

Specifications

No.WebFlyer-BIR-50-1401YN01-E

Model	BIR-50 Solar Cell Light Resistance Testing System	
Irradiation Intensity	1SUN (equivalent to 100mW/cm ²)	
Irradiation area	50mm x 50mm	
Spectral match	Class A(0.75 ~ 1.25)	*JIS C8912 C8933
Non-uniformity	Class A(within ±2%)	*JIS C8912 C8933
Instability of irradiance	Class A(within ±1%)	*JIS C8912 C8933
Setting temperature range	20 ~ 90°	
Temperature precision	Within ±1°C (within ±0.5 between 25 ~ 60°C)	
Humidity measurement range	0~100%RH	*Humidity can not controlled.
Humidity precision	±2% (@25°C 0 ~ 90%RH)±2%	
Data processing	I-V measurement softwareI-V (JSC, Open circuit voltage, Maximum power, Operating voltage)	

Option

● Color filter
To irradiate the light with the selected wavelength range (for an example, removing the ultra violet light)

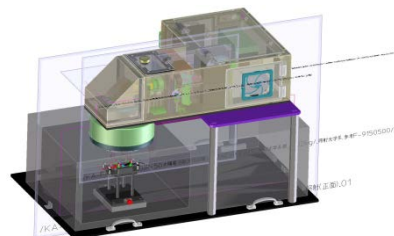
● ND filter
To irradiate the light with intensity attenuated (ND50% and etc.)

● Various sample stage/holder
Sample stage for back electrode type sample, DSC sample stage and etc.

* Dimensions are approximate ones. The appearance and dimensions will be changed due to addition of options or technical changes.

** Specifications and other information described in this catalog are subject to change without prior notice.

Dimensions (unit :mm)



Approx. W1000×D620×H700mm (Xenon power supply, ammeter and PC are not included.)

BIR-50 Solar Cell Light Resistance Testing System



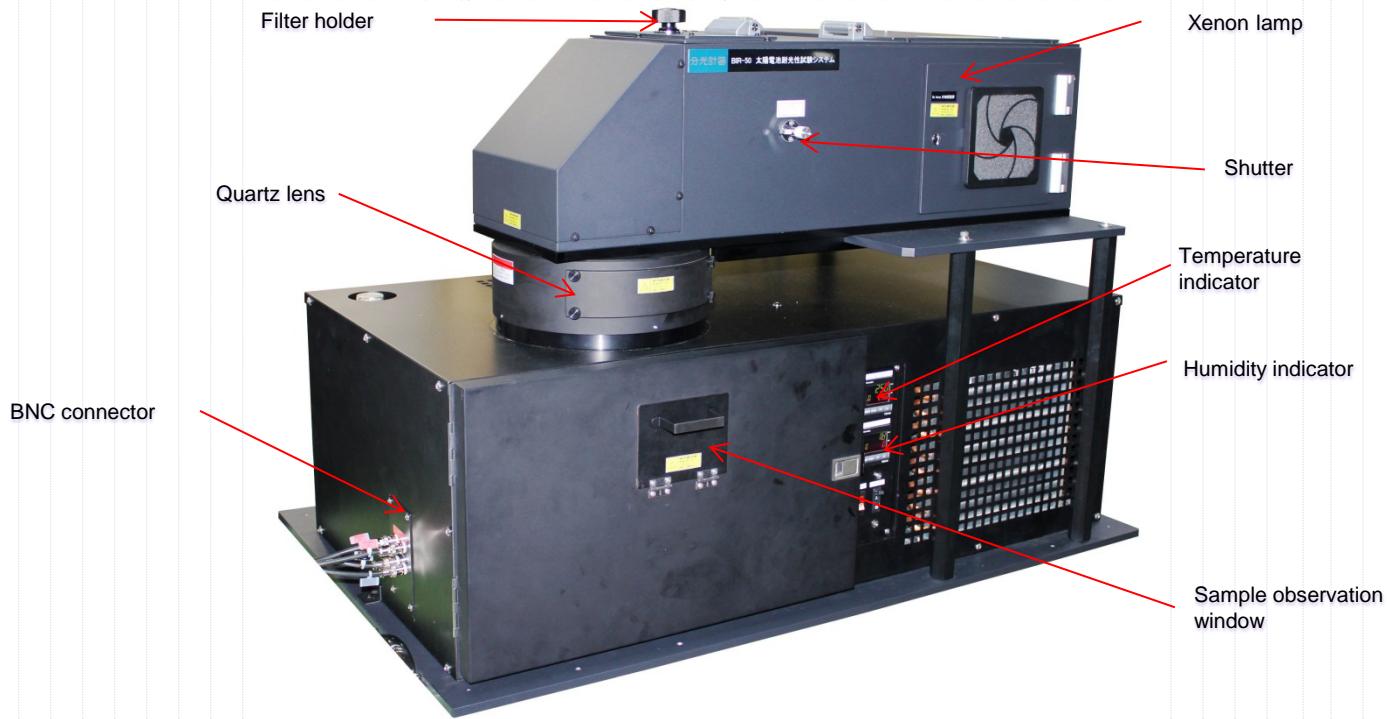
- Long accurate light degradation test with the solar simulator (class AAA)
- Excellent stability of light intensity such as within ±1% with our unique light intensity feedback system
- I-V measurement under constant temperature atmosphere (20 ~ 90°C)
- Degradation test with specific wavelength range setting the optional filters



