The following are the criteria we determined would be necessary to purchase a certain set of LED lights:

1. Tunable to the parameters we wished to test

   This meant we needed to find either dimmable LEDs and be able to report the wattage coming from them, or locate LED strips that we could cut to the nearest wattage quantity.

2. From a reputable source

   Initially, it was tempting to gravitate toward the utmost cheapest we could find, however after some due diligence with the aid of Dr. DeBartolo, we determined those sources could not be trusted. You will see below some of the other reputable distributors that were investigated, along with the ballpark price for each.

3. Within our budget

   The point of this section is to make a case for our team needing a slight budget increase from the original $500 that each team is allocated at the beginning of the semester. With that in mind, it should come as no surprise that this was by and large our main obstacle. Even after speaking with representatives from multiple companies, we were left with no options that we could move forward with without additional funds.

Research and Products

1. Flexfire LEDs

   A commercial lighting website focused on architectural applications, their representative pointed us to a "solution" that would have run us $1000. After explaining that we were a student-led project group and didn't have infinite funds, there was a prompt "good luck" and the customer service agent dropped the line. After poking about on their website some more, a more fair-priced option was found, but it looked very clunky and still would have run us around $800.

2. Birddog Distributing

   Disregarding the unique website name, this choice seemed like our first backup to the Amazon route. The length of light was purchasable by every half-meter, we would be getting red-blue spectrums optimal for plant growth, and it wouldn't set us over budget. Why didn't we go with this one then? Well, we'd be getting a 120V strip light, which could only be cut to the nearest half-meter, disqualifying our first criteria.

3. Adafruit

   Adafruit was a certified vendor with regards to MSD, and they had LED lighting strips with close to the spectrum of light we wanted. Perfect! Or not, since buying from them would have run us $800. Next!

4. SuperBrightLEDs

   The choice we would have to settle on is one from SuperBrightLEDs. They have a product that is both within the right spectrum, has the ability to be cut, and has a figure after a dollar sign that won't make us lose sleep at night. At $570 (just for the lights), it appears to be the best contender.

Summarized table of LED options:

Distributor/Product	Price	Notes
Flexfire LEDs	$764	LED strip is clunky
Birddog Distributing	$288	Unable to cut to lengths we need
Adafruit	$840	Yikes
SuperBright LEDs	$570	Ding ding ding

Conclusion:

While the options out there may not have been exhausted, so many hours have gone into finding a suitable lighting choice for our project and we would like to move forward at this point. Our hope for this semester was to run testing that we could go off of while designing for the final system, just with the funds that are allocated to us through MSD. We would like to present a flushed out budget proposal to our customer with background knowledge of what will work best, which is why we have not gone to them for funding at this point. Additionally, for an extra ~$300 to accomplish the goals we set out for this semester, it would seem most appropriate to go through MSD.