

	LASER INTERFEROMETER GRAVITATIONAL WAVE OBSERVATORY		E030243 -A- D	
	SPECIFICATION		Drawing No	Rev. Group
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70 x 60 mm sapphire Q substrate

APPROVALS	DATE	REV	DCN NO.	BY	CHECK	DCC	DATE
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Purpose: These Flat-Flat sapphire substrates are to be used in investigations into sapphire Q and thermal noise.

Applicable Documents: LIGO-D030403 70 x 60 mm sapphire Q substrate

Material: HEMLITE or Better single crystal sapphire

Orientation: Different cylinder axis for each of the three types: a, c and m \pm 2 degrees

Diameter: 70.0 mm +/- 0.2 mm

Thickness: 60.0 mm +/- 0.2 mm

Wedge: 30 ± 5 minutes, parallel to the c axis of the material within 3 degrees, except for the c-plane piece, where the wedge should be parallel to the a axis of the material within 3 degrees

Other Mechanical dimensions: Bevel, cylindricity and runout to best commercial practice

Polish: All surfaces polished out of gray, including bevel and cylinder

Surface Figure: Nominally flat, $\lambda/4$, PV at 633 nm

Microroughness: Super polish, front side only, < 2 Angstroms RMS