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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 6495.8-2025

Replacing GB/T 6495.8-2002

**Photovoltaic devices - Part 8: Measurement of spectral
responsivity of a photovoltaic(PV) device**

光伏器件 第8部分：光伏器件光谱响应的测量

(English Translation)

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents".

Drafting.

This document is Part 8 of GB/T 6495 "Photovoltaic Devices". GB/T 6495 has already published the following parts.

- Part 1: Measurement of Photovoltaic Current-Voltage Characteristics;
- Part 1-1.Measurement of Current-Voltage Characteristics of Multijunction Photovoltaic Devices;
- Part 2: Requirements for Standard Photovoltaic Devices;
- Part 3: Measurement Principle of Ground-Based Photovoltaic Devices Based on Standard Spectral Irradiance Data;
- Part 5: Determining the Equivalent Cell Temperature (ECT) of Photovoltaic Devices Using the Open-Circuit Voltage Method;
- Part 7: Calculation Method for Spectral Mismatch Correction in Photovoltaic Device Measurements;
- Part 8: Measurement of the Spectral Response of Photovoltaic Devices;
- Part 8-1.Measurement of the Spectral Response of Multijunction Photovoltaic Devices;
- Part 9: Characteristic Classification of Solar Simulators;
- Part 10: Methods for measuring linear correlation and linearity;
- Part 11: Initial light-induced degradation test method for crystalline silicon solar cells.

This document replaces GB/T 6495.8-2002 "Photovoltaic Devices - Part 8: Measurement of Spectral Response of Photovoltaic Devices", and is consistent with GB/T 6495.8-Compared to 2002, aside from structural adjustments and editorial changes, the main technical changes are as follows.

- a) The scope has been changed (see Chapter 1, Chapter 1 of the 2002 edition);

- b) Added terms and definitions (see Chapter 3);
- c) Added "Identifier" (see Chapter 4);
- d) The "Testing" section has been revised to combine "Special Requirements for Thin Film Devices" and "Measurement of Relative Spectral Response" (see Chapter 5, 2002 edition). Chapters 3 and 4);
- e) A general description of spectral response measurements has been added (see Chapter 6);
- f) The term "device" has been added (see Chapter 7);
- g) Added "Spectral response measurement using a constant light source" (see Chapter 8);
- h) Added "Spectral Response Measurement under Pulsed Light" (see Chapter 9);
- i) Added "Measurement of Series Components" (see Chapter 10);
- j) A "Report" has been added (see Chapter 11).

This document is equivalent to IEC 60904-8:2014 "Photovoltaic devices - Part 8: Measurement of spectral response of photovoltaic devices".

The following editorial changes have been made to this document.

---Adjust the scope of the chapter description;

---The reference to IEC 61646 has been removed.

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the Ministry of Industry and Information Technology of the People's Republic of China.

This document is under the jurisdiction of the National Technical Committee on Standardization of Solar Photovoltaic Energy Systems (SAC/TC90).

Introduction

GB/T 6495 proposes methods for measuring the performance of photovoltaic devices, as well as standards, value transfer, and result correction related to performance measurement.

The requirements for the classification of testing equipment, etc., have positive guiding significance for the performance measurement of photovoltaic devices such as photovoltaic cells and photovoltaic modules.

GB/T 6495 is proposed to consist of the following parts.

---Part 1: Measurement of Photovoltaic Current-Voltage Characteristics. The purpose is to specify the basic requirements for measuring the IV curve of photovoltaic devices.

---Part 1-1.Measurement of Current-Voltage Characteristics of Multijunction Photovoltaic Devices. The purpose is to specify the measurement of the IV characteristics of multijunction photovoltaic devices.

Quantification method.

---Part 1-2.Measurement of Current-Voltage Characteristics of Bifacial Photovoltaic Devices. The purpose is to specify the IV characteristics measurement of bifacial photovoltaic modules.

Quantification method.

---Parts 1-3.Measurement of Current-Voltage Characteristics of Curved Photovoltaic Devices. The purpose is to specify the measurement of the IV characteristics of curved photovoltaic devices.

Quantification method.

---Part 2: Requirements for Standard Photovoltaic Devices. The purpose is to specify the requirements for standard photovoltaic devices.

---Part 3: Measurement Principles of Ground-Based Photovoltaic Devices Based on Standard Spectral Irradiance Data. The aim is to provide standard photovoltaic irradiance data.

Degree data.

---Part 4: Procedures for Establishing Standard Photovoltaic Device Calibration Traceability. The purpose is to establish traceability for photovoltaic device calibration program.

---Part 5: Determining the Equivalent Cell Temperature (ECT) of Photovoltaic Devices Using the Open-Circuit Voltage Method. The aim is to define the equivalent cell temperature (ECT) of photovoltaic devices.

Method for testing the open-circuit voltage of battery temperature.

---Part 7: Calculation Method for Spectral Mismatch Correction in Photovoltaic Device Measurements. The purpose is to specify the calculation method for spectral mismatch correction.

---Part 8: Measurement of the Spectral Response of Photovoltaic Devices. The purpose is to specify the methods for measuring the spectral response.

---Part 8-1.Measurement of the Spectral Response of Multijunction Photovoltaic Devices. The purpose is to specify the measurement method for the spectral response of