

**4ITM07-C**

**LIGO-T990157-00-D**

**BLANK MATERIAL**

A. DCN: LIGO-T970042-00-D LIGO DETECTOR OPTICS  
B. LIGO S/N: IM 12 Incoming Inspection Check-off Sheet  
Core Optics Blank Material

The purpose of this sheet is to verify material physical dimensions, perform visual inspection, and to facilitate material traceability of LIGO Detector optics. This sheet is to be included in the LIGO Quality Assurance traceability file. Complete a check-off sheet for each optic blank received and inspected.

C. LIGO Contract No.: PC 208421 D. Glass Mfg./Order No: Heraeus/5001652  
E. Core optic Material: (BS / FM / ITM / ETM / RM) F. Glass Mfg. Part No.: 50784  
G. LIGO Drawing No.: D960794-A-D H. Manufacturer's Boule No.: \_\_\_\_\_  
I. Date Received at Caltech: ~~11-05-97~~ 11-05-97

J  Verify glass manufacturer's <sup>inspection report</sup> ~~Certification~~ against LIGO Component Specification No. E 960095-A-D  
Attach the applicable Component Specification Verification sheet.

K  Attach a copy of the glass manufacturer's <sup>inspection report</sup> ~~Certification~~ to check-off sheet.

L  Attach the glass manufacturer's birefringence map, inclusion map, and data sheet per the above Component Specification. birefringence map, inclusion map not present

M  Visually inspect for shipping container for damage. If applicable, describe the damage on attached.

N  Visually inspect the blanks for damage, for chips on surfaces and edges, or for other defects. If applicable, describe damage/defects on attached sheet.

O  Verify core optic blank physical dimensions per applicable LIGO drawing.

Inspection of material diameter. Diameter 10.10 in 256.6 mm

Inspection of material thickness. Thickness 4.29 in 108.9 mm

P  Verify that the Registration Mark is present (with arrow pointing to the first surface) as required by LIGO Component Specification. No registration mark present

Q  Verify receipt of 25mm X 25mm cylinder Witness Sample(s) required by the LIGO Component Specification and visually inspect for damage. Describe damage on the attached sheet. shipped separately

R  Sign and date original packing slip (shipper) and distribute per paragraph 3.R. 11-05-97

Inspect By: [Signature] Date Inspected: ~~11-05-97~~ 12-22-97 <sup>€</sup>

Reviewed and/or accepted by:

Cognizant Engineer: \_\_\_\_\_ Date: \_\_\_\_\_

LIGO QA Officer or Designee: \_\_\_\_\_ Date: \_\_\_\_\_

**LIGO DETECTOR OPTICS**  
Incoming Inspection Check-off Sheet

## Core Optics Blank Material

**COMMENTS/DISCREPANCIES:** (Disposition damage/discrepancies per LIGO Quality Assurance Plan (LIGO M960076-00-P) paragraphs 5.12 and 5.12.1.) No data disk (FTP not referenced)

Minimal chamfer. No defect map. No registration marks.  
No interferograms or homogeneity maps. No birefringence  
map. No inclusion sketch. No absorption certification.  
Striae not reported. No OH-content reported.

Witness sample shipped separately.

**SKETCHES:**

**DISPOSITIONS:** Received new inspection report 12-30-97  
Received defect, inclusion, and striae sketch.  
Received residual strain report.  
Received OH-content report and graph.  
Received interferograms and homogeneity maps.

**POL-QW****Project LIGO**

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**Customer** : HERAEUS Amersil Inc. Duluth, Ga 30136-5821  
**Order No.** : 45000023300dtd 30.09.96 as  
**HAI-Order No.** : none  
**HQS-Order No.** : 94908401  
**Item No.** : 1  
**Quality** : Fused silica Suprasil 312 S  
**HQS melt No.** : MF.F 8967  
**Marking** : 960095-IM12 *13N 6653*

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**Diameter** : 256,5 mm  
**CA Diameter** :  $\varnothing 200 \text{ mm} = 1,9 \times E^{-6}$   
**Thickness** : 108.9 mm  
**Edge** : 0,3 - 0,5 mm  
**Parallelism** : 0,08 mm  
**Roughness** : ground  
**R<sub>a</sub>** : 1,08  $\mu\text{m}$   
**R<sub>t</sub>** : 8,86  $\mu\text{m}$   
**Bubble class** : 0 ; none bubbles  
**Birefringence** : CA  $\varnothing 200 \text{ mm} \leq 5 \text{ nm/cm}$ ; CA  $\varnothing 80 \text{ mm} \leq 1 \text{ nm/cm}$   
**Homogeneity** : see Interferogram  
**Striae Grade** : A  
**Granularity** : none  
**Remark** : Test Sample ( $\varnothing 25 \times 25 \text{ mm}$ ) with the same marking

**POL - Qualitätsprüfung Optik****Date** : 22.09.1997**Inspector** : 