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Solar Cell Light Resistance Test

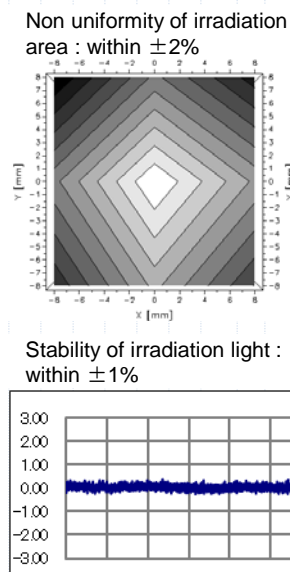
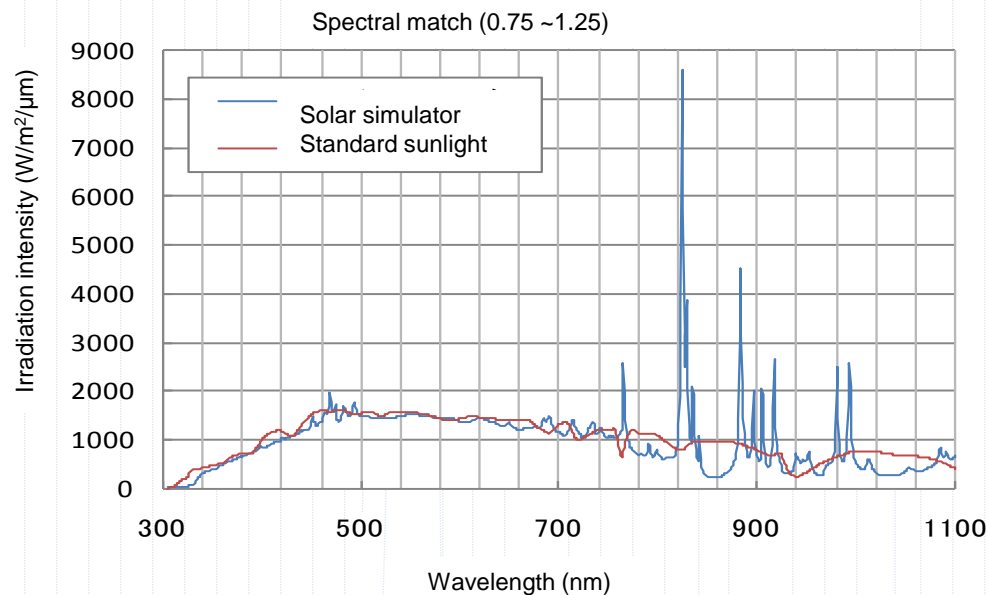


Since the conventional light resistance test system is not a dedicated system for testing solar cells, the accuracy of the irradiation light is not enough when using a xenon lamp or a metal halide lamp or etc., and there have been three problems as follows.

