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Supplementary information

Mapping mechanical properties of biological materials via an add-on Brillouin module to confocal microscopes

In the format provided by the authors and unedited

Mapping mechanical properties of biological materials via an add-on Brillouin module to confocal microscopes

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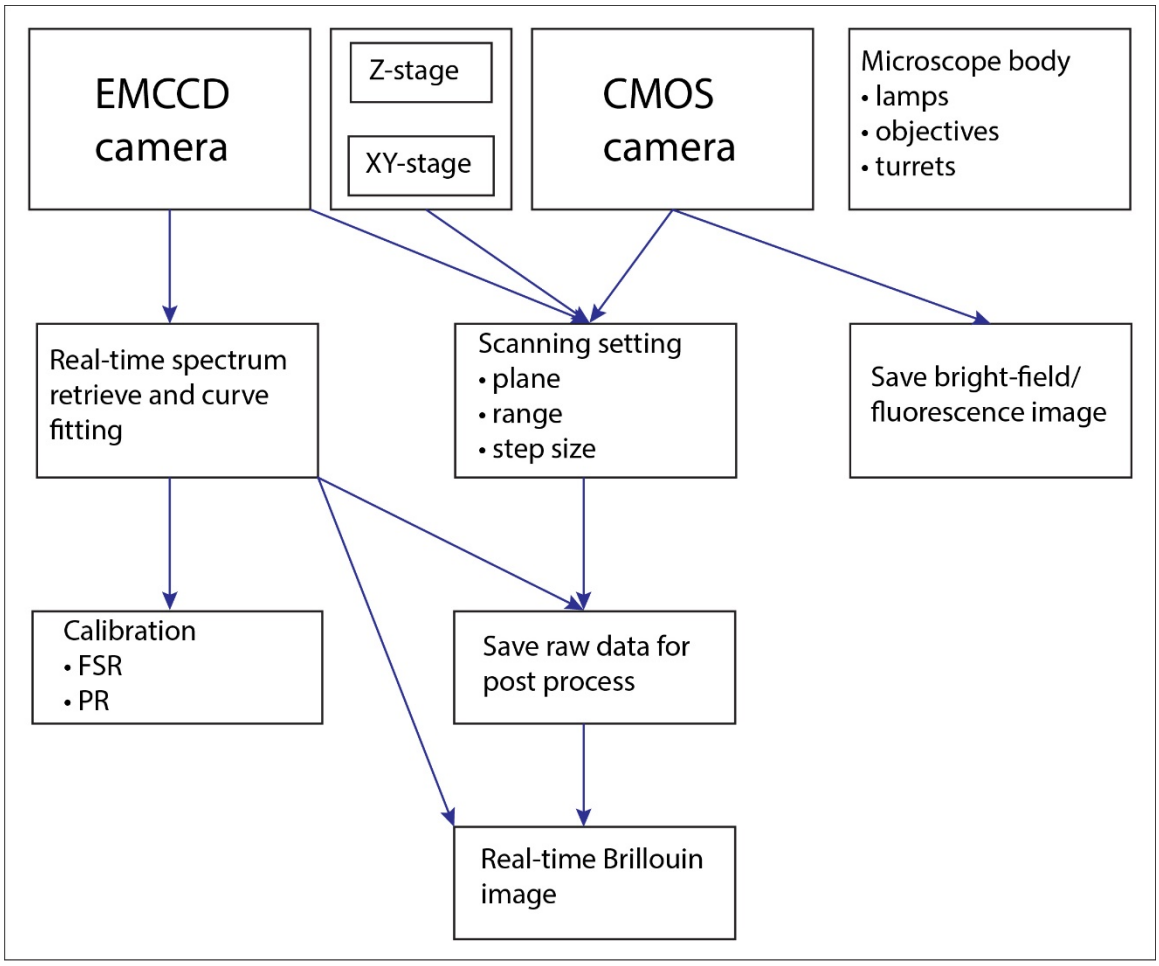
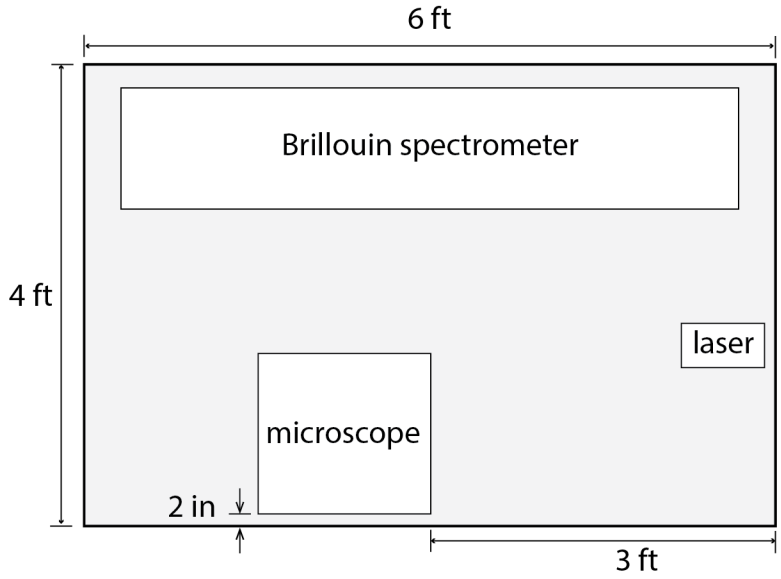
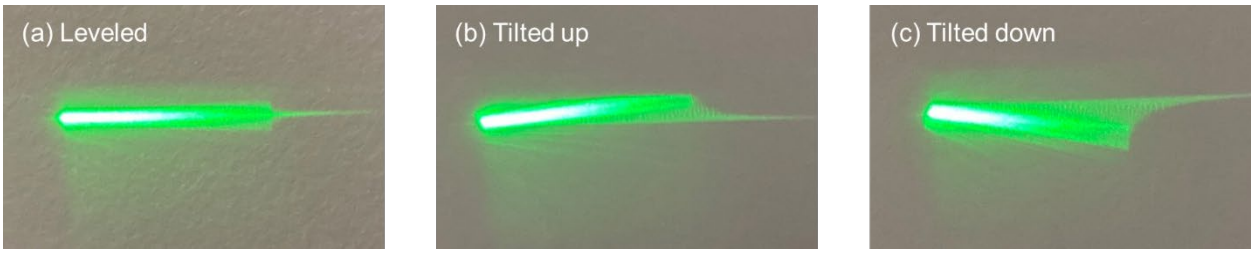


