

Solar Simulator (400-1100nm) HAL-C100

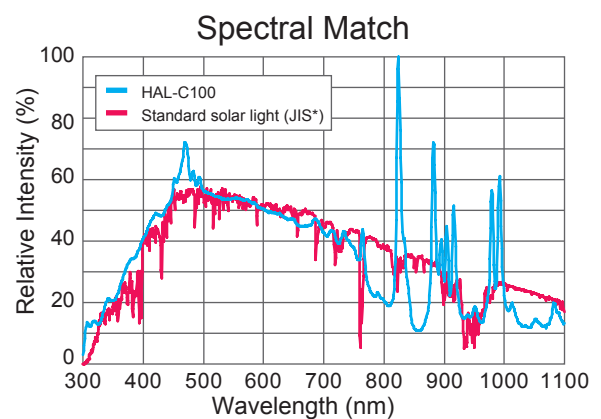
Compact entry model for introduction of photovoltaic research



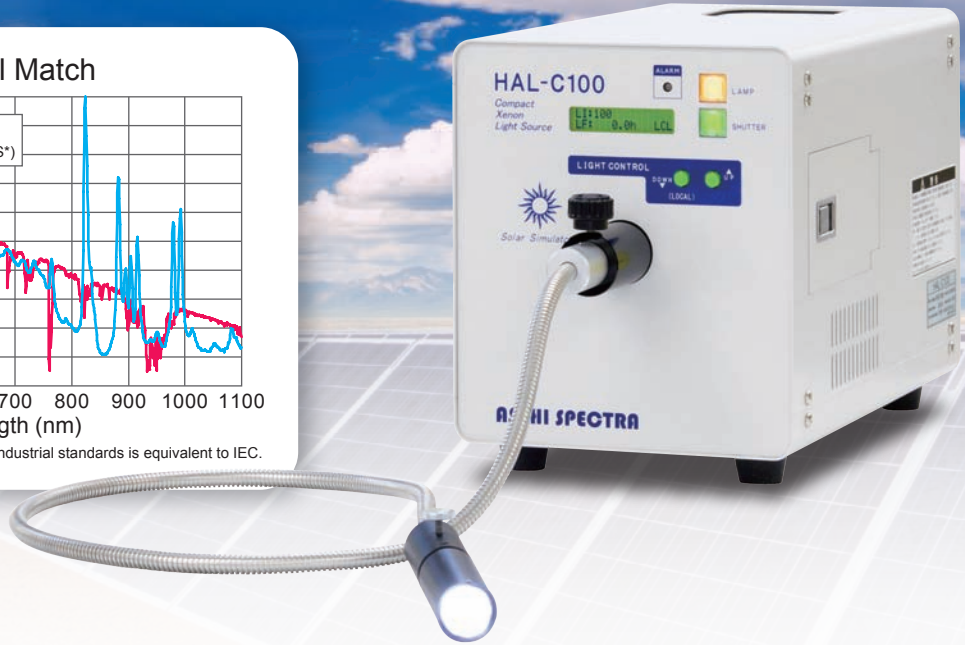
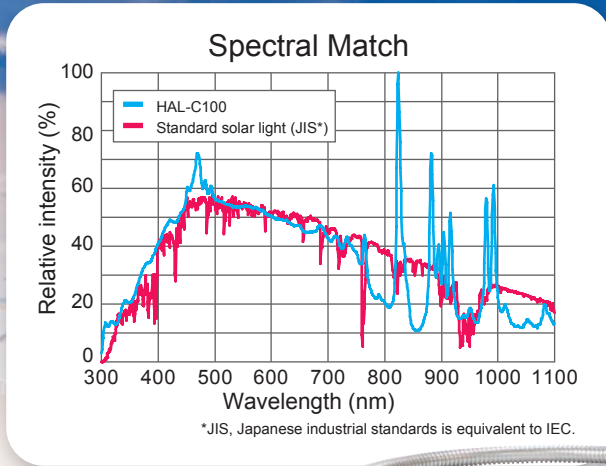
Features

