aLIGO ISC Optics:

2” wedged 99% reflector @ 1064nm

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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DCC RELEASE							

1 Description

2” Ø Flat/Flat beam splitters @ 1064nm

2 Material

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

3 Dimensions

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

4 Wedge

30 arc minutes ± 5 arc minutes

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: 20-10

6 Surface Figure

Side 1
Flat < λ/10 at 632.8 over central 80%
Side 2
Flat < λ/10 at 632.8 over central 80%

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7 Coating

BEAM SPLITTER
Wavelength: 1064nm
Angle of incidence: 5-20°
Side 1
R = 99% ± 0.2% for **p-**polarization
Side 2
AR coating, R < 0.1% (best effort) for **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. Two spectrophotometer graphs of the reflectance and transmittance of the HR coatings; one covering the spectrum from 530nm to 1200nm; the other, with increased sensitivity, showing wavelengths from 900nm to 1100nm
2. Spectrophotometer graphs of the reflectance of the AR coating taken as cited above.