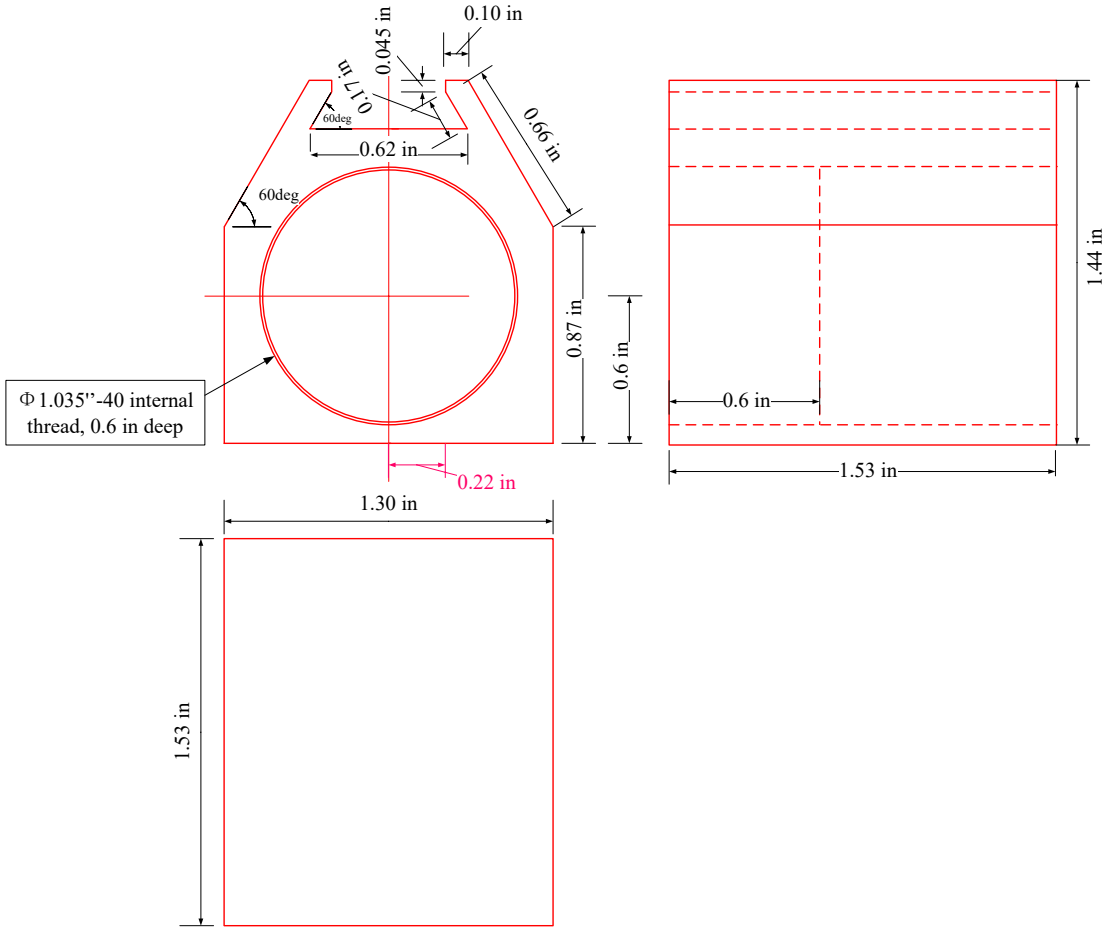
Supplementary Figure 1: Block diagram of the LabVIEW program developed for data acquisition.



