



**ALIGO PRE-MODE MATCHING TELESCOPE MIRROR  
SUBSTRATE #2, COATED**

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**Applicable Documents**

- D080161-00-D ALIGO Pre-Mode Matching Telescope Mirror #2 Substrate
- D080159-00-D ALIGO Pre-Mode Matching Telescope Mirror #2 Blank

**Requirements**

**Physical Configuration**

Fabricate from D080161-00-D ALIGO Pre-Mode Matching Telescope Mirror #2 Substrate  
**Arrow points in the direction of the highly reflective surface.**

**Surface 1 and 2**

- Coating Centered at 1064 nm
- Angle of Incidence 2.88 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 E080136-01-D, SUBSTRATE ALIGO PRE-MODE MATCHING TELESCOPE MIRROR #2 (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