# LIGO

#### LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY

#### **SPECIFICATION**

E1000070 -V2

Drawing No Vers.

Sheet 1 of 2

# **Mirror Specifications**

APPROVALS	DATE	RE V	DCN NO.	ВҮ	CHECK	DCC	DATE
AUTHOR: L. BARSOTTI	3-19-10						
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 1G or better (Low inclusion class: <1 mm² cross section, 0.28 mm max. size;
Homogeneity not specified)

#### 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%

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# **Mirror Specifications**

## 7 Coating

Wavelength: 532nm

Angle of incidence: 30°- 45°

Side 1

R > 99.95% @ 532nm and AOI 30°- 45°, both s and p pol

Side 2

AR coating, R<0.1% @ 532nm and AOI 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.