LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY LIGO **SPECIFICATION**

E040518 00 D Drawing No Rev. Group of 2

Sheet 1

Window Specifications

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
AUTHOR: H. Armandula	12-10-04						
CHECKED:							
APPROVED: P. Fritschel							
DCC RELEASE							

1 Material

BK7 – Grade A – Fine annealed optical glass

2 **Dimensions**

2" dia. +0/- .010"

Thickness: $1/2" \pm .005"$

Chamfers: $0.002" \pm 0.001"$ @ $45^{\circ} \pm 15^{\circ}$

Surface Roughness

Side 1

Superpolished - < 1 Angstrom over central 80 % of diameter with 10-5 scratch-dig; best effort for 0/0

20-10 scratch-dig outside central 80 % of diameter

Side 2

< 5 Angstrom over central 80 % of diameter

Surface Figure

Side 1

Flat $\leq \lambda/10$ at 632.8 over central 80% clear aperture

Side 2

Flat $\leq \lambda/10$ at 632.8 over central 80% clear aperture

Wedge

30 arc minutes ± 5 arc minutes

Coating

Window - 1 Coated for "P" Polarization

Window - 2 Coated for "S" Polarization

LIGO

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Sheet 2

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Window Specifications

Wavelength: 1064 nm Angle of incidence: 45°

Coated 1 side - AR - R < 500 ppm

Coating vendor to provide:

- 1. One 1" coated witness sample from each coating run.
- 2. Two spectrophotometer graphs of the AR coating; one covering the spectrum from 530nm to 1200nm; the other, with increased sensitivity, to show wavelengths from 900 nm to 1100 nm.