Lighting Global Product Testing Verification
Pico Solar Home System 7000 (Assembled in Ethiopia)

Expiration Date: February 28, 2017[1]
Reference #: fs-pshs7000-2012

This verifies that the Pico Solar Home System 7000 (Assembled in Ethiopia) was tested according to the Quality Test Method stipulated in the latest edition of IEC 62257-9-5[2] and complied with the Lighting Global Quality Standards.[3]

Testing Details:

Product Name:	Pico Solar Home System 7000 (Assembled in Ethiopia)
Model Number:	PSHS 7000
Company Name:	Fosera Group
Country of Origin:	Thailand
Company Contact:	Catherine Adelmann, info@fosera.com
Original QTM Sample Size:	n=6
Renewal Test Conducted:	n/a
Sample Procurement Method:	Random warehouse sampling
Testing Laboratory:	Lighting Research Center, Troy, NY USA

Documentation:

Specifications sheet with verified test results and original version of this verification:
http://www.lightingglobal.org/products/fs-pshs7000

Russell Sturm
Global Head, Energy Access
Lighting Global Project Manager
International Finance Corporation

Note: This verification applies only to the package of components described above, including the Lamp200 and Lamp100. Packages with different components will have different durability and performance.

[1] Lighting Global requires re-testing every two years or upon major product revisions, and in special cases reserves the right to grant an extension on results validity.

[2] http://www.lightingglobal.org/qa/testmethods.html

[3] http://www.lightingglobal.org/qa/standards.html

Type Approval
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Refer to Lighting Global Standardized Specifications Sheet for Summary of Test Results:
http://www.lightingglobal.org/products/fs-pshs7000

Category	Quality Standard	Verdict
Truth In Advertising	Manufacturer accurately specified	Pass
	Product Name and Model Number accurately specified	Pass
	Performance and Component Ratings accurately specified. Any description of the product that appears on the packaging, inside the package and in any media shall be truthful and accurate. No statements shall mislead buyers or end users about the utility of the product. Numeric ratings must deviate no more than 15% from actual performance (note that it is acceptable for actual performance to exceed advertised performance).	Pass
Lumen Maintenance	Average relative light output ≥ 85% of initial light output at 2,000 hours with only one sample allowed to fall below 75% OR All 6 samples maintain ≥ 95% of initial light output at 1,000 hours	Pass
AC-DC Charger Safety	Any included AC-DC charger carries approval from a recognized consumer electronics safety regulator	n/a
Battery Composition	No battery may contain cadmium or mercury at levels greater than trace amounts	Pass
Battery Protection	Protected by an appropriate charge controller that prolongs battery life and protects the safety of the user. 5 out of 6 samples must meet the requirements outlined in Lighting Global Quality Standards.	Pass
Battery Durability	The average capacity loss of 6 samples must not exceed 25% and only one sample may have a capacity loss greater than 35% following the battery durability storage test as defined in IEC/TS 62257-9-5 Annex BB* *This product also meets the Battery Longevity requirement described in KS 2542:2014: the measured capactity after storage is at least 80% of the measured capacity before storage; no more than 1/6 samples fail	Pass
Physical Ingress Protection	Minimum IP2X for all products, IP3X for PV modules, and IP5X for fixed integrated outdoor products	Pass
Water Ingress Protection	Degree of protection required is based on product type: Fixed separate (indoor): No protection required Portable separate: Occasional exposure to rain Portable integrated: Frequent exposure to rain Fixed integrated (outdoor): Permanent outdoor exposure PV modules: Outdoor rooftop installation	Pass

Type Approval Continued
Pico Solar Home System 7000 (Assembled in Ethiopia)

Reference #: fs-pshs7000-2012

Category	Quality Standard	Verdict
Drop Test	Fixed separate (indoor): No requirement All other products: 5 out of 6 samples are functional after drop test; none result in dangerous failures	Pass
Soldering and Electronics Workmanship	Pass soldering and electronics inspection; the maximum prevalence of bad solder joints, poor wiring or overall workmanship failure is 1 out of 6 samples in each category	Pass
Mechanical Durability	5 out of 6 samples are functional after Switch, Connector, Gooseneck and Strain Relief tests; none result in dangerous failures	Pass
Minimum Warranty Terms	Accurately specified and consumer-facing; minimum coverage of at least one year on manufacturering defects under normal use, including the battery. Detailed requirements are specified in the Lighting Global Quality Standards	Pass
Performance Reporting	Light output and the corresponding solar run time are reported on the product packaging for at least the brightest setting.	Pass
	Impact of mobile phone charging on product performance is qualitatively described on packaging.	Pass

Additional details on the requirements listed above are provided in the Lighting Global Quality Standards, available here: https://www.lightingglobal.org/qa/standards/

All Quality Standards are evaluated based on test methods described in the latest edition of IEC/TS 62257-9-5.