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**INDUSTRY STANDARD OF THE
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**Calibration Specification for Solar Cells: Photoelectric
Properties
(English Translation)**

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Introduction

This specification refers to GB/T 6495.1-1996 "Photovoltaic devices - Part 1. Measurement of photovoltaic current - voltage characteristics" and IEC 60904-1:2006 "Optoelectronic device first part. measurement of photovoltaic current-voltage characteristics" (Photovoltaic devices - Part 1.

Measurement of photovoltaic current-voltage characteristics) Related regulations.

To meet the domestic PV industry photovoltaic device performance measurement needs, according to JJF 1071-2010 and JJF 1059.1, this specification on the basis of GB/T 6495.1-1996 and IEC 60904-1:2006, the following content.

--- clear the solar cell photoelectric performance calibration of the specific method (see 7.2);

- an example of the uncertainty of calibration results (see Appendix C);

--- clear the requirements of the calibration result page format (see 8).

This specification is the first release.

Solar cell calibration specification. photoelectric performance

1 Scope

This specification applies to the solar cell photoelectric performance calibration, the main parameters include short-circuit current I_{sc} , open circuit voltage V_{oc} and the maximum output power P_m . In the simulation of light and natural sunlight, the calibration of crystalline silicon solar cells, thin film solar power Pool and other non-silicon-based new solar cells, can refer to the implementation of this specification.

2 reference file

This specification refers to the following documents.

Terms for Solar Photovoltaic Energy Systems GB/T 2297-1989 Photovoltaic devices - Part 1. Measurement of photovoltaic current - voltage characteristics GB/T 6495.1-1996 GB/T 6495.4-1996 Temperature and Irradiation Correction Method for IV Measured Characteristics of Crystalline Silicon Photovoltaic Devices General rules for electrical performance testing of amorphous silicon solar cells GB/T 11011-1989 Photovoltaic devices - Part 1. Measurement of photovoltaic current - voltage characteristics IEC 60904-1:2006 (Photovoltaic devices - Part 1.

Measurement of photovoltaic current-voltage characteristics IEC 60904-9:2007 Photovoltaic devices - Part 9. Solar simulator performance requirements (Photovoltaic devices - Part 9. Solar simulator performance requirements) Test Method for Temperature and Irradiance of Measured IV Characteristics of Photovoltaic Devices IEC 60891:2009 (Photovoltaic devices - Procedures for temperature and irradiance corrections to

measured I-V characteristics) for dated references, only the dated edition applies to this specification; references that are not dated, The latest version (including all modifications) applies to this specification.

3 terms and definitions the following terms and definitions apply to this specification.

3.1 standard test conditions (STC) the total irradiance of the light source for standard solar cells is 1000W/m² and has AM1.5G sunlight Spectral radiation distribution, the test temperature is $(25 \pm 2) ^\circ\text{C}$.

3.2 photoelectric performance photoelectric properties the solar cell's photoelectric performance, current-voltage (IV) characteristics (Figure 1), mainly in the following key parameters Number. short circuit current I_{sc} , open circuit voltage V_{oc} , maximum output power P_m , optimum operating voltage V_m and optimum operating current I_m . And the filling factor FF, the photoelectric conversion efficiency η , and the short-circuit current density J_{sc} can be calculated.