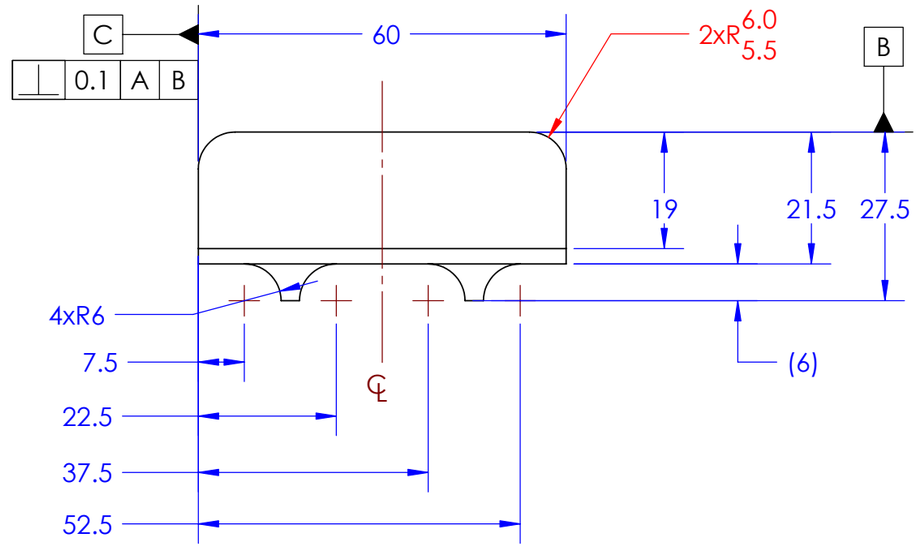
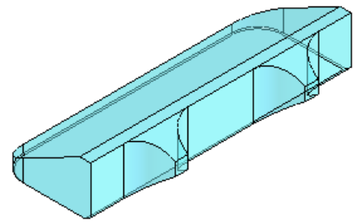
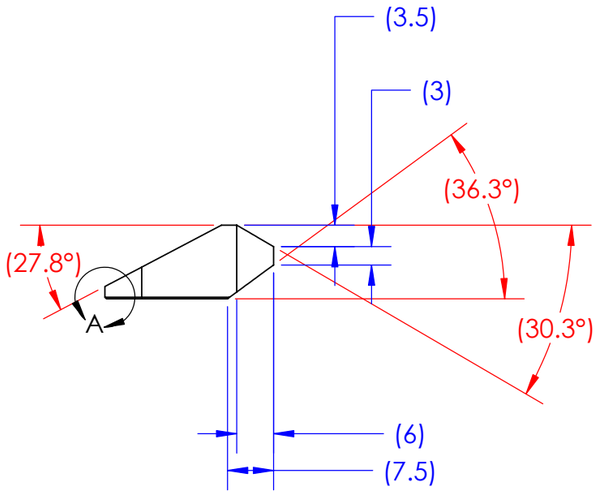
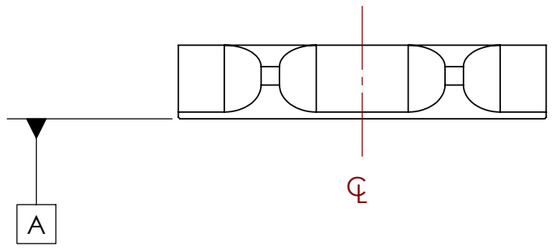
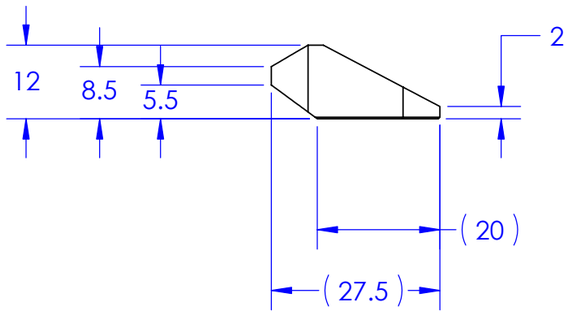
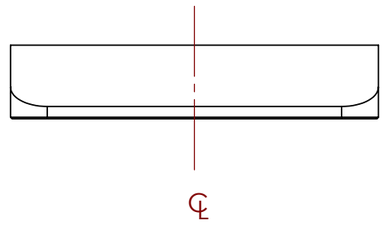


