

MANUFACTURING NOTES

- Surface finish all surfaces to minimise surface cracks except "S1"
 Step 1: optical polish to Ra < 5 nm
 Step 2: flame polish all surfaces and edges except surface "S1" by an external vendor (prior to the final polish on surface "S1").
- Surface "S1" polished to $\lambda/10$ ($\lambda = 633 \text{ nm}$) peak-to-valley over 95% of the surface area. There shall be no peaks around the edges.
- All ears to be delivered with a surface map of surface "S1" measured over 100% of the surface area.
- All machining and polishing fluids shall be water soluble and free of silicone, sulfur and chlorine
- Ears to be manufactured from blanks 28 x 62 x 30 mm (2 ears from each blank)
- Edge chipping and scratching of surfaces to be minimised

PARTS LIST

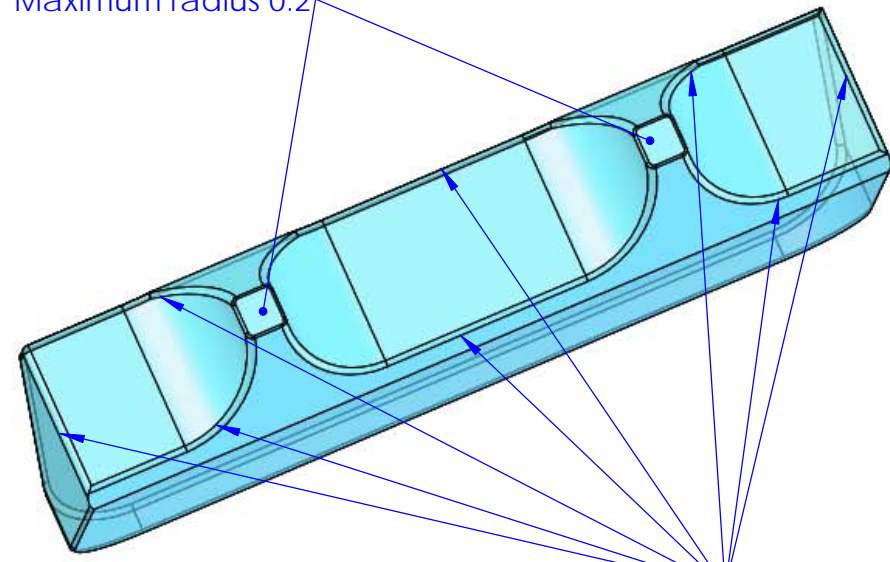
NOTES: (UNLESS OTHERWISE SPECIFIED)		DIMENSIONS ARE IN MILLIMETERS	
1. Do not scale from drawing 2. Symmetric about centre line		TOLERANCES: ± 0.1 MAX ANGULAR ± 0.2 °	
MATERIAL Suprasil 312		CALIFORNIA INSTITUTE OF TECHNOLOGY MASSACHUSETTS INSTITUTE OF TECHNOLOGY IGR, GLASGOW UNIVERSITY GEO 600 GROUP	
FINISH see manufacturing notes		SYSTEM Advanced LIGO	
DRAWN MIVV 10/12/08		SUB-SYSTEM SUS	
CHECKED R.JONES 10/12/08		NEXT ASSY ETM/ITM QUAD	
APPROVED		PART NAME Production Ear	
SCALE: 1:1		SIZE DWG. NO. B D080751	
PROJECTION:		REV. v2	
SHEET 1 OF 2			