- JIS* Class AAA solar simulator (400-1100nm)
- Built-in AM1.5G filter
- Flexible illumination by light guide
- Adjustable light intensity
- No need of optical axis alignment
- RS232C remote control

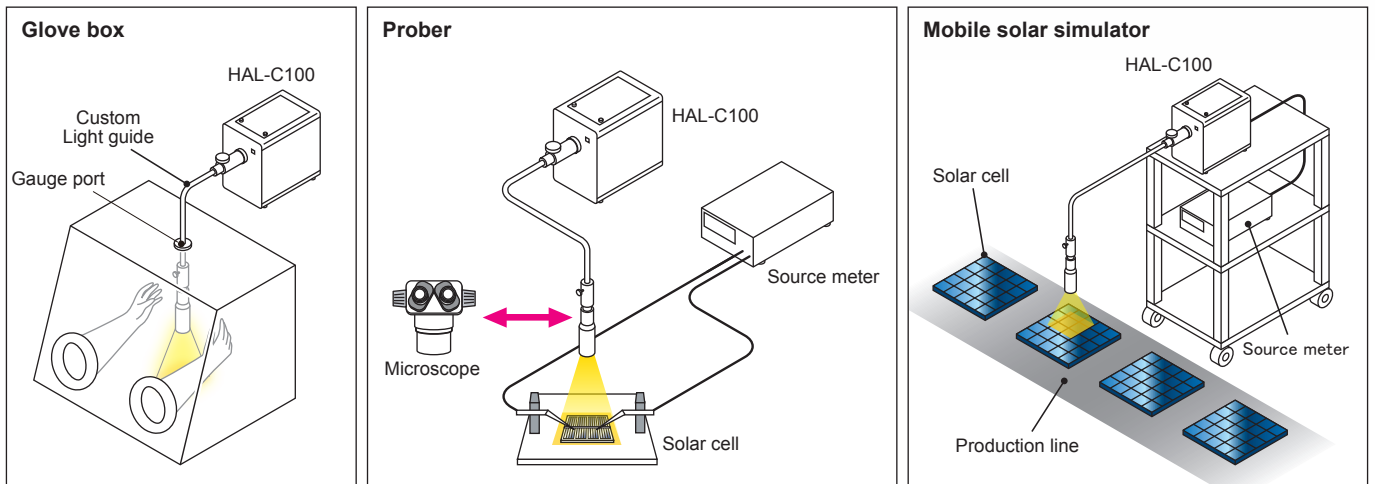
*JIS, Japanese industrial standards is equivalent to IEC.



The most suitable entry model for development and trial production of next-generation solar cell



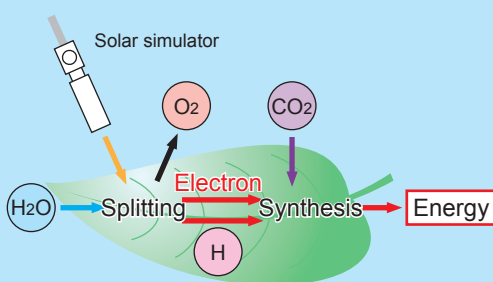
Flexible Configuration with Light Guide



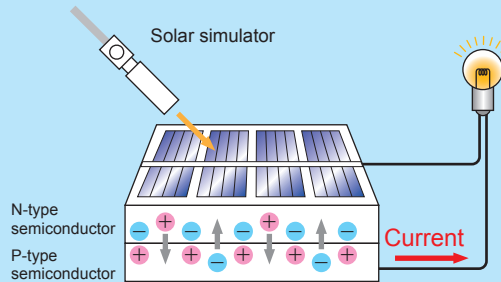
Applications

Solar simulator for various inspection and research

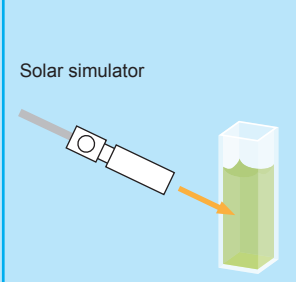
Artificial photosynthesis



Solar cell research



Photocatalytic research



Compact solar simulator achieves Class AAA with fiber output system

Spectral Match



Our own designed AM1.5G filter corrects xenon emission lines according to Class A.

