

SPECIFICATIONS

High Intensity Continuous Solar Simulator

Model: XES-100S (1-5Sun)



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1. Introduction

This high intensity solar simulator is designed for photochemistry using, which provides high concentrated light energy max 5 SUN (1 SUN =1000w/m²)¹.

For irradiance adjustment, 4 mesh filters are equipped. The irradiance can be switched between 1sun – 5sun arbitrarily. At the same time, the non-uniformity can be keep within 2% (A class).

Therefore, this product can be used not only as a high intensity light source but also a standard solar simulator.

2. Equipment composition

Model	XES-100S (1-5Sun)
Light Source Unit	XES-1600H1 88kg, W 630 × H 805 × D 1002 mm
Power Supply	XEC-1600M1-STP 28kg, W 620 × H 290 × D 595 mm
Lamp	1.6kw Xenon Lamp
Filters	AM 1.5G x 1pc, Mesh filters: 20%, 40%,60%,80%, x 1set
Stand	Optional
Accessories	Power Input Cable (3.5sq 3pin, 5m) Light Source Power Cable (2pin, 3m) Shutter Cable (10pin, 3m) Inter-lock/fan cable (12pin, 3m) Remote cable (34pin, 3m) Test report Operation Manual

¹ 1SUN (AM1.5G, 1000W / m²) is the standard solar intensity on the earth's surface. It means, under AM1.5G conditions, the total radiant energy of sunlight in the range of 280nm (300nm) -4000nm is 1000W / m². Generally, we use a silicon crystal reference cell (spectral response range: 400nm-1100nm) to measure the intensity of solar simulator, and convert the current value of reference cell is converted to 1000W / m².

3. Components

Shutter Unit	Manual / Timer Open & Close
Mesh filters	For switching irradiance 1 SUN to 5 SUN 20%: 1 SUN 40%: 2 SUN 60%: 3 SUN 80%: 4 SUN No mesh filter: 5 SUN
Output Adjustment	By changing the current lamp power (70~100%)
Lamp Output Display	Indicating lamp power (current / voltage / power)
Rotatable Lens Unit	The lens unit can be rotated free and fixed at every 90 degree.
Interlock	Lamp shutoff automatically when the lamp exchange door is open
Lamp Hour Meter	Indicating operation time of lamp
Optic Axis Adjustment Mechanism	Lamp optic axis adjustment with X-axis, Y-axis, Z-axis adjustment knob & visible lamp arc monitor.
Remote Control Functions	Power input signals Lamp on input signals Shutter Manual open input signals Shutter Timer open input signals
Monitoring Functions	Shutter open confirmation output signals Shutter closed confirmation output signals Lamp on confirmation output signals Lamp stability indicator output signals Light source over-heat alarm output signals Power supply over-heat alarm output signals Inter-lock alarm output signals Lamp life time over alarm output signals Shutter motor alarm output signals

4. Electric Specifications

Rated Input	AC200-240V 50/60 Hz 1 ϕ 2.6kVA (Max)
Insulation Resistance	DC 500V above 20M Ω Input ~ Output between F.G Output ~ between FG
Voltage Endurance	Input ~ Output between F.G AC 1,000 V 1 minute Output ~ between FG AC 500 V 1 minute

