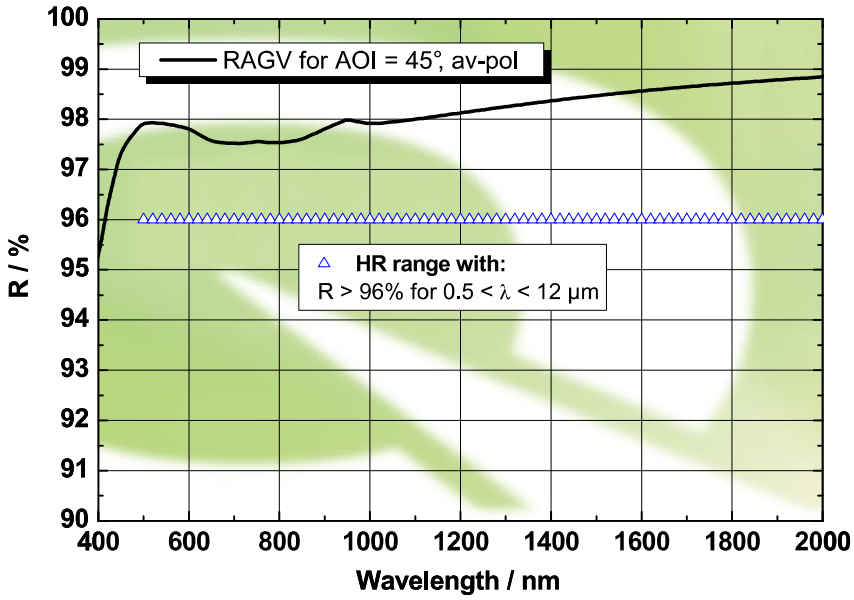
Coating – Data sheet

Designation: RAGV – Silver Reflection Coating

Application:

- front-side silver mirror coating for the visual and the infrared spectral range up to 12µm
- uniform high reflection for a broad spectral range and AOI range without absorption band
- guaranteed reflection in the spectral range of 500 nm-12 µm: > 96% for AOI = 0…60°(average polarisation)
- substrate material: optical glasses, glass ceramic, Zerodur, Borofloat, Pyrex, or similar

Example of the spectral characteristic: RAGV (AOI = 45°- av.-pol.)



1 Optical properties

1.1 Reflection: R > 96% for 500nm < λ < 12 µm for AOI = 0°-60°(av.-pol.)

1.5 Bandwidth (HR-range): 500 nm - 12 µm

1.6 AOI-range: 0 – 60°

1.7 Optical losses of the coating due to scattering: < 0.5% for HR-range

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Durability requirements Specification	Test description
2 Mechanical durability	
Adhesion: DIN-ISO 9211-4-02-01	tape test: 12…13 mm wide tape with adhesive strength ≥ 9.8 N/25mm; slow tape removal (2…3 s)
3 Laser resistance	
Energy density: Damage threshold for s-on-1 EN ISO 11254-2	s-on-1-measurement; substrate material: N-BK7
	H_∞ > 1.5 J/cm²; *test conditions:* λ = 1064 nm; 11 ns; 10 Hz
4 Chemical durability	
Solvent: DIN-ISO 9211-3-12-3	acetone CH_3COCH_3, ethanol C_2H_5OH; period of immersion ≥ 10 min
Water solubility: DIN-ISO 9022-4-04-02	deionised water with ρ ≥ 0.2 MΩ·cm and pH-value 6.5…7.2; (23 ± 2)℃; 24 h period of immersion
5 Environmental durability	
Humidity: DIN-ISO 9022-12-07-1	(55 ± 2) ℃; 90…95% rel. humidity; 16 h exposure
Dry heat: DIN-ISO 9022-11-06-1	(85 ± 2) ℃; < 40% rel. humidity; 6 h exposure
Cold: DIN-ISO 9022-10-10-1	(-65 ± 3) ℃; 16 h exposure
Slow temperature change: DIN-ISO 9022-14-09-1	T_1 = (-65 ± 3) ℃ ↔ T_2 = (85 ± 2) ℃; dwell time per temp. ≥ 2.5 h; temperature change 0.2…2 ℃/min; 5 cycles
6 Special requirements	
7 Additional specifications	DIN 58197, MIL-M-13508C
8 Drawing specification; special issues	
9 General	