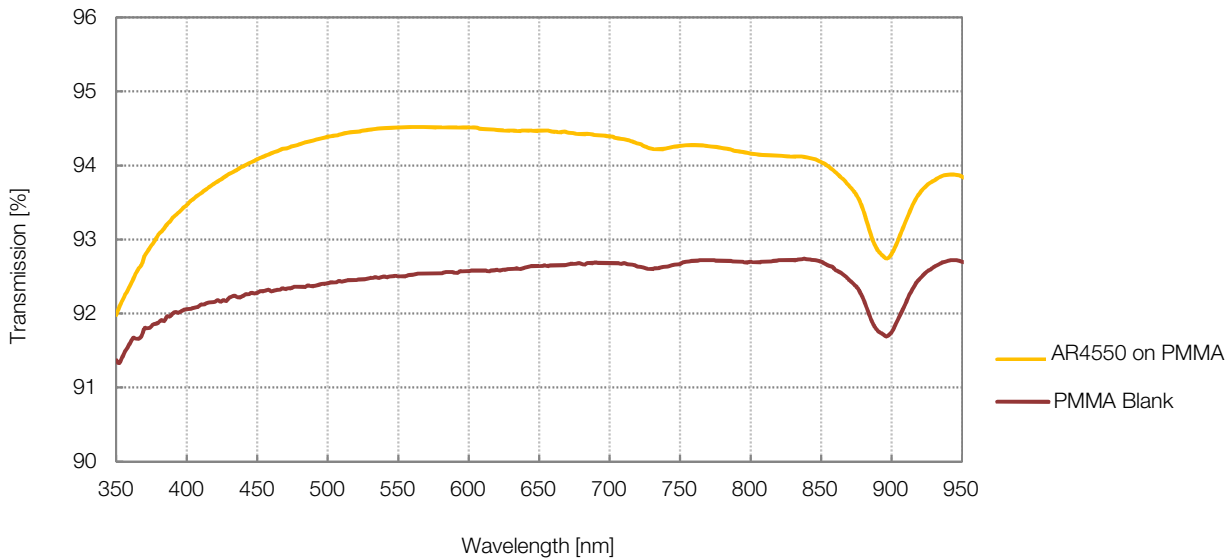


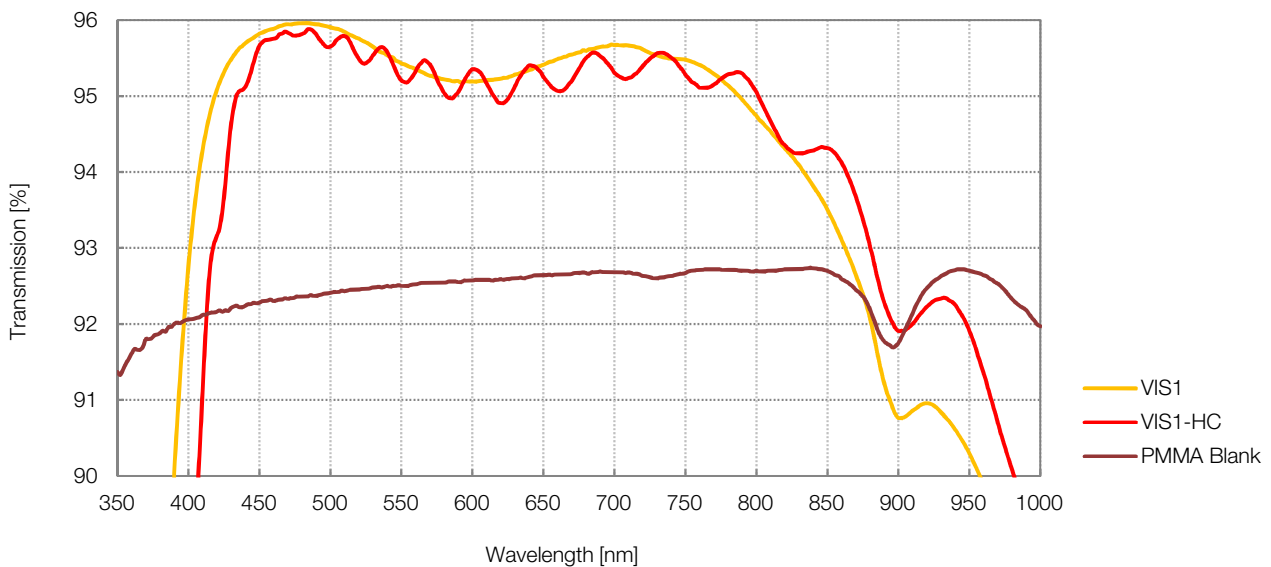
# INTERFERENCE LAYERS

ORAFOL Fresnel Optics GmbH offers its customers single-sided and double-sided coatings of plano and structured surfaces. There is also the possibility to evaporate single layer and multilayer systems onto plano surfaces and to combine them with hard coatings (HC). On structured surfaces, a single layer coating based on magnesium fluoride is applied.

## **Principle curve: single-layer coating for 550 nm on a PMMA plano surface, one sided (part thickness 2 mm)**



## **Principle curve: AR-coatings for VIS with + without HC on PMMA plano surfaces, one sided (part thickness 2 mm)**



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# INTERFERENCE LAYERS

## Properties:

- reduced losses (reflection, stray light and absorption)
  - single wavelengths (multilayer coatings): > 85%
  - Broadband coatings (multilayer coatings): 70 – 85% <sup>1</sup>
  - VIS on plano surfaces (single-layer coatings): ~ 55%
  - VIS on structured surfaces (single-layer coatings): 40 – 50% <sup>2</sup>
- abrasion resistant according to DIN EN ISO 2409 (cross hatch Tape-Test)
- climate resistant according to DIN EN ISO 9022-14-06 (5 cycles at 70°C to -40°C)
- climate resistant according to DIN EN ISO 9022-16-01 (5 cycles at 23°C / 40°C – 85% / 92% relative humidity)
- custom designs are possible
  - single wavelengths and wavelength ranges
  - different substrate materials
  - combination with hard coating (HC)
  - coloured residual reflexes

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<sup>1</sup> depends on substrate and bandwidth of coating

<sup>2</sup> for PMMA at 380nm – 780nm; depends on structure

A much better AR-effect for structured surfaces can be achieved when applying nanostructures. For more information on this subject please see our factsheet “Antireflective Nanostructures”.

Datasheets of our standard interference layers:

- AR4550 (single-layer coating for structured surfaces)
- AR3480 (BBAR-coating for VIS; max. transmission at 480nm – can be combined with HC)
- AR3680 (BBAR-coating for VIS; max. transmission at 680nm – can be combined with HC)

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