5. Optical Specifications

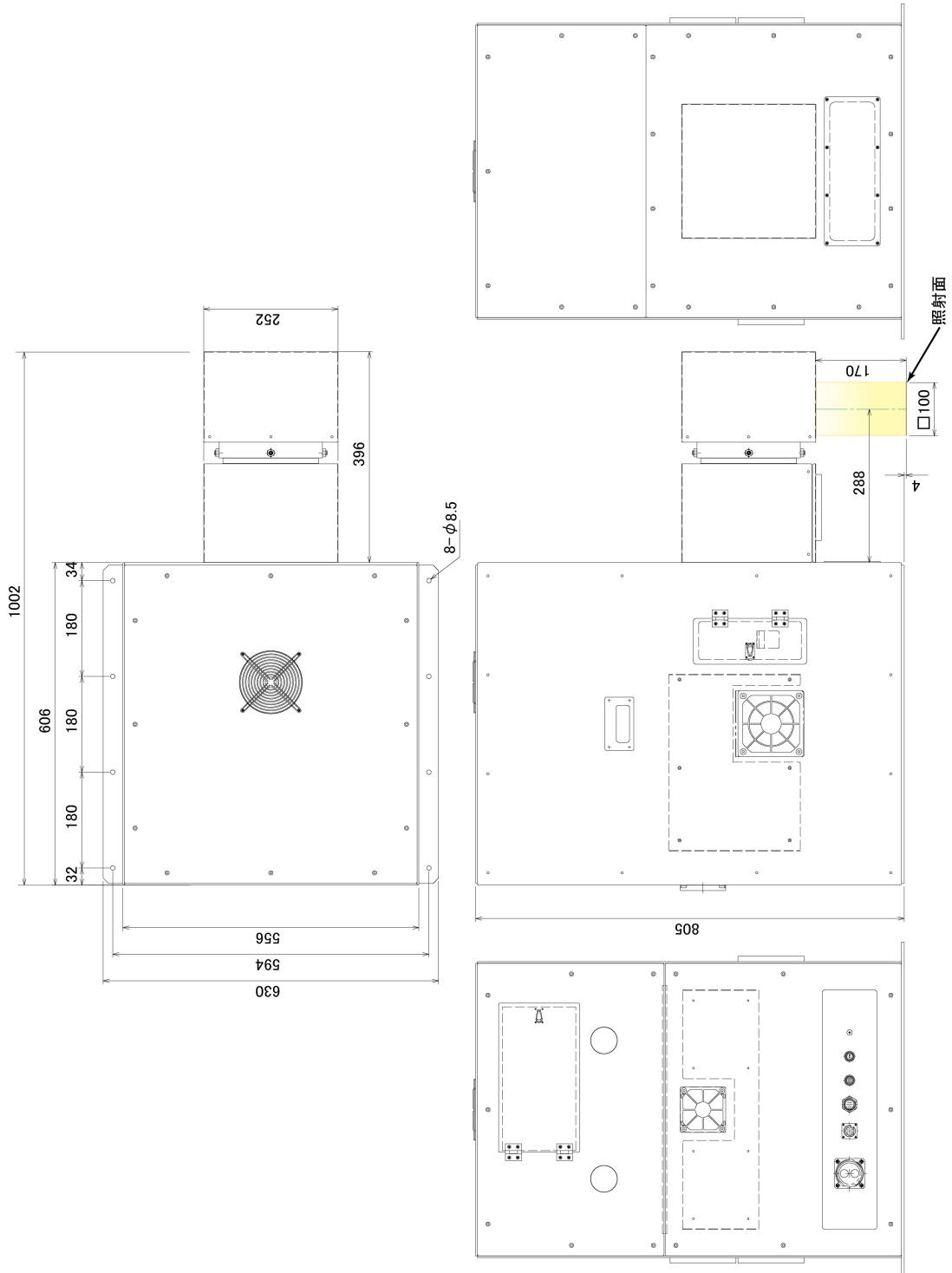
Irradiance	1 SUN ~ 5 SUN adjustable By using 20% mesh filter: 1000W/m ² By using 40% mesh filter: 2000W/m ² By using 60% mesh filter: 3000W/m ² By using 80% mesh filter: 4000W/m ² No mesh filter: 5000W/m ² *Fine adjustment with lamp power is necessary.
Effective Irradiated Area	100mm x 100mm
Working Distance	170mm (from lens unit)
Irradiance Directions	Upward, Downward, Right, Left
Non-uniformity in Irradiated Area	<2%, JIS C 8904-9 class A
Instability of irradiance	LTI: <2%, STI: <0.5%, JIS C 8904-9 class A
Spectral Mismatch	AM1.5G, within $\pm 25\%$, JIS C 8904-9 class A
Lamp Life	Average 1,000 hours Guarantee Time 500 hours
Output Adjustment	By changing the current lamp power. Range: 70~100%