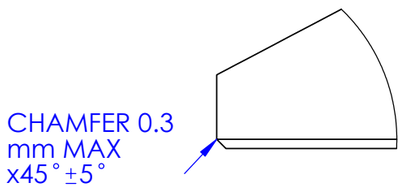




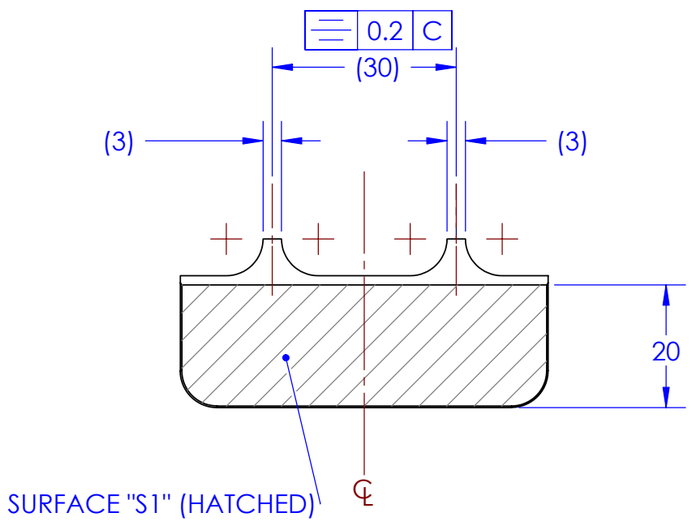








DETAIL A
SCALE 6 : 1



MANUFACTURING NOTES

1. 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").
2. Surface "S1" polished to λ/10 (λ = 633 nm) peak-to-valley over 95% of the surface area. There shall be no peaks around the edges.
3. All ears to be delivered with a surface map of surface "S1" measured over 100% of the surface area.
4. All machining and polishing fluids shall be water soluble and free of silicone, sulfur and chlorine
5. Ears to be manufactured from blanks 28 x 62 x 30 mm (2 ears from each blank)
6. Edge chipping and scratching of surfaces to be minimised

PARTS LIST

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. Do not scale from drawing
2. Symmetric about centre line

DIMENSIONS ARE IN MILLIMETERS

TOLERANCES:
± 0.1 MAX

ANGULAR ± 0.2 °

MATERIAL
Suprasil 312

FINISH
see manufacturing notes

	NAME	DATE
DRAWN	MVV	13/11/2008
CHECKED	RJ	13/11/2008
APPROVED		

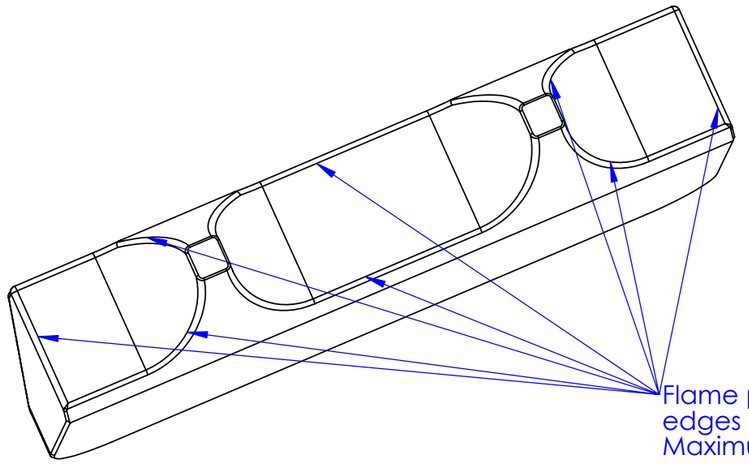
LIGO
CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SYSTEM	Advanced LIGO
SUB-SYSTEM	Suspension
NEXT ASSY	ETM test mass
PART NAME	Test ear redesign

