



SPECIFICATION

aLIGO ISC Optics:

2" High Reflectors @ 1064nm and 532nm

APPROVALS	DATE	RE V	DCN NO.	BY	CHECK	DCC	DATE
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DCC RELEASE							

1 Description

2" Ø Flat/Flat high reflector @ 1064nm and 532nm

2 Material

Corning HPFS 7980 (high purity fused silica, UV grade)  
Grade 0A (Low inclusion class: <0.3 mm<sup>2</sup> cross section, 0.1 mm max. size;  
Homogeneity < 1ppm)

3 Dimensions

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

4 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: 20-10

5 Surface Figure

Side 1

Flat < λ/10 at 632.8 over central 80%

Side 2

Flat < λ/10 at 632.8 over central 80%



## SPECIFICATION

**aLIGO ISC Optics:****2" High Reflectors @ 1064nm and 532nm****6 Coating**

Wavelength: **1064nm** and **532nm**

Angle of incidence: 45°

**Side 1**

R > 99.99% @ 1064nm (best effort) for **s** and **p**-polarization

R > 99.9% @ 532nm (best effort) for **s** and **p**-polarization

**Side 2**

AR coating, R < 0.2% @ 1064nm (best effort) for **s** and **p**-polarization

AR coating, R < 0.2% @ 532nm (best effort) for **s** and **p**-polarization

Serial numbers and registration marks shall be scribed or etched on the barrel of the optic for in-vacuum use

**Coating vendor to provide:**

1. Three spectrophotometer graphs of the reflectance and transmittance of the HR coatings; one covering the spectrum from 500nm to 1200nm; the others, with increased sensitivity, showing wavelengths from 900nm to 1100nm and from 500nm to 600nm
2. Spectrophotometer graphs of the reflectance of the AR coating taken as cited above.