6. Operating Environment

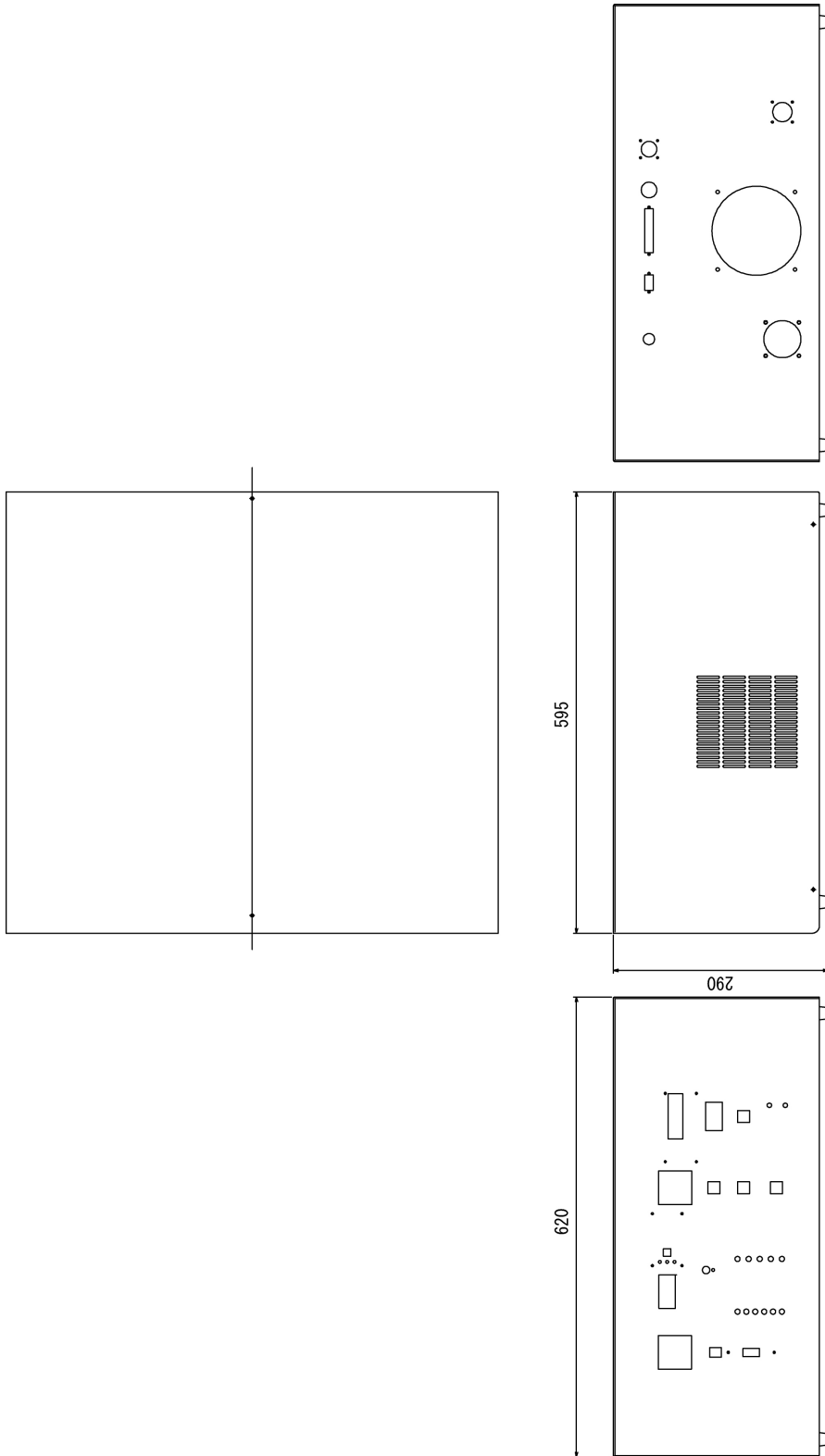
Temperature	20~30°C (RT value)
Humidity	20~85% (RH value No Condensation)

7. Dimension

a. Light Source XES-1600H1



b. Power Supply XEC-1600M1-STP



8. Warranty

Warranty period covers one year after delivery with a service time (accumulated lamp lighting time) less than 1,000 hours.

Should incident or malfunctioning occur due to design or manufacturing defects of our company within the above mentioned warranty period, compensation is provided for repair or replacement of the malfunctioning parts only.

Please clearly indicate the details of the claimed malfunctions and ship the device to our company.

The warranty does not cover the following items:

- 1) Accidents or malfunctions occur as a result of wrongful usages not covered in this manual.
- 2) Malfunction or accidents resulted from modification unauthorized by SAN-EI electric Co., Ltd.
- 3) Malfunction or secondary damages from natural or man-made calamities.
- 4) Damage compensations for accidents or malfunction.
- 5) Damage compensations for patent infringement by users operating this device.