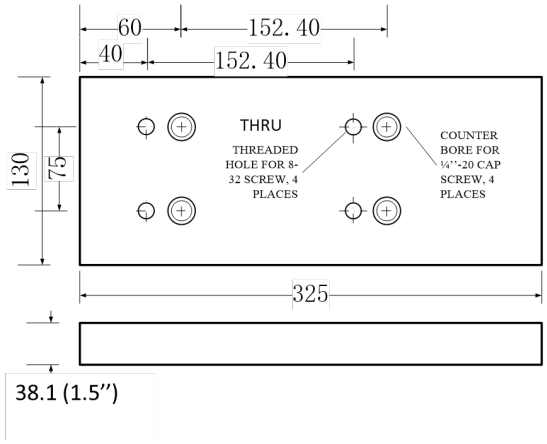
Supplementary Figure 2: Layout of the optical table. The drawing is for demonstration purpose and not necessarily to scale.



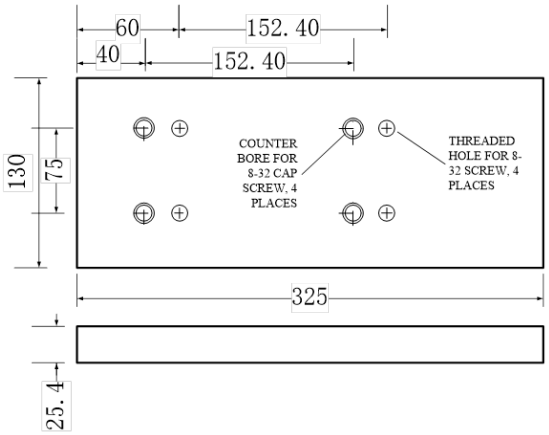
Supplementary Figure 3: Examples of the optical pattern collected right after the VIPA2 corresponding to the adjustment of vertical-tilt degree of freedom. (a) pattern is leveled horizontally with proper adjustment. (b) & (c): pattern is tilted with improper adjustment. Note: the laser used for collecting these patterns is different from the one used in the protocol.



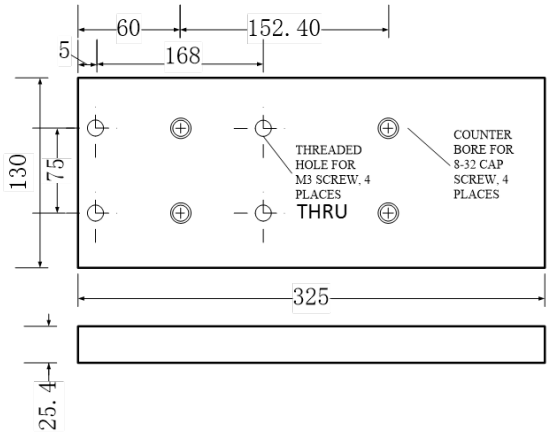
Supplementary Data 2: Layout of customized mount for Brillouin filter cube. This is adapted from OEM Microscopy Filter Cubes (Thorlabs, cat. no. MDFM-MF2). Material: aluminum. Unit: inch.



