

## Solar America Board for Codes and Standards



### A Proposed Standard for: **NAMEPLATE, DATASHEET, AND SAMPLING REQUIREMENTS OF PHOTOVOLTAIC MODULES**

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## A Proposed Standard for: Nameplate, Datasheet, and Sampling Requirements of Photovoltaic Modules

### Study Report Overview

This Solar America Board for Codes and Standards (Solar ABCs) report represents implementation of the March 2011 Solar ABCs policy statement (Photovoltaic Module Power Rating) into a photovoltaic (PV) module standard with a text format acceptable to standard developing organizations such as ASTM International, Institute of Electrical and Electronics Engineers (IEEE), and the International Electrotechnical Commission (IEC). The European Union has developed a related standard (EN 50380, “Datasheet and nameplate information for photovoltaic modules”), and the proposed Solar ABCs standard differs in three major respects:

- The European standard allows production tolerance leniency as well as measurement uncertainty leniency and does not impose specific lower/upper limits for the production tolerance. The proposed Solar ABCs standard addresses these issues.
- The European standard requires reporting of module data at only three rating conditions: standard test conditions (STC), nominal operating cell temperature (NOCT), and low irradiance conditions (LIC). IEC 61853-1 requires reporting the module data at two additional rating conditions of high temperature conditions (HTC) and low temperature conditions (LTC). The proposed Solar ABCs standard recommends the use of the five test conditions required by the IEC 61853-1 standard.
- The European standard does not impose statistical sampling requirement in the selection of modules used for the independent power rating measurements. The proposed Solar ABCs standard incorporates a simple statistical sampling method to determine the required number of samples to be used by the independent testing organizations performing the power rating measurements.

### Why the Proposed Standard is Important

The proposed Solar ABCs standard provides a protocol that standard making organizations can use to develop a PV module standard. It identifies:

- information to be included on PV module nameplates and datasheets,
- five rating conditions under which the performance parameters of PV modules shall be reported, and
- a simple statistical method to determine the number of samples to be used for the power rating measurements.

If adopted, the Solar ABCs standard will make it easier for consumers, states, and organizations providing PV system incentives to more accurately evaluate the performance of PV modules than is possible at present.

### Issues Addressed by this Proposed Standard

Manufacturers typically rate PV modules at standard test conditions only. The Solar ABCs standard would require them to test modules at the additional four test conditions included in the IEC 61853-1. The proposed standard also requires nameplates and datasheets to include specific information, and provides a simple statistical method to determine the number of samples required for the power rating measurements.



## Solar America Board for Codes and Standards Recommendations

Solar ABCs recommends that standard making organizations require PV manufacturers to meet the following requirements:

- After accounting for the light induced degradation, the measured average power shall be equal to or higher than the nominal nameplate power rating at STC and no individual module power shall be more than 3% below nominal.
- At least one module closest to the nominal rated power shall be measured at the other four rating conditions given in IEC 61853-1 standard (NOCT, LIC, HTC, and LTC).
- Nameplates and datasheets shall contain at least the minimum information specified in the Solar ABCs standard.
- The number of samples used to calculate the measured average power shall be determined using the method identified in the Solar ABCs standard.

### For more information please contact

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### Download the full report:

[www.solarabcs.org/nameplate](http://www.solarabcs.org/nameplate)

### For more information, visit the Solar ABCs website:

[www.solarabcs.org](http://www.solarabcs.org)

### About Solar America Board for Codes and Standards

The Solar America Board for Codes and Standards (Solar ABCs) is a collaborative effort among experts to formally gather and prioritize input from the broad spectrum of solar photovoltaic stakeholders including policy makers, manufacturers, installers, and consumers resulting in coordinated recommendations to codes and standards making bodies for existing and new solar technologies. The U.S. Department of Energy funds Solar ABCs as part of its commitment to facilitate widespread adoption of safe, reliable, and cost-effective solar technologies. For more information, visit the Solar ABCs website:

[www.solarabcs.org](http://www.solarabcs.org)

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