



- 1 Measured VUV reflectance of a protected Al coating.
- 2 Special coating technology for high rate Al deposition.
- 3 AFM micrograph of a protected Al coating with extremely low roughness.

## PROTECTED ALUMINUM COATINGS FOR THE HIGHEST VUV (100-200 NM) REFLECTANCE

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### Motivation

Coatings that provide the highest reflectance in the Vacuum UV (VUV) are usually based on aluminum. To avoid an oxidation of the aluminum surface, which leads to a drastic loss of reflectivity, the Al has to be protected with a fluoride coating. For the highest reflectivity in the short wave VUV (< 150 nm), an accurate process control is essential as the smallest deviations within the coating process can result in a considerable deterioration of the reflectance performance.

In addition to the optical requirements, a customised optimization of the environmental stability is carried out because protective fluoride coatings, common for VUV, do not exhibit very good barrier properties.

### Our expertise

- Vacuum evaporation of Al with the highest deposition rates > 25 nm/s.
- Selection of suitable material combinations for protective layers.
- Process development for the deposition of fluoride layers on aluminum.

### What we offer

- Coating development for customized optical functions in the VUV spectral range.
- Adaption of protective coatings according to optical requirements as well as environmental stability.
- Prototype coating on variously shaped components up to 400 x 400 mm.