



BLANK MATERIAL, A+ FILTER CAVITY INPUT MIRROR

AUTHORS	DATE	Document Change Notice, Release or Approval
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Applicable Documents

LIGO-D1900147-v1	Mirror Blank Drawing A+ Filter Cavity Input Mirror
MIL-G-174-B	Glass, Optical

Requirements

Physical Dimensions	Right Circular Cylinder: 78 mm x 153 mm ϕ Per LIGO-D1900147-v1
Clear Aperture	Central 120 mm
Serial Number	Blanks shall be serialized as FIXX, where XX increments starting at 01
Material	High Purity Fused Silica
Final shaping	Shaping shall be performed using a progression of grit size ending with a 320 or smaller grit tool.
Defect depth	Maximum on any surface or corner is less than 0.5 mm
Homogeneity	$\leq 5 \times 10^{-7}$ P-V in clear aperture
Birefringence	≤ 5 nm/cm
Bubble and Inclusion Cross section within the clear aperture	No bubbles or inclusions within 5mm of the flat surfaces within the clear aperture, ≤ 0.03 mm total inclusion cross-section
Striae within the clear aperture	Class A according to MIL-G-174
OH Content	< 1000 ppm



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Specification	Method	Frequency of Inspection	Data Delivered
Physical Dimensions	Inspection	100%	Certification
Serial number	Visual Inspection	100%	Certification
Material	Process Control Material Certification	100%	Certification
Defect depth	Visual Inspection	100%	Certification
Birefringence	MIL-G-174 Section 4.4.5	100%	Certification
Inclusions	Visual Inspection	100%	Hand sketch indicating location and dimensions

Table 1: MEASUREMENT MATRIX: FREQUENCY AND METHOD