1. Effect of the spectral mismatch (influence of ultraviolet deterioration and infrared deterioration due to the intensity difference between the sunlight and irradiation light)
2. Effect of non-uniformity of irradiation light (influence of variation of irradiation intensity on the individual sample when setting the multiple samples,)
3. Effect of irradiation time (influence of the change of irradiation light intensity when starting measurement and completing measurement).

Therefore, the Model BIR-50 has been developed to combine the conventional solar simulator with 50mm x 50mm irradiation area (class AAA) and constant temperature chamber for the temperature adjustment, which is capable to perform more accurate light degradation test and the temperature deterioration test of the solar cell. There is the BNC connector equipped in the constant temperature chamber that is enabled to perform the I-V measurement.

Irradiation light used for the solar simulator (Class AAA)



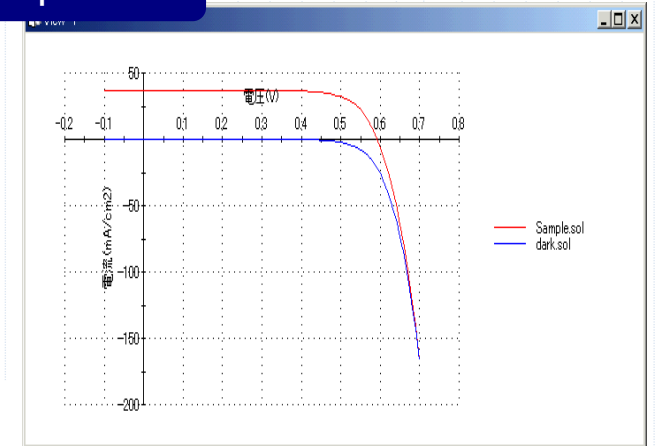
The solar light resistance test of the BIR-50 can be performed under more accurate pseudo sunlight than that of conventional solar simulator complied with JIS C8912/C8933 A class

Light intensity feedback with an internal monitor detector



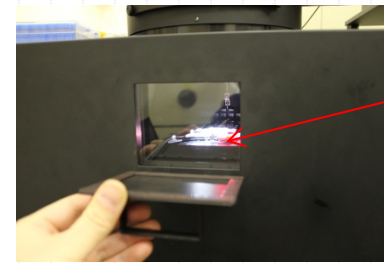
An internal monitor detector is built in the optical system. Light intensity can be maintained constant by monitoring the irradiation light intensity and feeding it back to the Xenon light power supply.

I-V measurement under constant temperature



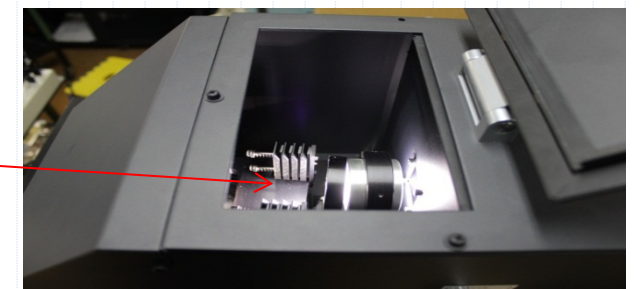
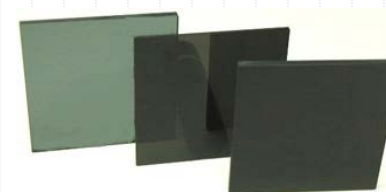
The BNC connectors are equipped within and outside the constant temperature chamber. I-V measurement can be performed under constant temperature.

Observation of the sample during irradiating the light on the sample



The temperature cannot be controlled when the door is opened during irradiating the light on the sample in order to observe the sample. Therefore, the BIR-50 has been developed with the observation window, which enables the customer to observe the sample without opening the door while maintaining the setting temperature in the constant temperature chamber.

Equipped with a filter holder



Equipped with a filter holder in the optical system, you can use up to four filters at the same time. Degradation when the light is attenuated with the ND filters or Degradation in different wavelength range with different color filters can be performed. ND filters and color filters are optional items.