(A) Bottom plate

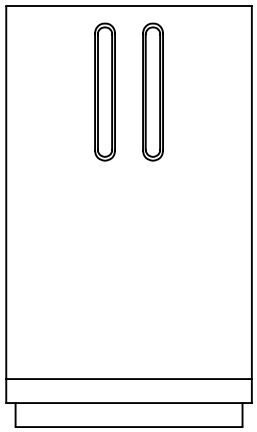


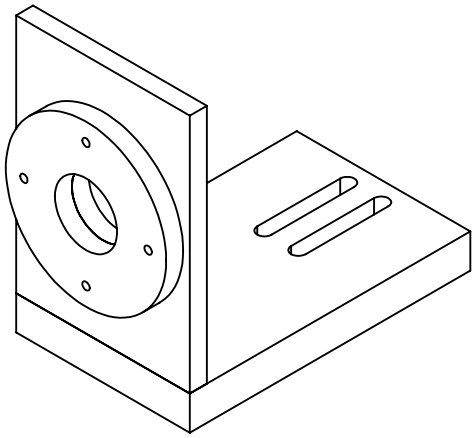
(B) Intermediate plate



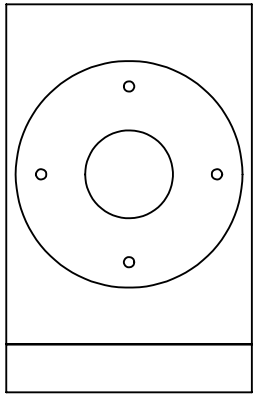
(C) Top plate

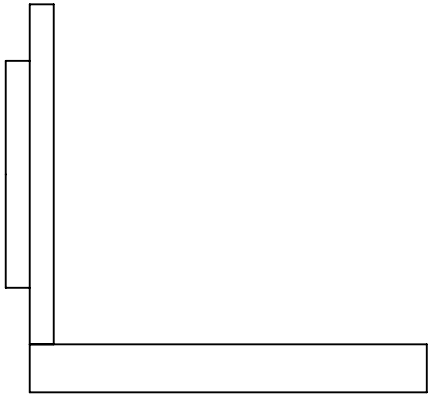
Supplementary Data 3: Layout of customized mounting base for laser head. The overall height of the base stacks should be adjusted based on the height of the microscope port. Material: aluminum. Unit: mm.

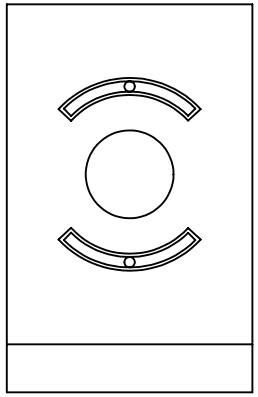




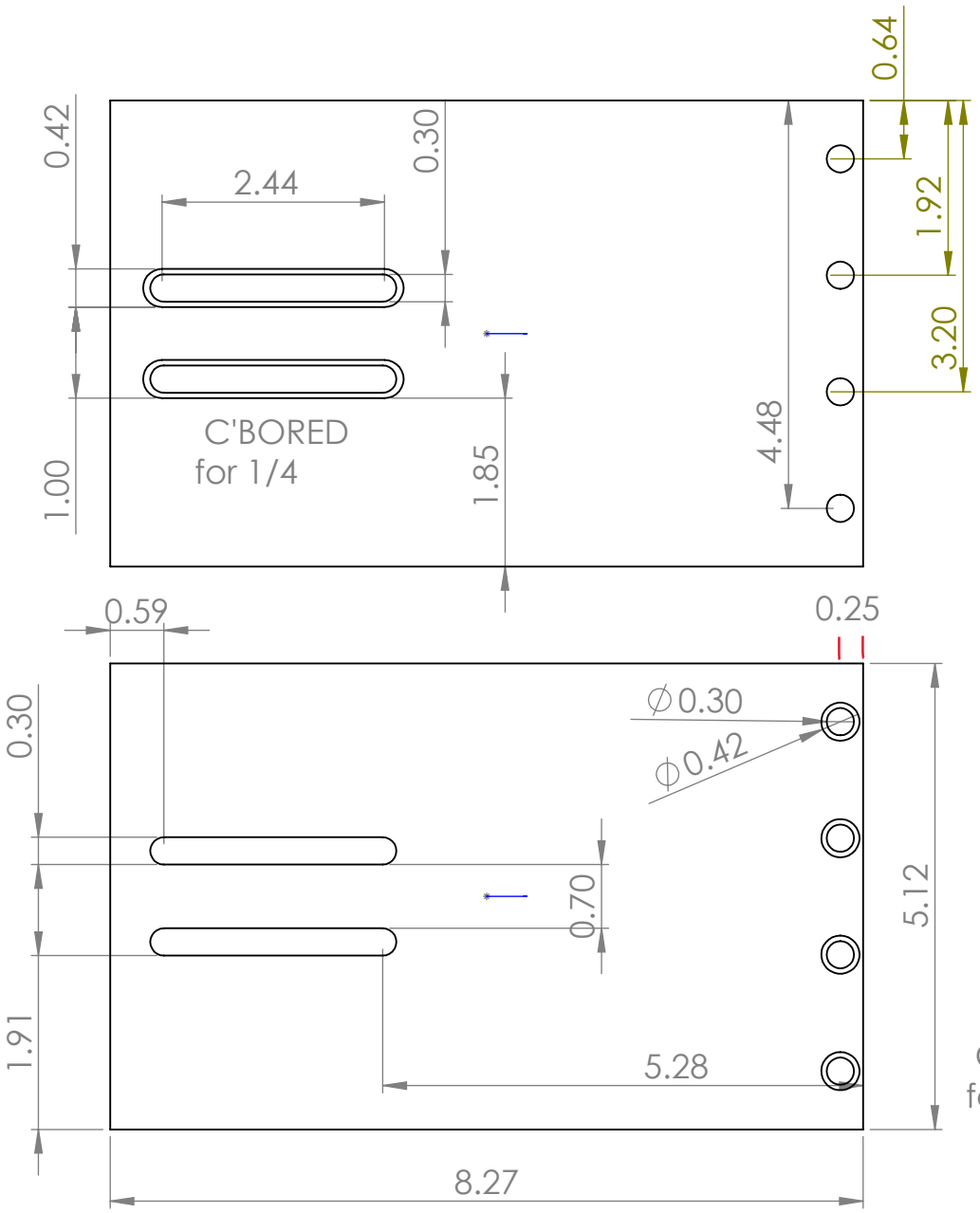
Assembly
- includes
  - base component
  - front component
  - circle component
  - spacer

