

Iris

LED Visible Light Simulator (60mm x 60mm ▪ 400-800nm)

◇ Standard Type ◇

and

◇ Low-Illuminance Support Type ◇

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1. Overview

1-1 Feature

- 1) Iris-06 is an apparatus that irradiates a 60mm x 60mm object with uniform luminous flux in the spectral range from 400 to 800 nm.
- 2) Iris-06 has achieved high reproducibility of the solar spectrum for testing dye-sensitized or organic-thin-film type solar cells.
- 3) Iris-06 is able to simulate not only sunlight but also indoor lighting and other particular lighting conditions by setting spectral distribution to the required range, modulating wavelength of the mounted LEDs.
- 4) Combining and intensifying LED lights, uniform irradiation can be irradiated by Iris-06.
- 5) Since LEDs are used for the light source, temperature of the irradiated object does not increase, in addition to the fact that power consumption is suppressed comparing to the light sources using xenon or halogen.
- 6) 《 Low-Illuminance Support Type 》 Using ND filters ^(*) and controlling electric current, illuminance can be attenuated to the range between 1 Sun and 0.0002 Sun.

Illuminance	10% ND filter	Electric Current
1sun - 0.2Sun	No filter is required	Control by the setting (100-20%)
0.1Sun	1 filter (1/10)	No current control is required
0.1sun - 0.02Sun	1 filter (1/10)	Control by the setting (100-20%)
0.01Sun	2 filters (1/100)	No current control is required
0.01sun - 0.002Sun	2 filters (1/100)	Control by the setting (100-20%)
0.001Sun	3 filters (1/1000)	No current control is required
0.001sun - 0.0002Sun	3 filters (1/1000)	Control by the setting (100-20%)

(*1) ND filter : Neutral Density filter

Up to three 10% ND filters can be used for Iris-06 low-illuminance support type.

1-2 Capability

Illuminance distribution for the effective irradiation area of 60mm x 60mm is $\pm 10\%$.

1-3 Test Objects

Solar cells of 60mm x 60mm or smaller.

2. Unit Components

2-1 Light source component

2-2 Power source component for the light source

3. Specifications

3-1 Light Source Component

1) Mounted LEDs	28 kinds of LEDs
2) Spectral characteristics	Proximate AM1.5G at 400~800nm ±10% (50nm pitch) (provided that irradiation is 53mW/cm ² (400~800nm))
3) Irradiation area	Effective for 60mm x 60mm
4) Irradiation intensity	53mW/cm ² (integral irradiation at 400~800nm, illuminance-adjustable range: 20%~110%)
5) Illuminance stability	Within ±2% (provided that 30 minutes or more after turning on the LED lights)
6) Illuminance distribution	<ul style="list-style-type: none"> • Within ±10% (within the effective irradiation area of 60mm x 60mm) • Within ±2% (within the effective irradiation area of 30mm x 30mm)
7) Irradiation direction	Downward in a vertical direction
8) Irradiation distance	200mm (from the light exit to the irradiated surface)
9) Applications	<ul style="list-style-type: none"> • Spectral distribution can be changed modulating wavelength of each LED. • Up to 50 recipes can be saved. • RS232C communication with PC is supported.
10) Cooling system	Forced air cooling

