



# SPECIFICATION

## Beam Splitters for the H1 Squeezer

APPROVALS	DATE	RE V	DCN NO.	BY	CHECK	DCC	DATE
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APPROVED: D.SIGG							
DCC RELEASE							

### 1 Description

1" 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<sup>2</sup> cross section, 0.1 mm max. size;  
Homogeneity < 1ppm)

### 3 Dimensions

1"Ø +.000/-.005" X .250" ± .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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**Beam Splitters for the H1 Squeezer****7 Coating****BEAM SPLITTER – 1**

Wavelength: 1064nm

Angle of incidence: 45°

**Side 1**50:50 (R:T) for **s**-polarization

Absolute value of (R-T) &lt; 1%

**Side 2**AR coating, R < 0.1% (best effort) for **s**-polarization**BEAM SPLITTER – 2**

Wavelength: 1064nm

Angle of incidence: 45°

**Side 1**Uncoated (for fused silica R = 8% @ 45° for **s**-polarization)**Side 2**AR coating, R < 0.1% (best effort) for **s**-polarization**BEAM SPLITTER – 3**

Wavelength: 1064nm

Angle of incidence: 45°

**Side 1**R = 1% ±0.1% for **s**-polarization**Side 2**AR coating, R < 0.1% (best effort) for **s**-polarization**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.