



40m BHD Optics: 50.8 mm Ø 50:50 Beamsplitter

AUTHOR(S)	DATE	Document Change Notice, Release or Approval
J. Richardson	16 Apr 2020	v1
J. Richardson	3 June 2020	v2 – updates surface finish requirements

1 Description

50.8 mm (2") Ø 50:50 beamsplitter @ 1064 nm

2 Material

Corning HPFS 7980 (high purity fused silica, UV grade)
Grade 0A

3 Dimensions

Diameter: 50.8 mm +0.0/-0.1 mm

Thickness: 9.53 mm ± 0.2 mm

Wedge: 0.5° ± 0.1°

Plano / Plano ($|R| > 500$ m)

4 Surface Roughness & Quality

Both Sides:

Super-polished

< 5 Å RMS over central 80% of diameter

10-5 scratch-dig

5 Surface Figure

Both Sides:

Flat < $\lambda/10$ PV at 632.8 nm over central 80% of diameter

6 Coating

Ion Beam Sputtered (IBS) coatings

Wavelength: **1064 nm**

Polarization: **p-polarization**

Angle of incidence: 45°

Side 1:

50:50 (R:T)

Absolute value (R – T) < 1%

Side 2

AR coating

R < 0.2%



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7 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:
E2000227-v2 SN0x
 - with “x” starting at 1
- Arrow pointing towards Side 1