

ICS 27.160  
CCS K 83



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

**GB/T 46982-2025**

Replacing GB/T 6495.4-1996

---

**Photovoltaic devices - Procedures for temperature and  
irradiance corrections to measured I-V characteristics**

光伏器件 I-V特性的温度和辐照度修正方法

**(English Translation)**

**Issued on: December 31, 2025**

**Implemented on: July 1, 2026**

---

**Issued by: State Administration for Market Regulation**

## Table of Contents

|                                                                                     |  |
|-------------------------------------------------------------------------------------|--|
| Preface                                                                             |  |
| 1 Scope                                                                             |  |
| 2 Normative References                                                              |  |
| 3 Terms and definitions, symbols and abbreviations                                  |  |
| 4 Revision Procedure                                                                |  |
| 4.1 General Provisions                                                              |  |
| 4.2 Correction Procedure 1                                                          |  |
| 4.3 Revision Procedure 2                                                            |  |
| 4.4 Revision Procedure 3                                                            |  |
| 4.5 Revision Procedure 4                                                            |  |
| 5 Determination of Temperature Coefficient                                          |  |
| 5.1 General Provisions                                                              |  |
| 5.2 Device                                                                          |  |
| 5.3 Procedure for simulating sunlight under natural or steady-state conditions      |  |
| 5.4 Program 14 under the Pulse Solar Simulator                                      |  |
| 5.5 Calculation of Temperature Coefficient                                          |  |
| 6 Determination of internal series resistances $R_S$ and $R'_S$                     |  |
| 6.1 General Provisions                                                              |  |
| 6.2 Correcting the determination of $R_S$ in procedures 1 and 4                     |  |
| 6.3 Determination of $B_1$ and $B_2$ in Correction Procedure 2                      |  |
| 6.4 Determining $R'_S$ in Correction Procedure 2                                    |  |
| 6.5 Correction of $R_S$ determination in procedure 4                                |  |
| 7 Determination of Curve Correction Factors $\kappa$ and $\kappa'$                  |  |
| 7.1 General Provisions                                                              |  |
| 7.2 Program                                                                         |  |
| 8 Report                                                                            |  |
| Appendix A (Informative) Alternative Procedure for Determining Series Resistance    |  |
| A.1 General Provisions                                                              |  |
| A.2 Measuring the differential resistance at VOC using the reciprocal of irradiance |  |
| Reference                                                                           |  |

## 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 replaces GB/T 6495.4-1996 "Temperature and Irradiance Correction Methods for Measured IV Characteristics of Crystalline Silicon Photovoltaic Devices", and is consistent with...

Compared with GB/T 6495.4-1996, apart from structural adjustments and editorial changes, the main technical changes are as follows.

---Based on the application scenario, corresponding IV characteristic correction methods have been added (see 4.3, 4.4);

---Added a correction procedure 4 (see 4.5) for crystalline silicon photovoltaic modules with unknown temperature coefficients;

---The existing correction procedures have been clarified to improve the accuracy of measurements and reduce measurement uncertainty (see 4.1).

This document adopts IEC 60891:2021 "Photovoltaic devices IV - Temperature and irradiance correction methods for measured characteristics".

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).

## 1 Scope

This document specifies the temperature and irradiance correction methods for the measured IV (current-voltage) characteristics (also known as IV curves) of photovoltaic devices, and Furthermore, procedures for determining factors related to these corrections have been established. IV measurements for photovoltaic devices should be performed in accordance with IEC 60904-1 and its related sections.

The process will proceed in stages.

This document applies to temperature and irradiance corrections for the measured IV characteristics of photovoltaic devices under normal conditions. Photovoltaic devices include those with or without...

Individual photovoltaic cells, photovoltaic cell strings, or modules with protective materials. Different IV curve correction parameters apply to each type.

The temperature coefficient of a component (or battery string) can be calculated based on the measurement results of individual cells, but for its internal series connection...

Resistance and curve correction factors should be measured individually for each module or cell string. IV correction parameters should be used for photovoltaics that have already been tested.

The specifications are valid, but there may be variations for photovoltaic devices from the same production batch or with the same glass type.

## 2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included.

For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies.

This document.

**Note:** GB/T 6495.1-2025 Photovoltaic devices - Part 1: Measurement of photovoltaic current-voltage characteristics (IEC 60904-1:2020, IDT) IEC TS60904-1-2 Photovoltaic devices - Part 1-2.Measurement of current-voltage characteristics of bifacial photovoltaic devices Note. GB/T 6495.2-2025 Photovoltaic devices - Part 2: Requirements for standard photovoltaic devices (IEC 60904-2:2023, IDT) Note. GB/T 6495.7-2025 Photovoltaic devices - Part 7: Calculation method for spectral mismatch correction in photovoltaic device measurements (IEC 60904-7:2019, IDT) IEC 60904-8 Photovoltaic devices - Part 8: Measurement of the spectral response of photovoltaic devices Note. GB/T 6495.8-2025 Photovoltaic devices - Part 8: Measurement of spectral response of photovoltaic devices (IEC 60904-8:2014, IDT) IEC 60904-10:2020 Photovoltaic devices - Part 10: Methods for measuring linear correlation and linearity characteristics Note. GB/T 6495.10-2025 Photovoltaic devices - Part 10: Methods for measuring linear correlation and linearity characteristics (IEC 60904-10:2020, IDT)