



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS C 8915 : 1998

**Measuring methods of spectral
response for crystalline solar cells
and modules**

ICS 27.160

Descriptors : solar cells, crystal systems, spectra, optical measurement, solar radiation, illuminance, modules

Reference number : JIS C 8915 : 1998 (E)

C 8915:1998

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 8915 : 1989** is replaced with **JIS C 8915 : 1998**.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have technical properties. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public, utility model right or application for registration of utility model after opening to the public which have the said technical properties.

Date of Establishment: 1989-11-01

Date of Revision: 1998-02-20

Date of Public Notice in Official Gazette: 1998-02-20

Investigated by: Japanese Industrial Standards Committee

Divisional Council on Electronics

JIS C 8915:1998, First English edition published in 1999-03

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 1999

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

Measuring methods of spectral response for crystalline solar cells and modules

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

This Japanese Industrial Standard has been prepared based on **IEC 60904-8** *Photovoltaic devices—Part 8: Guidance for the measurement of spectral response of a photovoltaic (PV) device*, published in 1995, without any modification in technical contents.

1 Scope This Japanese Industrial Standard specifies the measuring methods of relative spectral response of terrestrial flat plate non-concentrating crystalline solar cells and modules intended for power generation (hereafter referred to as “solar cells and modules”).

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

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 8113 *Glossary of lighting terms*

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, JIS Z 8113 and JIS Z 8120, the following principal definitions apply:

- (1) **white bias light** The normal white light which is irradiated overlapped on the chopped monochromatic light to carry out the measurement on the solar cell under operating conditions when the spectral response of the solar cell to be measured (called specimen) is measured by irradiating chopped monochromatic light.
- (2) **positional non-uniformity of irradiance** The non-uniformity of irradiance due to position is expressed 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) **radiometer** A thermal type radiometer without wavelength dependency which is calibrated by a standard lamp or absolute radiometer and consisting of a thermocouple or thermopile.
- (4) **transmission ratio at foot** The ratio of the transmittances at wavelength ± 100 nm apart from the wavelength of transmission center of a filter and the maximum transmittance.