LIGO

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

SPECIFICATION

E1000070 -V1

Drawing No Vers.

Sheet 1 of 2

Mirror Specifications

APPROVALS	DATE	RE V	DCN NO.	BY	CHECK	DCC	DATE
AUTHOR: L. BARSOTTI	3-5-10						
CHECKED:							
APPROVED: D. SIGG							
DCC RELEASE							

1 Description

2" Ø Flat/Flat mirror @ 532nm

2 Material

Corning HPFS 7980 (high purity fused silica, UV grade)
Grade 0A (Low inclusion class: <0.3 mm² cross section, 0.1 mm max. size;
Homogeneity < 1ppm)

3 Dimensions

2"Ø +.000/-.005" X .375" ± .020" tk., Plano / Plano

4 Wedge

<60 arc seconds

5 Surface Roughness

Side 1

Super polish

Surface Roughness: <1Å RMS in CA

Surface Quality: 10-5

Side 2

Commercial Polish

Surface Roughness: <5Å RMS in CA

Surface Quality:40-20

6 Surface Figure

Side 1

Flat $< \lambda/10$ at 632.8 over central 80%

Side 2

Flat $< \lambda/4$ at 632.8 over central 80%

LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

SPECIFICATION

E1000070 -V1

Drawing No Vers.

Sheet 2 of 2

Mirror Specifications

7 Coating

Wavelength: 532nm

Angle of incidence: 0°- 45°

Side 1

R > 99.95% @ 532nm and AOI 0°- 45°, both s and p pol

Side 2

AR coating, R<1% @ 532nm and AOI 0°- 45°, both s and p pol

Coating vendor to provide:

- 1. Two spectrophotometer graphs of the reflectance and transmittance of the HR coatings; one covering the spectrum from 440nm to 1200nm; the other, with increased sensitivity, showing wavelengths from 450nm to 650nm.
- 2. Spectrophotometer graphs of the reflectance of the AR coating taken as cited above.