This simulator can evaluate not only a crystal type, also dye-sensitized solar cells, CIGS and so on.

JIS C 8912-2011

Reference data

Wavelength (nm)	Energy Distribution (%)		Spectral Match	Class
	HAL-C100	JIS		
400 - 500	21.0	18.4	1.14	A
500 - 600	20.3	19.9	1.02	A
600 - 700	17.8	18.4	0.97	A
700 - 800	13.2	14.9	0.89	A
800 - 900	11.8	12.5	0.94	A
900 - 1100	15.8	15.9	0.99	A

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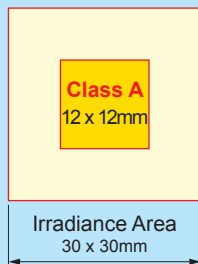
Uniformity



The calculated value of 1SUN in the range of 400-1100nm is about 75mW/cm².

Working distance: about 224mm

You can obtain Class A uniformity in the area 12x12mm with 1 SUN intensity when you set the ND control by about 50% of initial lamp as described in the right figure.(factory default setting) Light intensity decline due to a lamp life can be adjusted by light intensity control. Above the size of Class A area is reference value. Please note that the output of lamp varies among the manufacturing lots.



JIS Classification

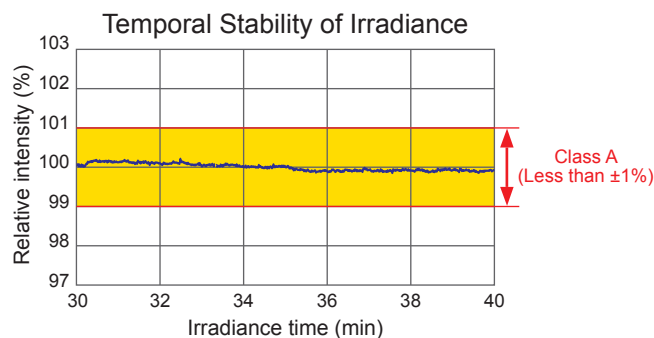
JIS C8912-2011

Item	Class A	Class B	Class C
Positional uniformity of irradiance (%)	≤ ±2	≤ ±3	≤ ±10
Temporal stability of irradiance (%)	≤ ±1	≤ ±3	≤ ±10
Spectral match	0.75 - 1.25	0.6 - 1.4	0.4 - 2.0

Temporal Stability of Irradiance



There is less flicker and stable output at long times.

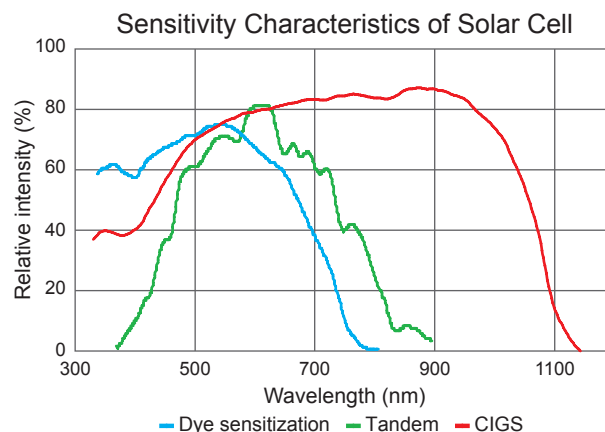


*10 minutes measurement after turning on the lamp for 30 minutes.
*The values are for reference only.

*If you use the HAL-C100 for a long time, we recommend that you use the constant-voltage power supply so that the HAL-C100 is not influenced by the change of load.

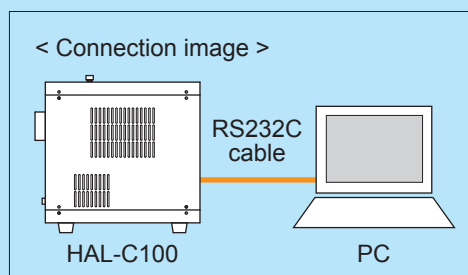
Target Solar Cell

The HAL-C100 is suited for the evaluation for development and prototype of next-generation solar cell.



