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Solar simulators for crystalline solar cells and modules

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C 8912:1998

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of International Trade and Industry through deliberations at Japanese Industrial Standards Committee in accordance with the Industrial Standardization Law. Consequently **JIS C 8912:1989** is replaced with **JIS C 8912:1998**.

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4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

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Solar simulators for crystalline solar cells and modules

Introduction In the application of a Standard, normative references to the Standard shall be simultaneously referred to. It is often necessary to compare with similar Standards, if any.

This Japanese Industrial Standard has been prepared based on IEC 60904-9, *Photovoltaic devices—Part 9: Solar simulator performance requirements*, published in 1995 without any modification in technical contents, except that items not specified in the corresponding International Standard (measurement procedures or the like) are added.

1 Scope This Japanese Industrial Standard specifies solar simulators for crystalline solar cells and modules used for the measurement of the outputs of terrestrial flat plate non-concentrating crystalline solar cells and crystalline solar cell modules (hereafter referred to as “solar cells and modules”) intended for power generation, (which are referred to as “solar simulators,” hereafter).

Remarks : The normative references to this Standard are given below.

JIS C 8911 *Secondary reference crystalline solar cells*

JIS C 8913 *Measuring method of output power for crystalline solar cells*

JIS C 8914 *Measuring method of output power for crystalline solar PV modules*

JIS Z 8103 *Glossary of terms used in instrumentation*

JIS Z 8120 *Glossary of optical terms*

2 Definitions For the purpose of this Standard, in addition to the definitions specified in JIS C 8913, JIS C 8914, JIS Z 8103 and JIS Z 8120, the following principal definitions apply:

- (1) **irradiance** The value of radiant flux incident to the face of solar cell and module divided by area of this face.
- (2) **positional non-uniformity of irradiance** The irregularity of irradiance depending on position. It is represented by the following formula.

$$\Delta E = \pm \frac{E_{\max} - E_{\min}}{E_{\max} + E_{\min}} \times 100$$

where, ΔE : positional non-uniformity of irradiance (%)

$E_{\max}$: maximum value of irradiance (W/m²)

$E_{\min}$: minimum value of irradiance (W/m²)

- (3) **temporal instability of irradiance** The changing rate of irradiance in the specified period of time. It is represented by the following formula.

$$\Delta E = \pm \frac{E_{\max} - E_{\min}}{E_{\max} + E_{\min}} \times 100$$