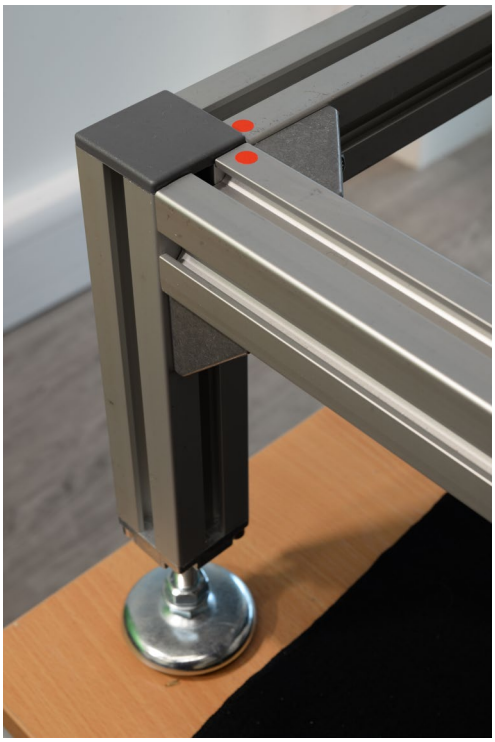
Building your dome



A few warnings: Note that a washer must always be used with the bolts – or the bolt will cut into the aluminium section.

Do not look directly into the LEDs. Dark glasses are provided.

A spanner is provided. Do not over-tighten the bolts (as Aluminium is quite soft). A small lithium driver with an 8mm socket makes building much easier. Bolts are usually inside the grooves but will have moved around in shipping.

1) Start with the four 1m metal parts for the main flat square. They are marked with red, green, blue and yellow dots on top to help identify where they fit. (see Figure 4 Dome quarters have a label: A B C D with A and D nearest to you.) Loosely fit a bracket on the inside of each corner.
2) Turn the 1m square upside down on a flat surface. Add the four legs and tighten the leg brackets once they are aligned (as shown below). As it is upside down and resting on a surface, the plastic top cover of the leg will be roughly flush the top of the side bar. This is not critical as each leg foot can be adjusted to make the whole frame level. You may have to loosen, press together and re-tighten these corners to make them fit tightly.

Figure 1 attaching the legs to the frame. Slide the nuts in to place first.

3) Flip the frame over onto its feet. Add the two verticals, which have two side brackets as shown. They drop below the square base (so that adjustment is possible for long lenses). There are marks on the top of the base square to help to align the camera centre – but these may need adjusting if the camera base is very thick. Use the level to make sure you tighten the bolts so the top bar is horizontal and the vertical bars are vertical.
An extra bracket goes behind and under the frame for stability.

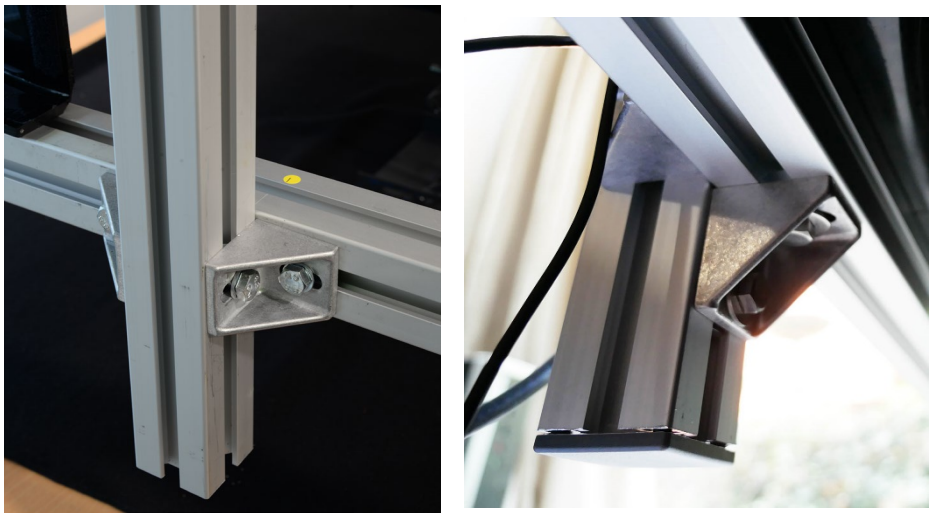


Figure 2 The vertical bars have some adjustment so you need to tighten a bolt when they are vertical. The third bracket underneath can be attached last when the top bar is levelled

Figure 3 a top bar bracket - also note the use of the velcro wrap to tidy cables

4) Add the top bar and brackets (which are larger). Make sure the sections are close together before tightening. The vertical bar is slightly too wide to make this easier.

5) Attach the camera macro slider *behind* the top bar (so the camera is the “correct” way around). Don’t tighten the two bolts completely until the dome is in position – so you can centre the camera over the dome view-hole.

6) Use a level to make sure each stage is horizontal using feet adjustment and vertical adjustment, then do final tighten. A small bubble level is provided.

7) Place the dome quarters onto the square frame in the sequence shown below. Use four loose hand-tight bolts on the sides to hold the quarters in place (shown here as blobs). Once in the correct (even spaces all around) location add the Velcro tapes to the joins.

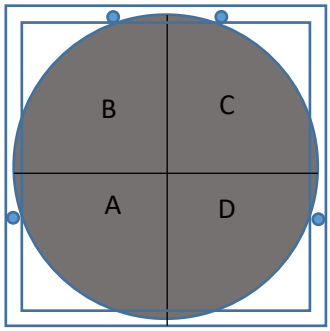


Figure 4 Dome quarters have a label: A B C D with A and D nearest to you.

Figure 5 dome retaining bolts - help to keep the dome in the same place over time. Hand tighten only.

8)

Place the controller in the front-left corner and link the dome quarters to A B C D controller outputs. It can also be placed on the corner of the frame. ***Note that the cables are of different lengths and changing the order of the plugs requires a new .lp file to be generated.*** Use the small screws in the connectors on the cable to secure them (a flat-head screwdriver is helpful).

9) Place the black table cloth under the dome then attach the cloth “skirt” into the inside of the dome (there is Velcro inside the dome on its lower inside edge).
10) Attach camera. It is easiest to lower the slider to gain access to the camera bolt. Tighten with a coin (not too tight but enough so the camera can’t be knocked off-vertical if you re-focus). Adjust camera vertical using a bubble level. The lens just needs to dip slightly into the hole, so you can adjust focus easily.
11) Attach trigger cable from camera into the controller’s trigger socket using and extension lead (2.5mm pin at controller end). Ignore the “Go” input on the controller.
12) Attach camera USB lead to PC (if you are using USB, Wifi is an alternative) for downloading.
13) Turn on the controller mains adaptor then plug its round power plug into the controller and test with the Focus button (only a few LEDs will illuminate, and turn off automatically).
14) The lab-jack lift can be used to place objects under the dome. Turning the lab jack handle to raise the object is usually the best way to focus. As the object will be quite high, be careful not to knock it off if you slide the lift back towards you. A section of black board, plastic or wood has been used by some people to help to slide the lab-jack more easily backwards and forwards.

Enjoy! Contact Kirk Martinez km@ecs.soton.ac.uk if you have queries.