97\%$ at 600–1100 nm

Ravg. $\geq 97.5\%$ at 600–1100 nm

AOI = 45°

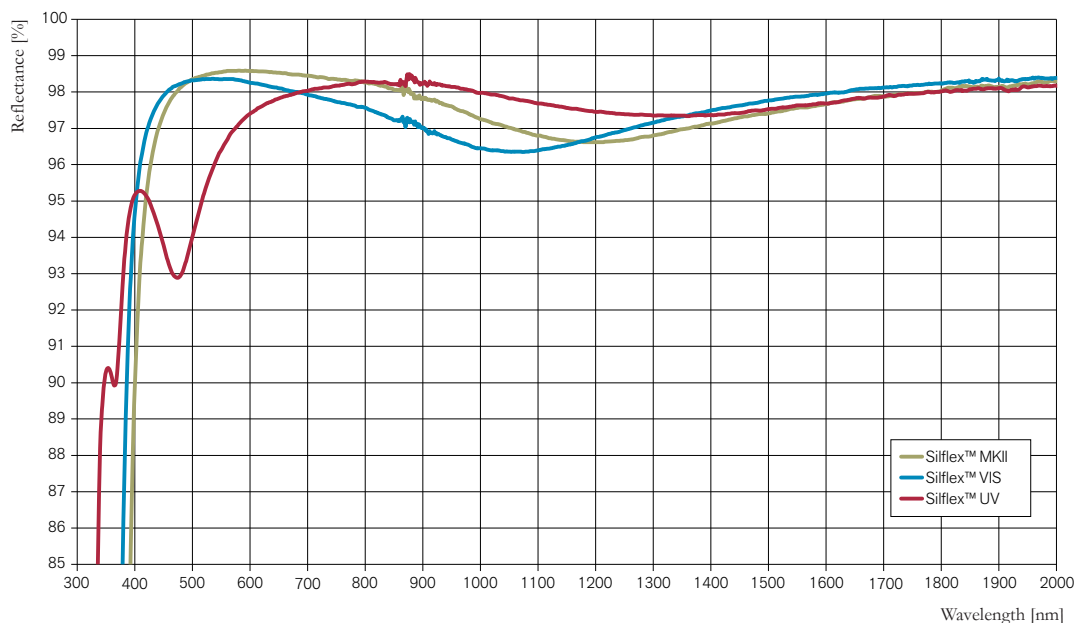
r-pol.

Environmental resistance and durability

The coating withstands the following tests on glass

substrates: as Silflex™ MKII but except for salt atmosphere test which is not applied

Silflex™ – Principle curves at AOI = 45° , r-pol between 300–2000 nm



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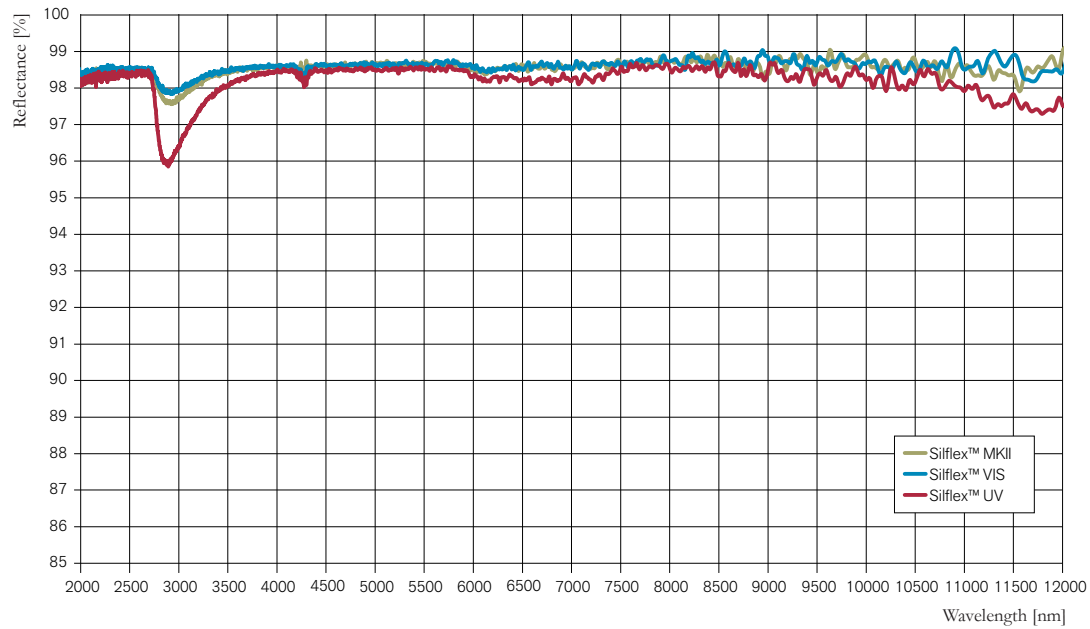
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Silflex™ – Principle curves at AOI = 45°, r-pol between 2000–12000 nm



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