



Hardware

Placement...

If you're building exactly to our dimensions with the parts we used, the configuration below is what we found works best. Any other modifications will require something different. The goal is always this:

- The projector covers your display area without skew and hopefully without cropping the projectors throw area.
- Your camera can see the entire display area without much of the frame. The closer you crop your display area, the better your "touch resolution" will be.
- The IR flood lamps together all of the display area with even distribution. Extremely important!

This will certainly be the most frustrating part of the project. Find a temporary solution that works best, then everything must be secured in as firm a manner as possible. You don't want bumping of the box to throw off all your careful calibration!



Here you can see the placement of every item in the box.



Rationale...

- Projector Lens must be in the center to avoid skewing the image. The back is resting on the support, with the threaded feet extended fully.
- 4 LED clusters must be in each corner, pointed at the opposite corner to maximize their throw distance.
- The camera is placed so it can see the entire display area. We taped it to a spare piece of wood and taped it down to the base. You may want to screw it down.
- The mirror is resting against the side panel and has glued down rests on the bottom.
- The cables are taped out of view of the camera, projector and IR floods and power bars are taped down.
- Once you have the placement of everything finalized, you'll want to cut out holes for ventilation of the projector (it gets *really* hot) and a hole for your cables.

Any setup will require a lot of fiddling, but fiddling is critical. If the image is screwed, so is everything in your applications. If one of your IR flood lamps isn't positioned correctly, you could create a dark spot where touching will be hard to get recognized or a bright spot where you could get "false blobs". Your setup is probably different in a couple ways, so it may not look exactly like we have things in that image. Play with every factor and take your time! Also, take heed of these warnings:

- Don't cut a round hole in the panel you take off as your cable hole. Think about what happens when you thread all the cables through and then take the panel off.
- Things will get hot in there! The scent of pine blowing out of the vent serves as nice air freshener, but all electronics in there are sensitive to heat. Particularly the IR flood lamps. If condensation builds up, you'll start getting weird flickering dark spots. You may want to just remove the cover for it so condensation doesn't build underneath it.