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| **APPROVALS** | **DATE** | **REV** | **DCN NO.**  | **BY**  | **CHECK**  | **DCC** | **DATE** |
| **AUTHOR: S. Waldman** | **11-08-2011** |  |  |  |  |  |  |
| **CHECKED:** |  |  |  |  |  |  |  |
| **APPROVED:**  |  |  |  |  |  |  |  |
| **DCC RELEASE** |  |  |  |  |  |  |  |

# Description

An optical quality 20x23x10 mm (WxDxH) fused silica optical prism

# Material

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

Grade 0A (Low inclusion class: <0.3 mm² cross section, 0.1 mm max. size;

Homogeneity < 1ppm)

# Dimensions

**FLAT-FLAT**

**Width**: 20.0 ±0.1mm

**Height:** 23.0 ±0.1mm

**Thickness** (thin edge): 10.0 ±0.1mm

**Wedge:** 30 arc-minutes front-back in horizontal plane (see figure)

**Perpendicularity:** 90.0° ±30” front surface to bottom surface (see figure)

**Chamfer:** 1mm chamfer on back/top edge (see figure)

Minimal chamfer to prevent chipping on other edges

**Marking:** Etched or enscribed “E1101086-xxx” on *thin* edge where xxx is “A”,”B”, or “C” for the coating

See [D1101968](https://dcc.ligo.org/cgi-bin/private/DocDB/ShowDocument?docid=73506) for machine drawings.

# Surface Specification

**Side 1 (Front)**

**Super-polished**

Microroughness: < 1 Angstrom rms over central 80% of width, height with 10-5 scratch-dig;

Best effort for 20-10 scratch-dig outside central 80%.

Surface figure: Flat to λ/10 at 632.8 over central 80%

**Side 2 (Back)**

Microroughness: < 5 Angstrom rms over central 80% of width, height

Surface figure: Flat < λ/4 at 632.8 over central 80%

**Side 3 (Bottom)**

to be prepared for thin-film epoxy bonding

Microroughness: <10 nm rms over central 80%,

Surface figure: < 1 µm pk-pk over entire surface

**Side 4 (Sides and top)**

Inspection polish

# Coatings

As per coating specification E1101095 and statement of work E1101096