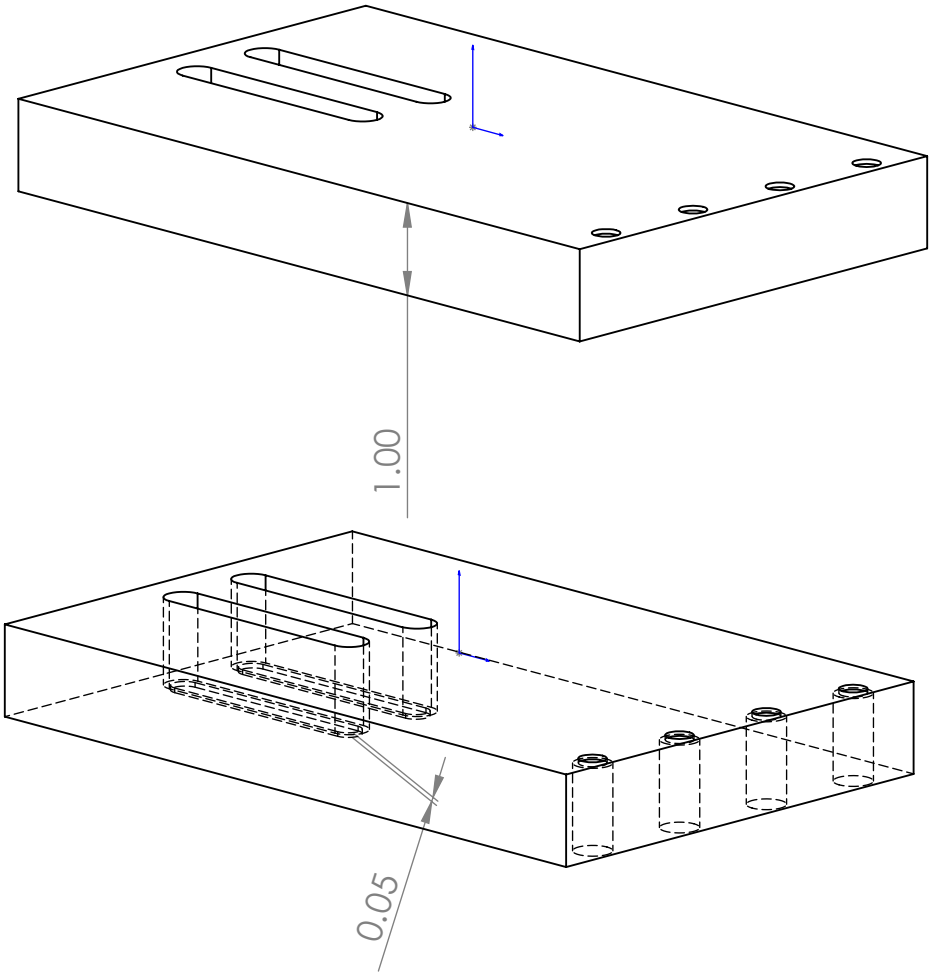






Supplementary Data 4: Mounting stand for EMCCD camera. Part A: overview.