3-2 Power Source Component for the light source

1) Power source of the circuit	DC24V
2) Circuit system	Constant-current system

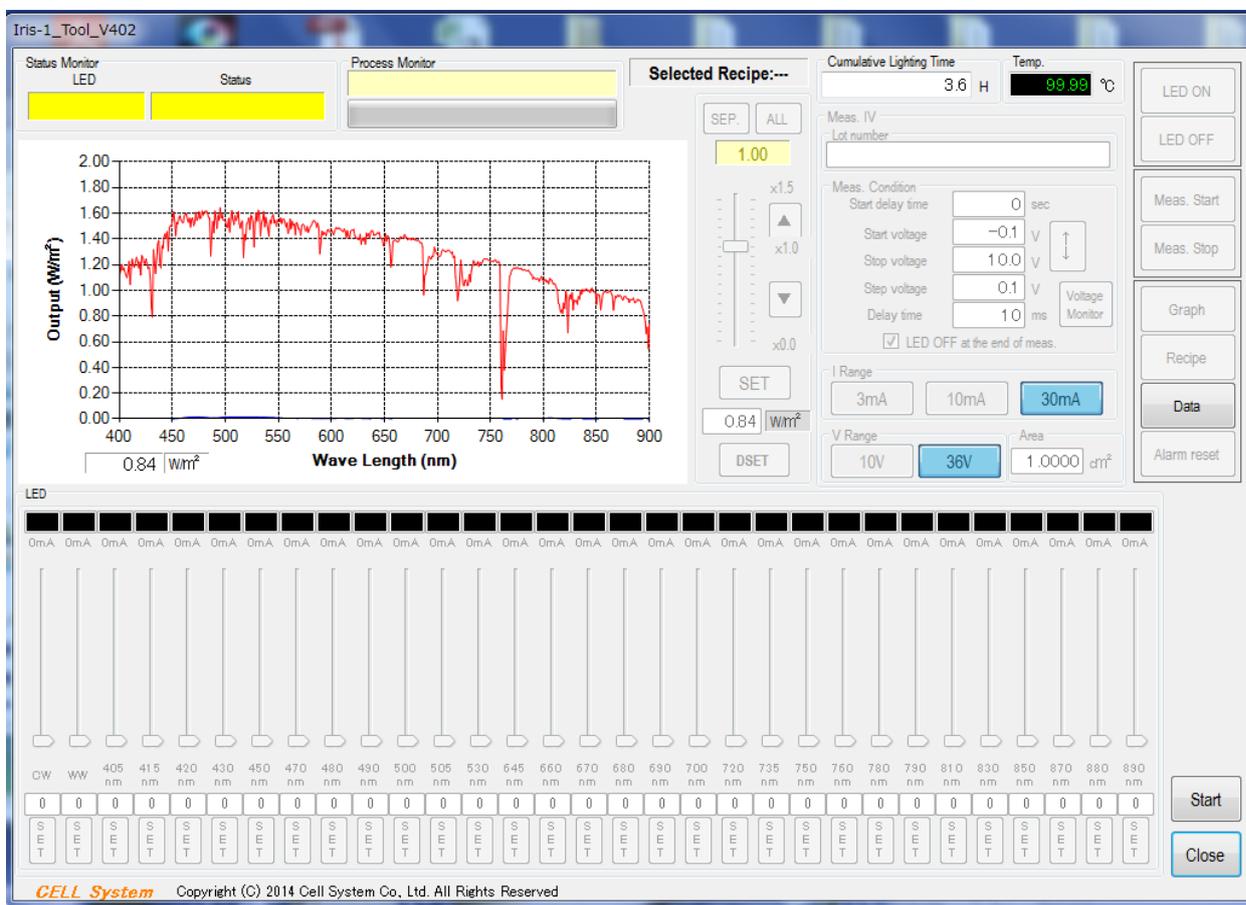
3-3 General specifications

1) Operating temperature range	20°C ~40°C
2) Saving temperature range	0°C ~60°C
3) Input voltage	Single phase 100V±5% 50/60Hz
4) Power consumption	Max. 1200VA
5) Dimensions	800(W) x 1564(H) x 850 (D) mm
6) Installation space	Requires spaces of approx. 200mm to right, left and back of the unit for ventilation holes.
7) Weight	Approx. 200Kgs or less
8) Outer finish	Black painted

4. Spectral Characteristics



-- Attached Application Program --



	Reference		IRIS		Spectral Coincidence	Difference (%)
	W/(m*m)/nm	%	W/(m*m)/nm	%		
350 – 400	33.1242	5.0926	31.3343	4.8398	0.95	-5.0
400 – 450	63.1111	9.7028	61.4932	9.4981	0.98	-2.1
450 – 500	79.3570	12.2005	72.3604	11.1766	0.92	-8.4
500 – 550	77.9291	11.9810	79.1867	12.2310	1.02	2.1
550 – 600	76.1344	11.7051	79.9519	12.3492	1.06	5.5
600 – 650	73.4249	11.2885	74.9416	11.5753	1.03	2.5
650 – 700	68.5520	10.5394	68.0278	10.5074	1.00	-0.3
700 – 750	61.3091	9.4258	61.1621	9.4469	1.00	0.2
750 – 800	54.2882	8.3464	59.4434	9.1815	1.10	10.0
800 – 850	49.7250	7.6448	45.4506	7.0202	0.92	-8.2
850 – 900	46.6078	7.1656	45.4095	7.0138	0.98	-2.1
1.00	650.4385	100.0000	647.4271	100.0000	1.00	0.36

5. External View

