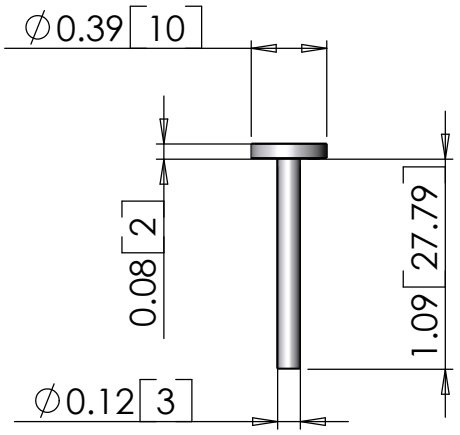
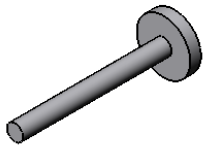
REV.	DATE	DCN #	DRAWING TREE #

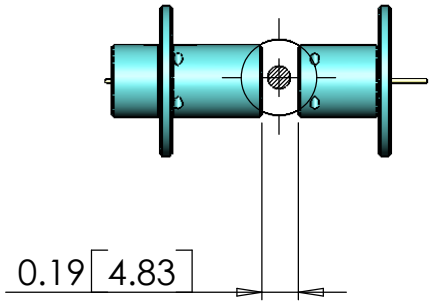
Noise Prototype - Baseline Flag Design

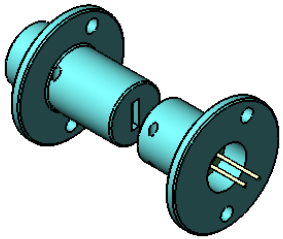




3-D VIEW

Noise Prototype - OSEM Sensor Configuration





3-D VIEW

Alternative Flag Geometry Concepts

Rectangular (Ideal) Flat Flag

- Estimated additional clearance gain is 2mm
- Specular reflection is a concern (surface finish?)
- Rotational sensitivtiy is problematic
- Requires correct orientation of flag during installation & operation

Elliptical Flag

- Estimated additional clearance gain is 2mm
- Specular reflection is improved over rectangular design
- Rotational sensitivtiy is problematic
- Requires correct orientation of flag during installation & operation

Cylindrical Flag with Flats

- Estimated additional clearance gain is <1.5mm
- Specular reflection is a concern (surface finish?)
- Rotational sensitivtiy can be overcome*
- *Requires correct orientation of flag during installation & operation

Cylindrical Flag with Flat (half-pipe)

- Estimated additional clearance gain is <1.5mm
- Specular reflection is is not a concern
  - Can be optimised so the the flat faces the IRLED or PD (as determined by further testing & charaterisation)
- Rotational sensitivtiy can be overcome*
- *Requires correct orientation of flag during installation & operation

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. DO NOT SCALE FROM DRAWING
2. REMOVE ALL SHARP EDGES, R.02 MAX.
3. ALL MACHINING FLUIDS SHALL BE WATER SOLUBLE AND FREE OF SULFUR, CHLORINE AND SILICONE, SUCH AS CINCINNATI MILACRON'S CIMTECH 410 (STAINLESS STEEL)

④ SCRIBE, ENGRAVE OR STAMP DRAWING PART NUMBER, REVISION ON NOTED SURFACE OF PART AND THEN A THREE DIGIT SERIAL NUMBER. SERIAL NUMBERS START AT 001 FOR THE FIRST PART AND PROCEED CONSECUTIVELY. USE .07" HIGH CHARACTERS. A VIBRATORY TOOL MAY BE USED. EXAMPLE: D020188-00 SN 001

DIMENSIONS ARE IN INCHES [mm]

TOLERANCES:
.XX ± 0.01
.XXX ± 0.005

ANGULAR ± 0.5 °

MATERIAL Aluminium

FINISH µ inch

	NAME	DATE
DRAWN	S. Aston	13/Sept/05
CHECKED		
APPROVED		

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

SYSTEM Advanced LIGO

SUB-SYSTEM SUS

NEXT ASSY

PART NAME Alternative Flag Geometry

SIZE A | **DWG. NO.** | **REV.** 01

SCALE: 2:1 | **PROJECTION:** | SHEET 1 OF 1