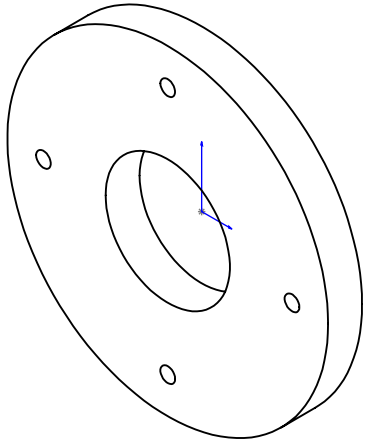


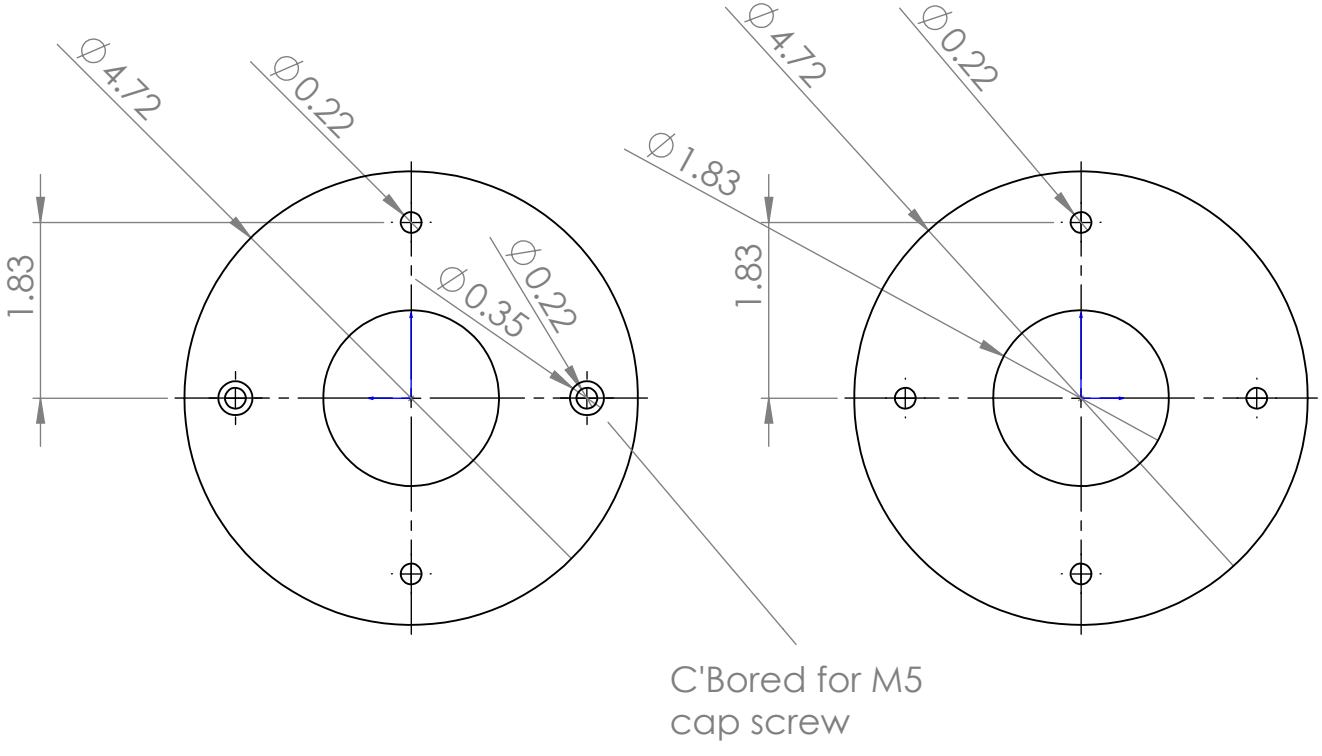


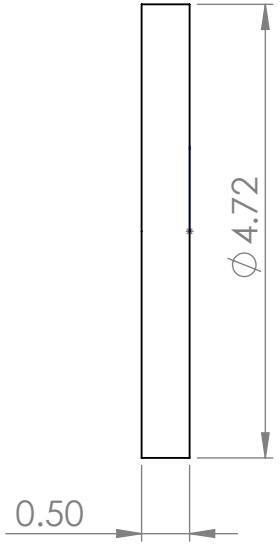
Base Component (aluminum)
-units in inches
-sliding holes 1in apart, made for 1/4 20 cap screws to be completely screwed but hidden
-
-4 holes made for 1/4 20 cap screws to be screwed but hidden in opposite direction to attach to front piece

Supplementary Data 4: Mounting stand for EMCCD camera. Part B: base component.

