

## Technical Assistance Request

Conditional upon winning voucher/prize resources, a significant amount of the immediate costs of developing ARAYSTAYS for manufacturing and market is determined by recognizing and vetting testing labs for ARAYSTAYS assessments, and measurements. These labs must be recognized and accredited by Underwriter Laboratories (UL) for providing simulation modeling and expert opinions founded on preliminary testing in support of UL-2703 established criteria and final UL approval. We have set a robust 365-day goal to have a prototype tested, manufactured and to market by Q2 2020. Even though ARAYSTAYS are comprised of 100% stainless steel, we feel all testing validations must be met unless otherwise directed by UL authorities. We are necessarily open to lab recommendations in choosing other composites, however, at this point, stainless steel best suits what we feel will meet the broadest range of weather conditions. Additionally we feel the proven strength of stainless steel provides an extra advantage in withstanding variant wind velocities and more extreme environmental events as well.

At this juncture, three labs, GreenTown Labs, Energy & Power Technology, a division of UL Laboratories and INTERTEK have been identified as uniquely qualified to give ARAYSTAYS a complete, qualified assessment. Therefore to reach our goal of having the most quality-validated product in its field, the following testing criteria must be met.

ARAYSTAYS recognizes the benchmarks established for UL-2703 approval as the industry's Hallmark of Excellence. Additionally, Nationally Recognized Testing Laboratories will be utilized to ensure that our product meets the requirements of both the construction and general industry OSHA electrical standards. An estimate for Product Testing Relating to Listing must also be developed and finalized along with the most advanced Modeling and Simulation Testing available. The most important of which is determining withdrawal loads of attachments under various wind conditions. During the final concept phase, Engineering and Computer-generated Two and Three Dimensional Drawings (CAD) are to be developed to illustrate the engineering components of ARAYSTAYS design and architecture throughout its production history.

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Bonding Path resistance Testing will be given to determine how the module frame is grounded following the bonding path from module to ground. A Terminal Torque Testing is provided so that a screw be inserted ten times to verify the necessary torque. An Accelerated Aging Test will place gaskets and seals under 70-hours of testing. Three tests, including a limited short circuit test at 5000A, will validate ARAYTAYS bonding conductor range of capability.

Regarding environmental testing of ARAYSTAYS, salt spray, carbon dioxide and sulfur dioxide will be utilized to test for corrosion. In order to establish ARAYSTAYS temperature threshold, a temperature cycling test will be conducted 200 times, over a 35-42 days period, with temperatures on a scale from 90-degree C to -40C. A Humidity Freeze Test will test ARAYSTAYS for 10-12 days to validate ARAYSTAYS durability under a radical temperature variation from 25-degrees C, to 85, with an additional drop to -40. And finally ARAYSTAYS metal coating suitability will be ascertained by a Metallic Coating Thickness Test if another material other than stainless steel is accepted.

Our ARAYSTAYS team and development community is satisfied with the design and application process of ARAYSTAYS. As illustrated above, we feel an obligation to put our product to the most inclusive and demanding tests possible; we are confident that it will meet these standards and more. As was mentioned in the introductory paragraph, ARAYSTAYS remains open to other options for composition materials, however, as we have communicated to potential labs in the vetting process, we are dedicated to the highest safety standards possible, the highest quality product that we can get to market and to deliver it for the most fair price practicable. We join the labs mentioned above as more than associates, but partners in adding a significant tool, ARAYSTAYS, to the solar panel industry toolbox; to accept average standards in lab evaluation is unacceptable to ARAYSTAYS core values and our belief in American ingenuity and entrepreneurship