

Protected Silver High Reflectance Coating

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This specification is for a protected silver high reflectance coating, to be applied to front surface mirrors.

Applicable Documents

LIGO- D0901565	aLIGO TMS Telescope Secondary Parabolic Mirror
LIGO- D1000075	aLIGO TMS Telescope Primary Parabolic Mirror
LIGO- D1102334	aLIGO TMS Telescope Second Fold Mirror
LIGO- D1102335	aLIGO TMS Telescope First Fold Mirror

Requirements

Reflective Coatings

Applied to front surface S1, >80% clear aperture.

Durability per MIL-C-675C, Coating Adhesion and Durability, or current compatible standard, to be approved by LIGO.

Surface S1 will be used in an ultra-high vacuum environment.

Coating to be free from visual scattering or blemishes.

Mirror Coating

Front surface S1 only

Wavelength 1064 nm

Polarization Random

Incidence angle < 8 deg

Protected silver, reflectivity >98%

Durability per MIL-C-675C, Section 4.5.12

Materials

Substrate material: Zerodur, BK7, or fused silica

Testing and Documentation

Specification	Test Method	Frequency of Inspection	Data Delivered
Surface Quality	Visual Inspection	100%	Certification
HR Coatings	Spectrophotometer	Witness sample for each coating run	Spectral scans