



aLIGO ISC Optics: 2” curved reflectors

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

1 Description

Plano/Curved reflectors for HAM1 and HAM6 telescopes

2 Material

Corning HPFS 7980 (high purity fused silica, UV grade)
Grade 0G (or better)

3 Dimensions

Diameter: 2” +0.000/-0.005”

Thickness (center): 0.375” ± 0.005”

4 Radius of Curvature (ROC):

• E1100056-v2-01

Side 1: ROC R1 = + 1.7m ± 0.035m

Side 2: Flat

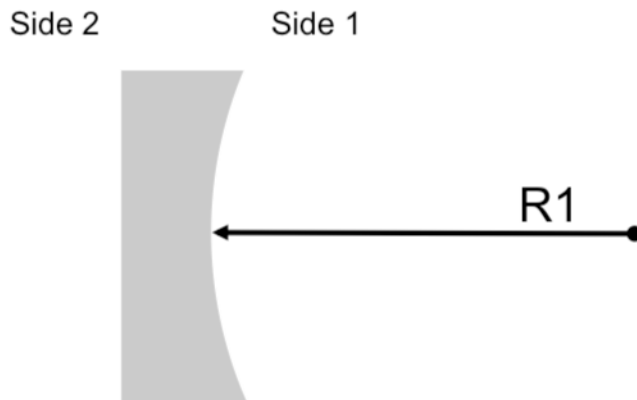


Fig1: Schematic picture of the curved optic E1100056-v1-01. This picture has the only purpose of identifying the ROC of the optic and the two sides.



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- **E1100056-v2-02**

Side 1: ROC R1 = + 4.6m ± 0.09m

Side 2: Flat

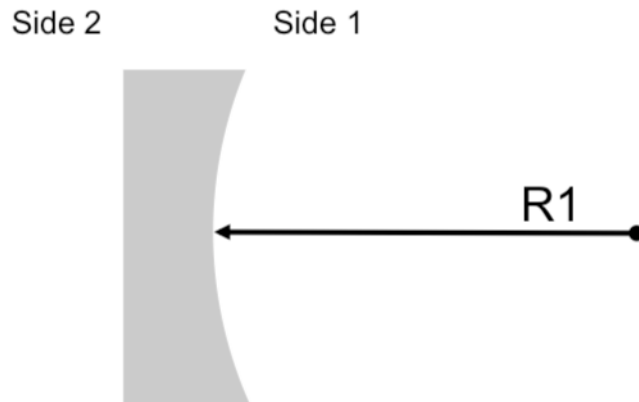


Fig2: Schematic picture of the curved optic E1100056-v1-02. This picture has the only purpose of identifying the ROC of the optic and the two sides.

- **E1100056-v2-03**

Side 1: ROC R1 = -0.6m ± 0.015m

Side 2: Flat

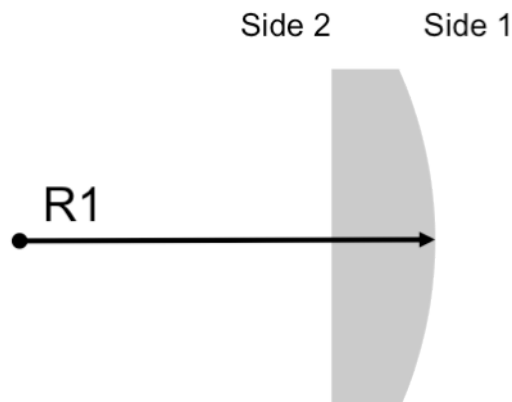


Fig3: Schematic picture of the curved optic E1100056-v1-03. This picture has the only purpose of identifying the ROC of the optic and the two sides.



SPECIFICATION

aLIGO ISC Optics: 2" curved reflectors**5 Surface Roughness****Side 1**

Super-polished less than 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**Commercial-polish**

Less than 5 Angstrom over central 80% of diameter

Edges and Bevels**Commercial-polish****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%

7 Coating

Wavelength: 1064nm

Angle of incidence: 0° - 15° , p-pol

Side 1

T = 800ppm \pm 150 ppm (greater than 500 ppm, less than 1000 ppm)

Side 2

AR coating, R $< 0.1\%$ (best effort)

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