Technical Assistance Request

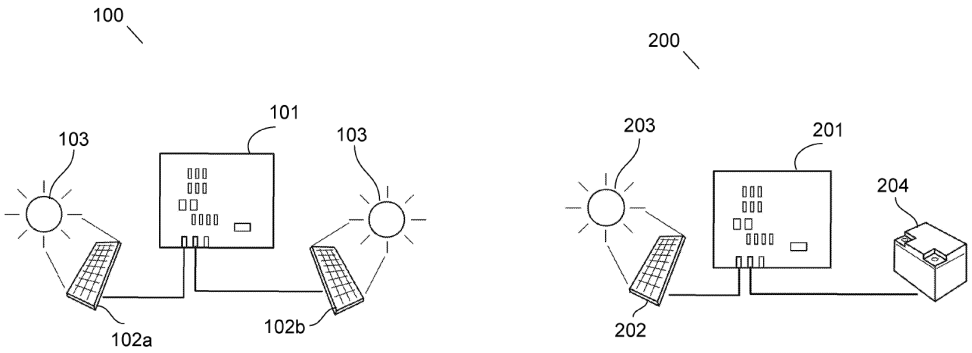
The Humless direct-from-solar variable lighting system has the potential to change the way we light our homes, schools, hospitals, and any other facility that utilizes electric lighting. Up to 20 LED bulbs can be powered by a single 300w solar panel that requires **no inverter to AC** and may be connected to a single DC battery without a separate energy management system. Alternatively, The system can be connected to solar and battery (above and below the charge controller) at the same time so light is available 24 hours a day.

Our team has the engineering resources of a talented group of individuals. Through their efforts, we have been able to produce a working concept. However, we are a small startup (with only 9 employees), and currently lack the resources to move this prototype to market.

We are hopeful that the teams surrounding the American Made organization can help us with several keys areas to move forward in our quest to produce the perfect solar lighting solution at a cost that anyone can afford.

1. **Industrial Design**
While our team of engineers is well versed in electrical circuitry, solar power sources, energy storage, and off-grid solutions, we do not have an industrial designer or 3D modeler on staff. We would love assistance and mentoring to package our original concept in a way that is safe, effective, and makes sense for end users.

As it stands, our current product has the capability to be used within the standard US powergrid or off-grid through solar energy alone during daylight hours, and a battery source if desired throughout the night.



In particular, we would like advisement on:

- Product research
- User analysis
- Ideation
- Design
- Testing and validation

2. Certification

Additionally, we hope for community assistance and knowledge to walk through the UL Certification process. We have questions about the regulation of solar products in general and this product in particular. Legal and technical experts can help us determine if our current prototype meets the necessary standards of safety, help us put into place proper regulatory processes, and determine the proper time to submit our product for testing and certification.

3. Manufacturing

While our team does currently produce solar generators and a versatile energy management system, direct lighting is a new field for us. We need financial and expert assistance in developing a cost-effective manufacturing process. Our ultimate goal is to develop a quality, long-lasting LED solution for homes, schools, and businesses. At the same time, we'd like to remove the high-cost barrier to solar energy solutions by keeping our light at a price point that makes sense for almost any customer.

Key questions we have along these lines are:

- What volume must be produced to maintain a low cost?
- Where can we save on materials without sacrificing quality?
- What is the best way to test this concept on a mid-scale to ensure it's viable?

We could also use assistance with 3D rendering and an eventual CAM prototype.