

Solar Simulator (350-750nm)

HAL-302

Class A Solar Simulator

Spectral Match / 0.75-1.25

Temporal Instability / $\leq \pm 1\%$

Non-uniformity of irradiance / $\leq \pm 2\%$

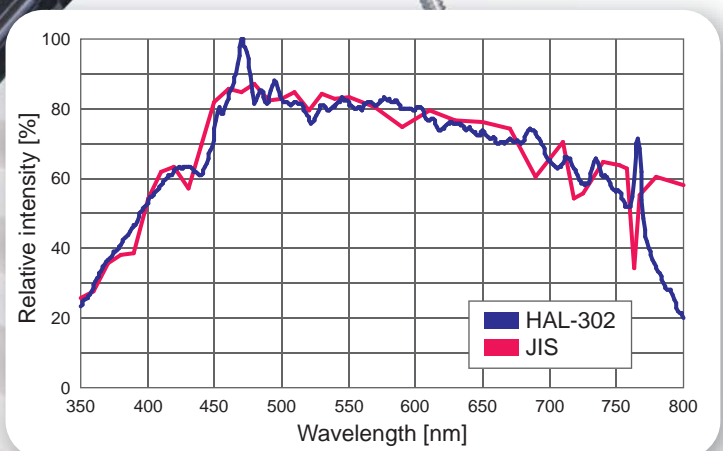
The HAL-302 is mainly developed and used to simulate solar radiation for amorphous silicon, tandem, and dye-sensitised solar cells.

Heat Blocking Optical System

The combination of xenon lamp and proprietary mirror unit produce the perfect spectrum of AM1.5G. The mirror unit is designed to block unwanted spectrum up to 3200nm and focuses on the spectral output, from 350nm to 750nm.

Compact and Convenient

Differ from the other solar simulators, the HAL-302 is designed to be used with a useful light guide. The unit is portable and can be easily installed in your limited space.



Solar Simulator (350-700nm)

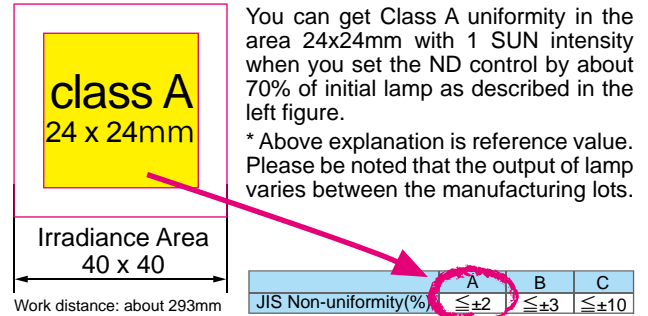
Spectral Matches

Wavelength(nm)	Energy Distribution		Spectral Match	
	HAL(%)	JIS(%)		
350-400	6.8	6.5	1.04	A
400-450	11.0	11.5	0.96	A
450-500	15.5	15.2	1.02	A
500-550	14.5	14.9	0.97	A
550-600	14.6	14.2	1.03	A
600-650	13.6	13.9	0.98	A
650-700	12.8	12.6	1.01	A
700-750	11.3	11.2	1.01	A

The combination of xenon lamp and proprietary mirror unit produce the characteristics Class A spectrum. The mirror unit blocks unwanted spectrum up to 3200nm and the emitted output would be ideal solar spectrum without heat.

Nonuniformity

The calculated value of 1SUN in the range from 350 to 750nm is about 52mW/cm².

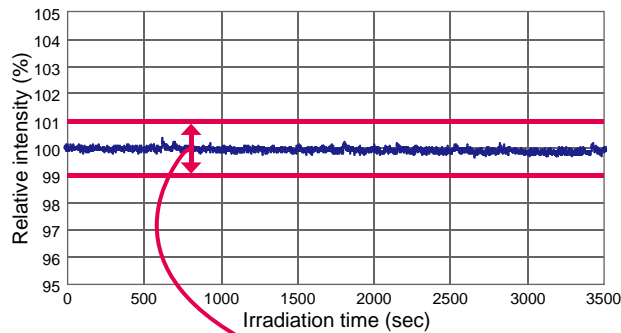


You can get Class A uniformity in the area 24x24mm with 1 SUN intensity when you set the ND control by about 70% of initial lamp as described in the left figure.

* Above explanation is reference value. Please be noted that the output of lamp varies between the manufacturing lots.

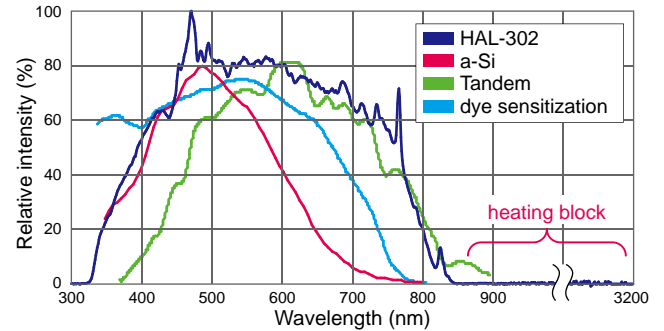
*Maximum incident angle of irradiance is : HAL-302 ≤±11°, JIS ≤±15°

Temporal Instability



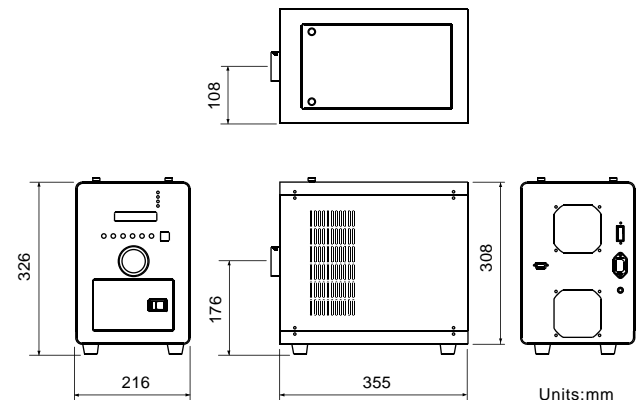
JIS Temporal Instability(%)	A	B	C
	≤±1	≤±3	≤±10

Heat blocked solar simulator



General Specifications

- Model : HAL-302
- Circuit method : Forward converter switching
- Input voltage : AC100-240V 50/60Hz
- Power consumption : less than 900VA (AC100V 50Hz)
: less than 1030VA (AC240V 50Hz)
- Lamp type : Xenon lamp 300W
- Lamp voltage : 14V(DC)
- Lamp current : 21A(DC)
- Lamp life : 500h
- Lamp maintenance : Free alignment(Cartridge type)
- Cooling method : Forced cooling
- Shutter : Pulsed motor drive 80msec
- Exposure time set : 0.1 - 9999.9sec
- Spectral Range : 350 - 750nm
- Intensity adjustment : 100 - 5%(Transmittance)
Continuously variable
- Filter wheel : 8 holes *25mm dia./t=6mm filter is usable
- Emitting method : Singlemode light guide
- Controller : Built-in
- Remote control : RS232C
- Recommended environment : Temperature 10 - 35 deg C
: Humidity 20 - 80%
- Dimensions : 216(W) x 355(D) x 326(H)mm
- Weight : 13kg



*We accept no responsibility for any errors or omissions, and we reserve the right to modify design, characteristics and products at any time without obligation.