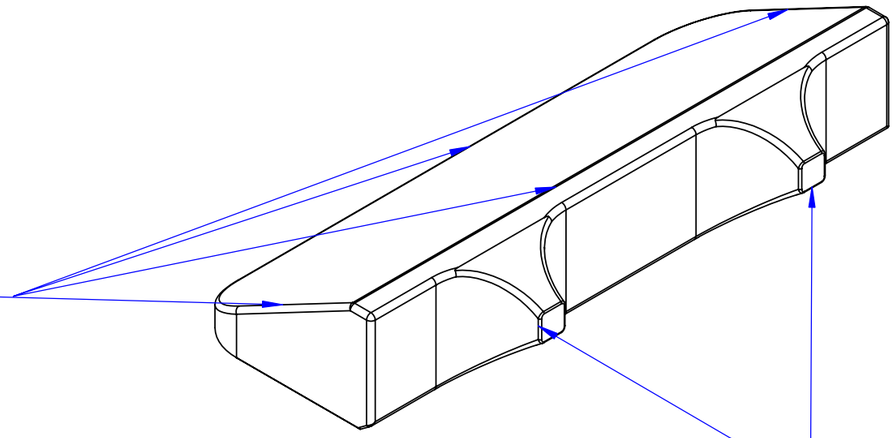
SIZE	DWG. NO.	REV.
B	D080751	02

SCALE: 1:1 PROJECTION: SHEET 1 OF 2

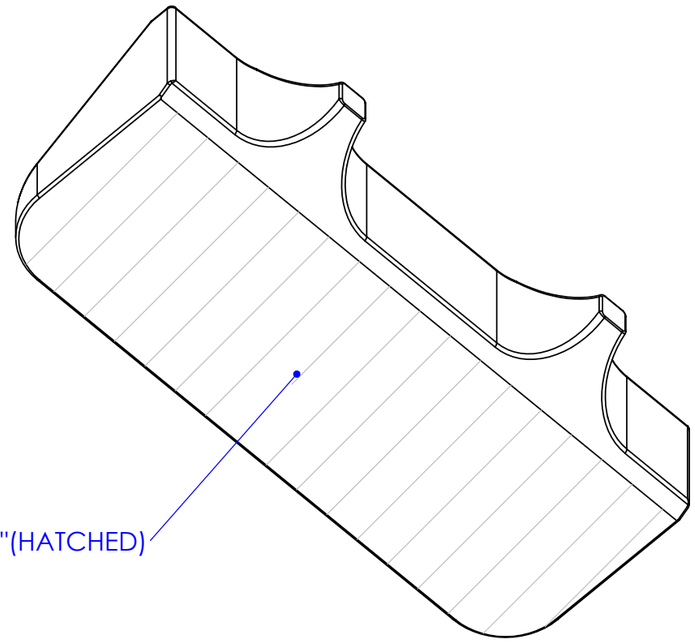
FLAME POLISHING AND ANNEALING INSTRUCTIONS



Flame polish indicated edges
Maximum radius 0.5



Flame polish horn edges
Maximum radius 0.2



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

NOTES: (UNLESS OTHERWISE SPECIFIED)

DIMENSIONS ARE IN MILLIMETERS

TOLERANCES:
± 0.1 MAX

ANGULAR ± 0.2 °

MATERIAL: Suprasil 312

FINISH

	NAME	DATE
DRAWN	MVV	10/12/2008
CHECKED	RJ	
APPROVED		

LIGO
CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SYSTEM	Advanced LIGO
SUB-SYSTEM	Suspension
NEXT ASSY	ETM test mass
PART NAME	Test ear redesign
SIZE	B
DWG. NO.	D080751
REV.	02
SCALE:	1:1
PROJECTION:	
SHEET 2 OF 2	