



ALIGO PRE-MODE MATCHING TELESCOPE MIRROR SUBSTRATE #1, COATED

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Rodica Martin, Dave Reitze	David Tanner	04-01-08		-01-	
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Applicable Documents

- D080160-00-D ALIGO Pre-Mode Matching Telescope Mirror #1 Substrate
- D080158-00-D ALIGO Pre-Mode Matching Telescope Mirror #1 Blank

Requirements

Physical Configuration

Fabricate from D080160-00-D ALIGO Pre-Mode Matching Telescope Mirror #1 Substrate
Arrow points in the direction of the highly reflective surface.

Surface 1 and 2

- Coating: Centered at 1064 nm
- Angle of Incidence: 6.45 degrees, P polarization
- Coating Uniformity: 1 nm rms – central 40 mm
15 nm p-v over 68 mm
- Absorption: < 1 ppm
- Zero surface electrical field

Surface Quality

To comply with Advanced LIGO Component Specification E080135-01-D, ALIGO SUBSTRATE PRE-MODE MATCHING TELESCOPE MIRROR #1 (Page 2): “Scratches and Point Defects”.
 Coating to resist abrasion test per MIL-M-13508C

Surface 1: HR coating

- Transmission: <10 ppm at AOI and less than 100 ppm for +/- 2 deg around design AOI
- Scatter: < 10 ppm over central 40 mm diameter aperture

Surface 2: AR coating

- Reflection: < 300 ppm

NOTE:

- Coating manufacturer to provide:
- One (1 in.) witness plate from each coating run
 - Spectrophotometer graphs of Reflectance and Transmittance of HR coating