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**Requirements for the nameplate labelling of photovoltaic
modules**

光伏组件铭牌标识要求

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Foreword

This document conforms to GB/T 1.1-2020 "Standardization Work Guidelines Part

1. Structure and Drafting Rules of Standardization Documents". Drafting is scheduled. 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 and is under the jurisdiction of the Ministry of Industry and Information Technology of the People's Republic of China. Photovoltaic module nameplate marking requirements

1. Scope This document specifies the general requirements and marking requirements for nameplates of ground-mounted photovoltaic modules. This document applies to nameplate labeling of crystalline silicon photovoltaic modules and thin-film photovoltaic modules intended for long-term outdoor use. Other types of photovoltaic modules... For reference use of the Volt component. This document does not apply to space-based photovoltaic modules and concentrated photovoltaic modules.

4 General Requirements

- 4.1 The content of the nameplate markings should be complete, objective, and accurate.
- 4.2 Nameplate markings and descriptions shall use standard Chinese characters officially promulgated and implemented by the state, and may also use Hanyu Pinyin, minority

languages, or foreign languages. Text. When using, the Chinese text shall prevail.

4.3 The nameplate should be clear and easy to identify and read, and should remain unblurred and identifiable throughout the expected lifespan of the photovoltaic module.

4.4 The nameplate shall be solvent resistant and abrasion resistant, and the text shall be indelible. It shall meet the requirements of

10.6 in GB/T 20047.2-2025.

4.5 Nameplate installation should use adhesives or mechanical fixing methods that are resistant to high temperature and humidity and ultraviolet radiation to ensure the expected service life of the photovoltaic modules. It is firmly secured and will not fall off.

4.6 The nameplate should be placed in a location that is easily visible and legible, and should not affect the normal use, transportation, installation and maintenance of the product.

4.7 The nameplate should include a QR code. The QR code should link to the component's nameplate information (see 5.1) and its temperature coefficient and bifaciality coefficient (suitable for use with other components). (Time required), installation manual, etc. If the barcode identifies the production address and production date, the QR code information should include the barcode and the production address and date. The correspondence between production dates. The QR code link should be accessible normally within the expected lifespan of the photovoltaic modules.

4.8 For components used in specific scenarios (such as building-integrated photovoltaic modules, offshore photovoltaic modules, etc.), the content of the nameplate markings should conform to the specific requirements. Application scenario requirements, such as the requirement that building photovoltaic modules should be labeled with fire resistance ratings, etc.

5 Labeling Requirements

5.1 General Rules The nameplate should include the photovoltaic module's model, name, trademark, manufacturer's name, manufacturer's address, electrical performance parameters, dimensions, and weight. Maximum system voltage, maximum rated overcurrent, electrical protection category, and electric shock protection markings. See Appendix A for an example of nameplate markings.

5.2 Product Name Product names should be clear and unambiguous.

5.3.1 General Requirements

5.3.1.1 Electrical performance parameters include nominal power, nominal short-circuit current, nominal open-circuit voltage, nominal maximum power point current, and nominal

maximum power. Point voltage. The electrical performance parameters of bifacial modules should include nominal bifacial power, nominal bifacial open-circuit voltage, and nominal bifacial short-circuit current.

5.3.1.2 The measurement methods for electrical performance parameters shall comply with GB/T 6495.1-2025 or other equivalent methods. Test equipment and procedures are detailed in [link to test procedures]. Appendix B.

5.3.1.3 The measurement results of electrical performance parameters shall be traceable to the national metrological standard in accordance with the requirements of IEC 60904-4.(Level 1 standard photovoltaic module quantity) Value traceability requirements refer to JJF 2061.

5.3.1.4 The original data of electrical performance parameter measurements should be verifiable and cannot be altered or replaced. Records should be retained for at least the time specified for the photovoltaic module. Expected service life of the component.

5.3.2 Nominal Power

5.3.2.1 The nominal power P_{max} (NP) is in watts (W). The nominal power tolerance should be indicated.

5.3.2.2 Before leaving the factory, the components shall undergo I-V characteristic testing under standard test conditions, and the measured maximum power value P_{max} (Meas) shall be compared with the nominal power. The deviation of P_{max} (NP) should not exceed the smaller of the upper and lower limits of the tolerance or $\pm 2\%$, as shown in formula (1) or formula (2). For thin films and perovskites... For mining photovoltaic modules, the deviation should not exceed $\pm 5\%$, see formula (3).

5.3.3 Nominal open-circuit voltage

5.3.3.1 The nominal open-circuit voltage VOC (NP) is in volts (V). The open-circuit voltage tolerance should be specified.

5.3.3.2 Before leaving the factory, the components should undergo I-V characteristic testing at STC. The deviation between the nominal value and the test result should not exceed $\pm 3\%$. For thin... For film and perovskite photovoltaic modules, the deviation should not exceed $\pm 5\%$.

5.3.4 Nominal short-circuit current

5.3.4.1 The nominal short-circuit current ISC (NP) is in amperes (A). Short-circuit current tolerances should be specified.

5.3.4.2 Before leaving the factory, the components shall undergo I-V characteristic testing at STC, and the deviation between the nominal value and the test result shall not exceed

±5%.

5.3.4.3 The verification of the nominal short-circuit current $I_{SC}(NP)$ of the component shall conform to the verification formula (6).

5.3.5 Maximum power point voltage

5.3.5.1 Maximum power point voltage V_{mpp} (NP) is in volts (V).

5.3.5.2 I-V characteristic testing should be performed at STC before the components leave the factory.

5.3.6 Maximum power point current

5.3.6.1 The nominal short-circuit current I_{mp} (NP) is measured in amperes (A).

5.3.6.2 I-V characteristic testing should be performed at STC before the components leave the factory.

5.3.7 Nominal power on both sides

5.3.7.1 Bifacial Nominal Power P_{max} (BNPI) is the Bifacial Nameplate Irradiance (BNPI) test. The maximum power under the specified conditions, in watts (W). The nominal power tolerance should be indicated on both sides.

5.3.7.2 The deviation between the nominal power of the two sides and the maximum power under BNPI conditions obtained according to the method of IEC TS 60904-1-2 should not exceed [the specified value]. Exceeding ±3%. For thin-film and perovskite photovoltaic modules, the deviation should not exceed ±5%.

5.3.8 Bilateral Open Circuit Voltage

5.3.8.1 The double-sided open-circuit voltage V_{OC} (BNPI) is the open-circuit voltage corresponding to the BNPI test conditions, in volts (V). It should be marked as double-sided. Open-circuit voltage tolerance.

5.3.8.2 The deviation between the double-sided open-circuit voltage and the open-circuit voltage under BNPI conditions obtained according to the method of IEC TS 60904-1-2 should not exceed [the specified value]. Exceeding ±5%.

5.3.9 Bilateral Short-Circuit Current

5.3.9.1 The bi-directional short-circuit current I_{SC} (BNPI) is the short-circuit current corresponding to the BNPI test conditions, in amperes (A). Bi-directional should be indicated. Short-circuit current tolerance.

5.3.9.2 The deviation between the bi-directional short-circuit current and the short-circuit