Circle Component (aluminum)
-sketch units in inches
-circle 2.36in radius, holes along vertical axis have 0.30in diameter and 1.831in from origin for m5 cap screws to line up with arcs from rectangular component
-holes along horizontal axis have same inner circle dimensions as vertical circles but allow screws to be hidden solely for extra support, 0.42in diameter
-1.831in diameter hole through center of piece for light to enter camera lense

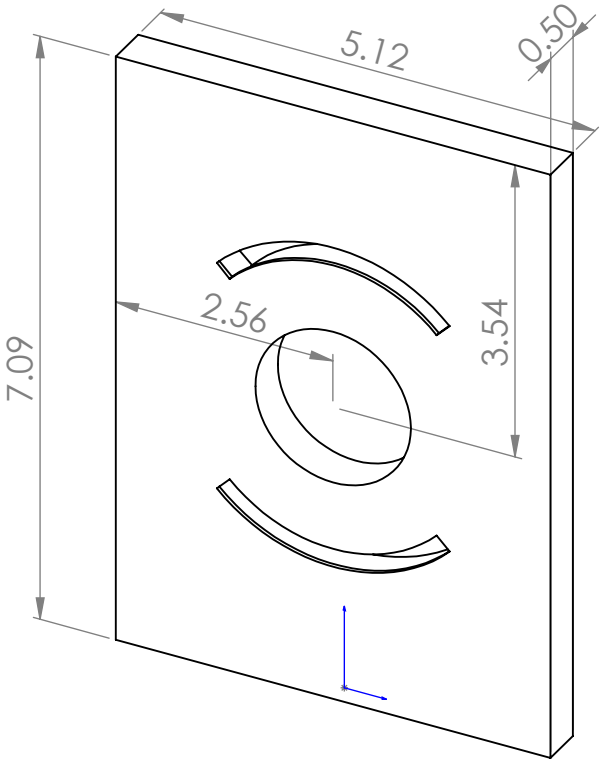


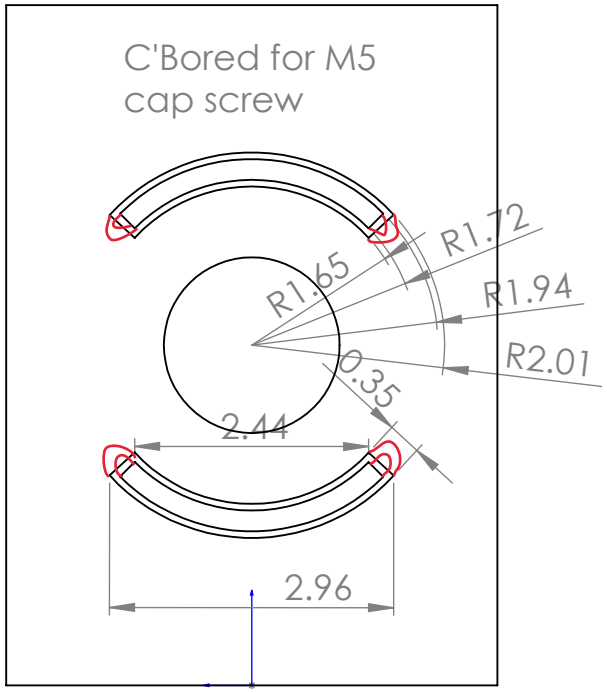


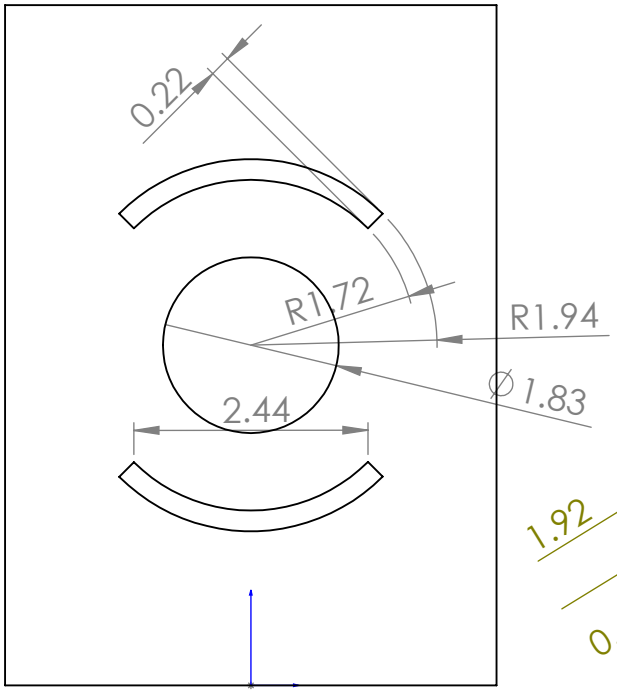


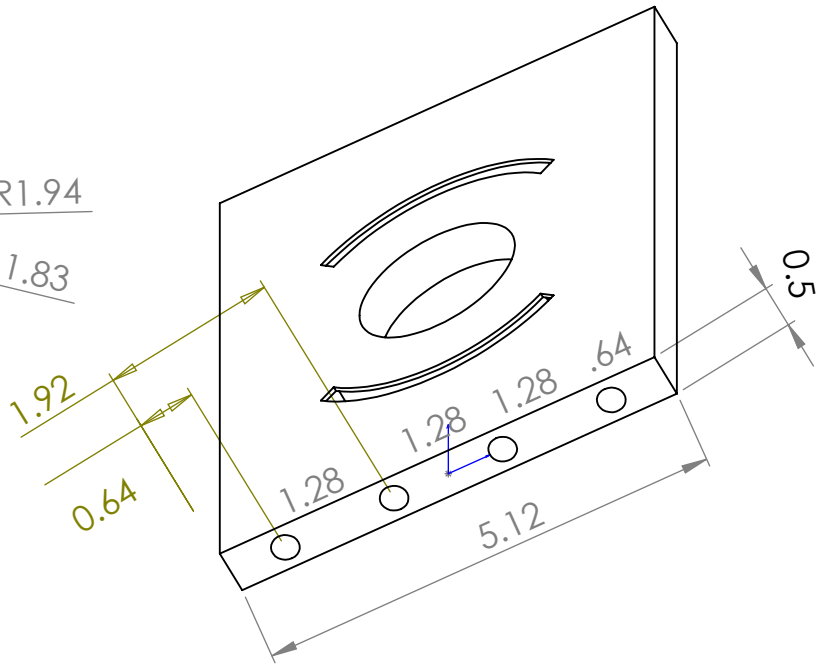
Supplementary Data 4: Mounting stand for EMCCD camera. Part C: circle component.

Front component (aluminum)
-units in inches
-holes in bottom threaded 1in deep for 1/4 20 cap screws,
