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| **AUTHOR(S)** | DATE | Document Change Notice, Release or Approval |
| J**. Richardson** | 16 Apr 2020 | v1 |
| J. Richardson | **3** June 2020 | v2 – updated telescope designs |

# Description

50.8 mm (2”) Ø plano-concave mirrors @ 1064 nm

# Material

Corning HPFS 7980 (high purity fused silica, UV grade)

Grade 4G or better

# Dimensions

**Diameter**: 50.8 mm +0.0/-0.1 mm

**Thickness** (at edge): 9.53 mm ± 0.2 mm

**Wedge:** 2.0° ± 0.1°

# Radius of Curvature:

Radius of Curvature (ROC) values are defined over the central 30 mm diameter of the optic.



**Figure 1:** Schematic picture of the plano-concave optics E2000226-v2-X. This picture has the only purpose of identifying the ROC of the optic and the two sides.

* **E2000226-v2-A** (AS1)

Side 1: ROC R1 = +2.8 m ± 0.028 m

Side 2: Flat

* **E2000226-v2-B** (AS4)

Side 1: ROC R1 = +0.6 m ± 0.006 m

Side 2: Flat

* **E2000226-v2-C** (LO1)

Side 1: ROC R1 = +6.0 m ± 0.06 m

Side 2: Flat

# **Surface Roughness & Quality**

**Side 1:**

**Super-polished**

< 5 Å RMS over central 80% of diameter

10-5 scratch-dig

**Side 2:**

**Commercial polish**

< 10 Å RMS over central 80% of diameter

# **Surface Figure**

**Side 1:**

Deviation from sphere < λ/10 PV at 632.8 nm over central 80% of diameter

# **Coating**

Ion Beam Sputtered (IBS) coatings

Wavelength: **1064 nm**

Polarization: **p-polarization**

Angle of incidence: 0° – 8°

**Side 1:**

HR coating

T < 100 ppm

**Side 2:**

AR coating

R < 0.2%

# **Serial numbers and marks**

Each optic shall be laser engraved on the barrel for in-vacuum use—**no pencil marks shall be present**

Each barrel shall be inscribed as follows:

* Label centered on the thickest location:

**E2000226-v2-Y SN0x**

* + - with “**Y**” the radius-of-curvature letter designator given above
		- with “**x**” starting at **1** for each type
* Arrow at the thinnest location pointing towards Side 1