ALIGO INPUT MODE CLEANER MIRROR #3 SUBSTRATE, COATED

AUTHOR:	CHECKED:	DATE	APPROVALS		
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Applicable Documents

D070093-02-D	ALIGO Input Mode Cleaner Mirror #3 Substrate
D070085-01-D	ALIGO Input Mode Cleaner Mirror #3 Blank

Requirements

Physical Configuration

Fabricate from D070093-02-D ALIGO Input Mode Cleaner Mirror #3 Substrate
Arrow points in the direction of the highly reflective surface.

Surface 1: HR coating

Coating	Centered at 1064 nm
Angle of Incidence	44.53 degrees, S polarization
Transmission	6000 ppm +/- 100 ppm
Coating surface uniformity	1 nm rms – central 40 mm
	10 nm p-v over 140 mm
Coating transmission uniformity	$\Delta R/R < 10^{-4}$ over central 40 mm (fractional change in the reflectivity)
	$\Delta R/R < 10^{-3}$ over central 140 mm
Scatter	< 10 ppm over central 40 mm
Absorption	< 0.5 ppm
Zero surface electrical field	

Surface 2: AR coating

Coating	Centered at 1064 nm
Angle of Incidence	48.35 degrees, S polarization
Reflection	< 300 ppm
Coating surface uniformity	1 nm rms – central 100 mm
	10 nm p-v over 140 mm
Coating transmission uniformity	$\Delta R/R < 10^{-4}$ over central 100 mm (fractional change in the reflectivity)
	$\Delta R/R < 10^{-3}$ over central 140 mm
Scatter	< 10 ppm over central 100 mm
Absorption	< 0.5 ppm
Zero surface electrical field	

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Surface Quality

To comply with Advanced LIGO Component Specification E070080-02-D, ALIGO SUBSTRATE Input MODE CLEANER MIRROR #3 (Page 2): “Scratches and Point Defects”.

Coating to resist abrasion test per MIL-M-13508C

NOTE:

Coating manufacturer to provide:

1. One (1 in.) witness plate from each coating run
2. Spectrophotometer graphs of Reflectance and Transmittance of HR coating