-circle arcs allow for m5 cap screws to be hidden within the piece and rotate +/- 45 degrees
-circle arcs located at center of rectangle
-centers of screws of interest located 1.831in above and below center point
-1.831in diameter hole through center of piece for light to enter camera lens

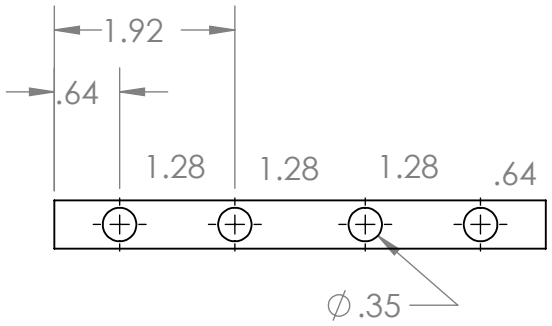


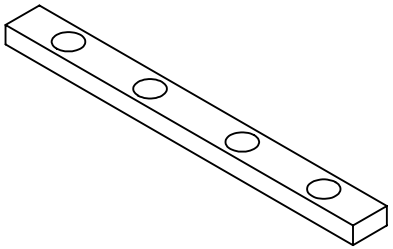


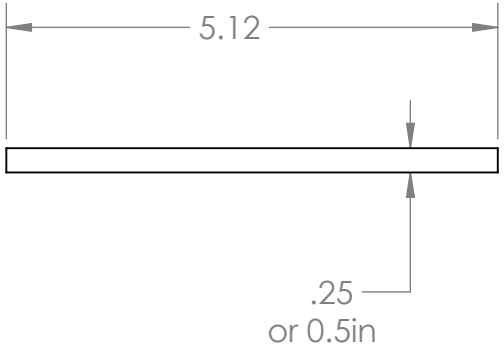


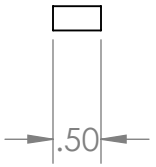


Supplementary Data 4: Mounting stand for EMCCD camera. Part D: front component.









Spacers
-2 1/4 in. thick spacers with 0.35in diameter through holes for use in raising height of front component
-2 1/2in. thick spacers with same geometry

Supplementary Data 4: Mounting stand for EMCCD camera. Part E: spacers.