DETAIL A
SCALE 6 : 1

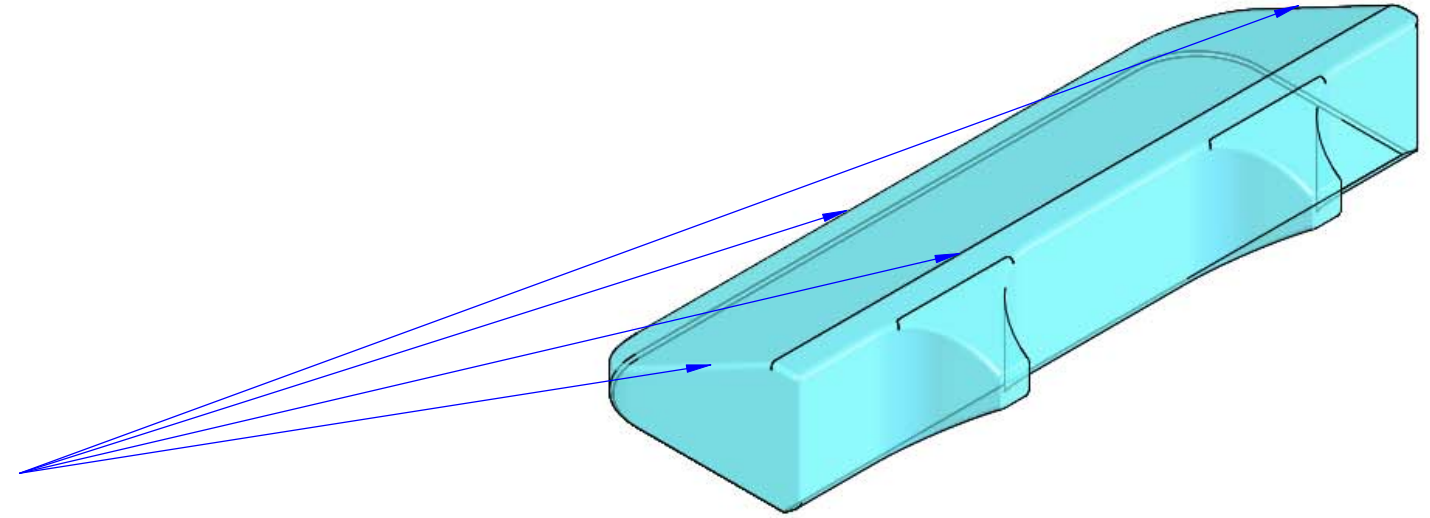
SURFACE "S1" (HATCHED)

FLAME POLISHING AND ANNEALING INSTRUCTIONS

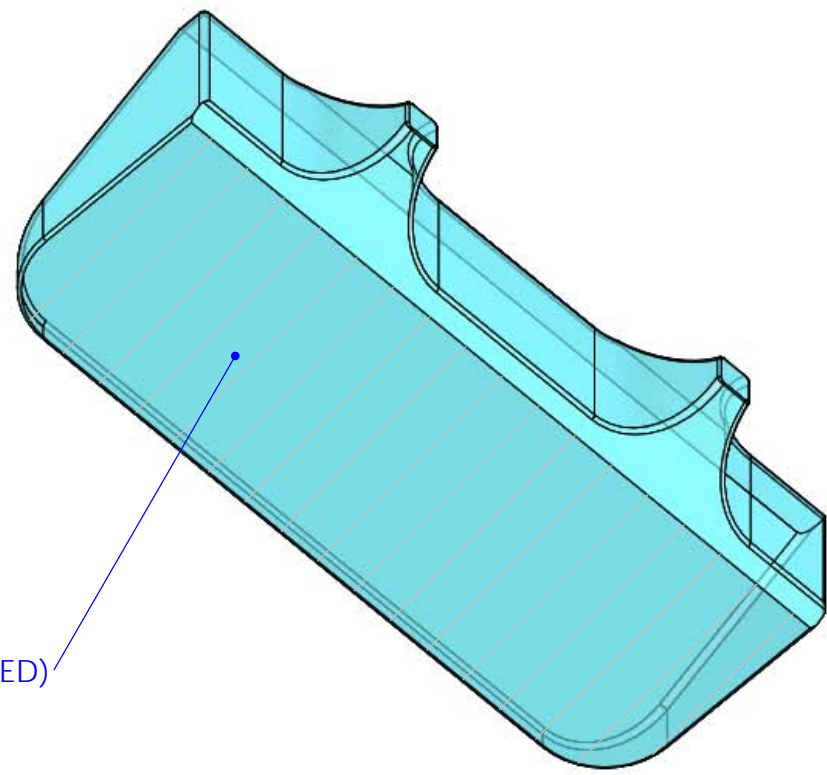
Flame polish all horn edges
Maximum radius 0.2



Flame polish indicated edges
Maximum radius 0.5





Surface "S1" (HATCHED)



MANUFACTURING NOTES

1. Ears shall be cleaned in a 9% hydrofluoric acid solution prior to flame polishing
2. Flame polish all surface and edges except surface "S1" and edges of surface "S1"
3. Flame polishing and annealing shall not change overall dimensions of the parts as in sheet 1
4. Annealing shall be done at 1120°C for 2 hours.
5. Extreme care shall be taken to not damage any surface in any way by scratching or chipping

PARTS LIST

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1. Do not scale from drawing 2. Symmetric about centre line		TOLERANCES: ± 0.1 MAX ANGULAR ± 0.2 °		
		MATERIAL Suprasil 312		SYSTEM Advanced LIGO
		FINISH see manufacturing notes		SUB-SYSTEM SUS
		DRAWN M.V.V. 10/12/08		NEXT ASSY ETM/ITM QUAD
		CHECKED R.JONES 10/12/08		PART NAME Production Ear
		APPROVED		SIZE B
				DWG. NO. D080751
				REV. v2
				SCALE: 1:1 PROJECTION:  SHEET 2 OF 2