RS232C Remote Control

The HAL-C100 can be controlled remotely via RS232C.



Options

1 SUN Checker CS-30



1 SUN Checker is used for checking the light intensity (1 SUN) of HAL-C100. It is battery operated and portable.

Light Guide (TPO)



This light guide is the option for bringing a light into a glove box. The gauge port is equipped.

Scope of Delivery

- HAL-C100 main unit
- Lamp cartridge
- Quartz light guide (1m)
- Light guide adapter
- Collimator lens
- AC cable (3m)
- RS232C cable (1.8m)
- Instruction manual

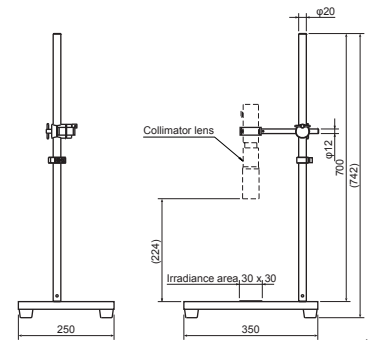
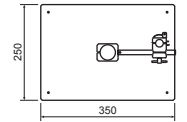
General Specifications

- Model: HAL-C100
- Output wavelength: 400 - 1100nm
- Circuit method: Switching power supply
- Input voltage: AC100V 50/60Hz (Input range: AC90 - 132V)
AC200V 50/60Hz (Input range: AC198 - 264V)
- *Select input voltage when placing an order.
- Apparent power: Less than 350VA (AC100V/50Hz)
Less than 440VA (AC240V/50Hz)
- Lamp type: Xenon lamp 100W
- Lamp voltage, current: 12.8 - 14V 7.2A (DC) *Representative value
- Lamp life: 500h (Average)
- *When the light intensity has decreased by 50% from the initial value.
- Optical axis alignment: Cartridge type (Alignment-free)
- Cooling method: Forced air cooling
- Shutter: Pulsed motor drive
- Light intensity control: 100 - 5 (Steps)
Continuously variable
- Air Mass filter: Air Mass 1.5G filter
- Emitting method: Bundled light guide
- Controller: Built-in
- Remote control: RS232C *The cable must be less than 3m.
- Safety mechanism: Xenon lamp problem, Rear door is open,
Lamp usage exceeds 500 hours, Cooling fan problem,
Temperature anomaly
- Recommended environment: Temperature 10 - 35 deg C
Humidity 20 - 80% *Avoid condensation
- Dimensions: 200(W) x 340(D) x 245(H)mm
- Weight: 8.9kg

Stand for Collimator Lens



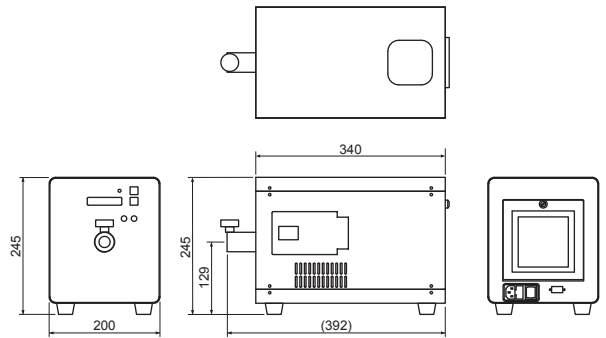
Dimensions



Unit: mm

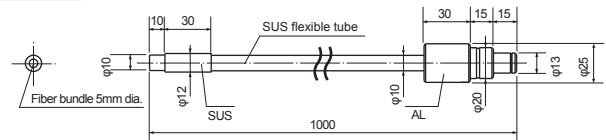
Dimensions

Main unit



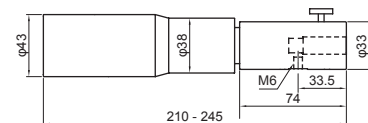
Unit: mm

Light guide



Unit: mm

Collimator lens



Unit: mm

*Product specifications are subject to change without notice.

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