

CEP-2000 Spectral Response measurement system

Evaluation for dye sensitized and organic thin film cells



*Actual color of the instrument is black

By irradiating monochromatic light to the solar cell in constant energy or constant photons that does not have dependency on the wavelength, the model CEP-2000 is capable to measure the spectral response (A/W) and quantum efficiency of the solar cell (IPCE, QE).

The CEP-2000 has been designed for the measurement of organic solar cells which require much stronger constant energy (max. $5\text{mW}/\text{cm}^2$) and constant photons (max. $10^{16}\text{photon}/\text{cm}^2$) compared with that of silicon cells.

A white bias light source is available as a standard which enables the model CEP-2000 to measure the I-V curve with the AM-1.5G filter as a solar simulator easily in addition to spectral response measurement under the pseudo sunlight.

■ Specifications

Measurement items	Spectral response, I-V curve, Quantum efficiencies
Wavelength range	300~1200nm
Monochromatic light	
Irradiation area	10×10mm
Wavelength purity	Variable, Max. 24nm
Irradiation Intensity	0.5~5mW/cm ² (400~700nm) 0.1~1mW/cm ² (300~1200nm)
In-plane non uniformity	±5%
Constancy of wavelength intensity	±3%
Irradiation mode	Constant energy, Constant photons
Measurement mode	DC and AC (0.1 ~ 100Hz)
White light bias	
Irradiation area	20×20mm
Spectral coincidence	Class A (0.75~1.25)

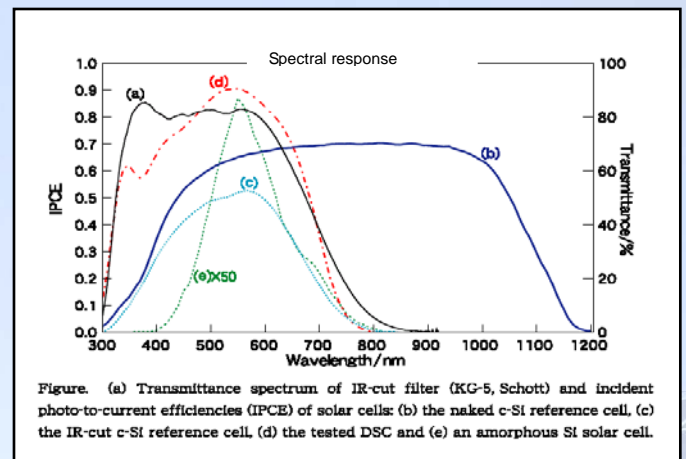
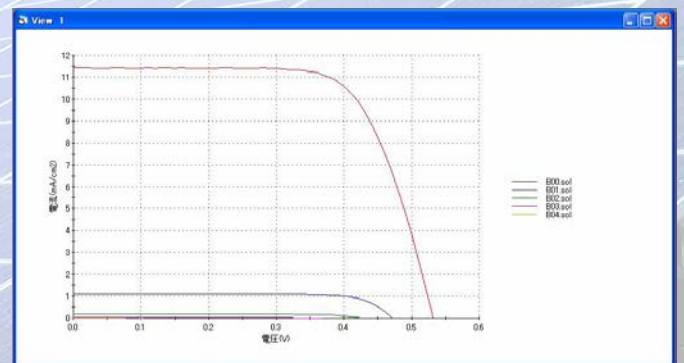


Figure. (a) Transmittance spectrum of IR-cut filter (KG-5, Schott) and incident photo-to-current efficiencies (IPCE) of solar cells: (b) the naked c-Si reference cell, (c) the IR-cut c-Si reference cell, (d) the tested DSC and (e) an amorphous Si solar cell.

The above data was kindly provided by Professor Yanagida of School/Graduate School of Engineering Osaka University



I-V measurement data (an example)

*The specifications and appearance are subject to change without prior notice.

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