



SPECIFICATION

Advanced LIGO Output Mode Cleaner Optical Prisms

APPROVALS	DATE	R E V	DCN NO.	BY	CHECK	DCC	DATE
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CHECKED:							
APPROVED:							
DCC RELEASE							

1 Description

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

2 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)

3 Dimensions

FLAT-FLAT

Width: 20.0 ±0.1mm

Height: 23.0 ±0.1mm

Thickness (thick 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 for machine drawings.



## SPECIFICATION

**Advanced LIGO Output Mode Cleaner Optical Prisms****4 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  $\lambda/10$  at 632.8 over central 80%

**Side 2 (Back)**

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

Surface figure: Flat <  $\lambda/4$  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  $\mu\text{m}$  pk-pk over entire surface

**Side 4 (Sides and top)**

Inspection polish

**5 Coatings**

As per coating specification E1101095 and statement of work E1101096