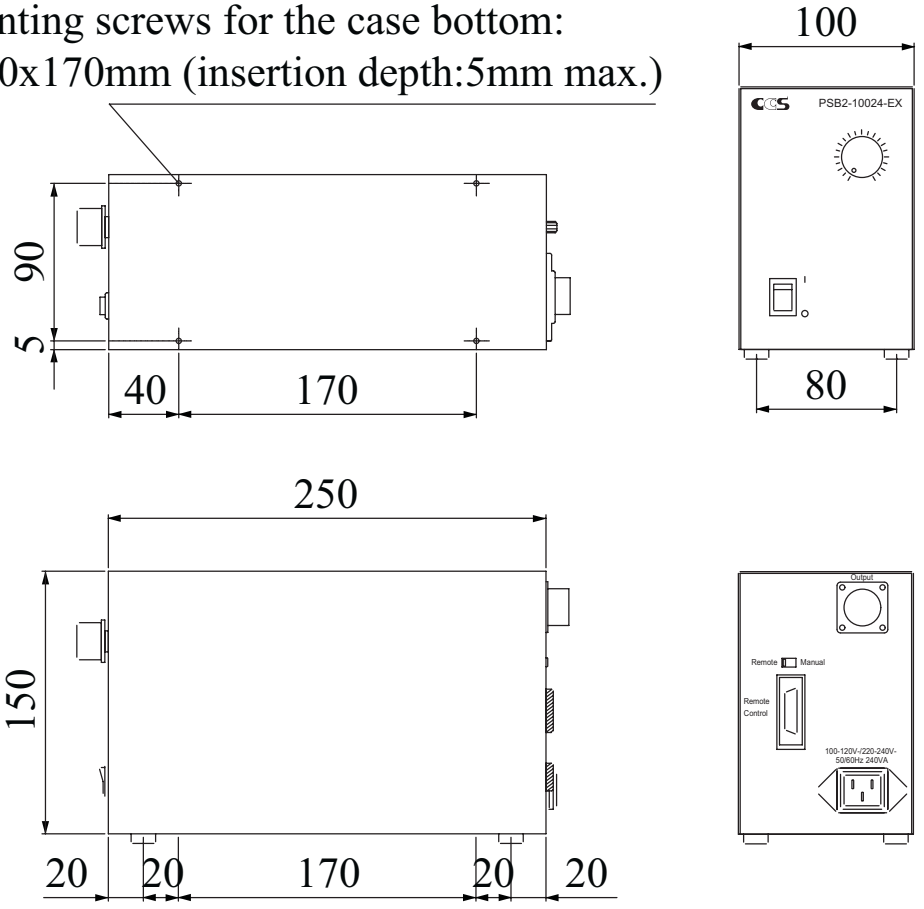
PSB2-10024-EX

Model	PSB2-10024-EX
Input voltage	100-120V AC / 220-240V AC
Maximum power	100W
Mass	3.0kg max.
Connector type	Output Connector: Metal connector (7-pin, male) External control connector: 15-pin D-sub (male, millimeter screws)

Third Angle Projection Units: mm

User-supplied mounting screws for the case bottom:
Four M3 Screws, 90x170mm (insertion depth:5mm max.)



CCS Inc.

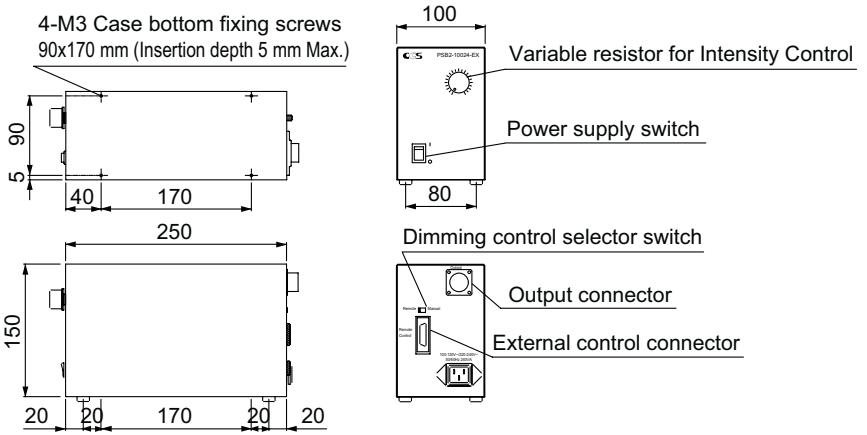
PSB2 Series Specifications

* Please use power supply corresponding to the power consumption of the light.

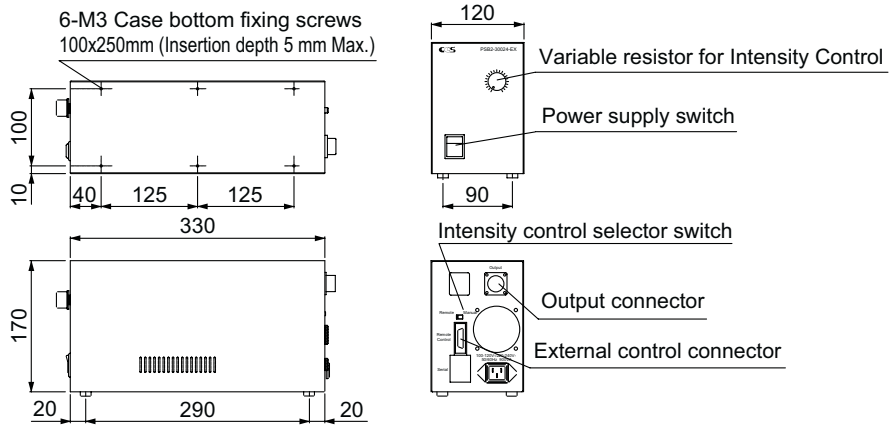
Model	PSB2-10024-EX	PSB2-30024-EX
Input voltage	AC100V ~ 120V/AC200V ~ 240V	
Power consumption	240VA typ.	900VA typ.
Frequency	50/60Hz	
Inrush current	30A typ.	40A typ.
Output voltage fluctuation range	12V ~ 24V	
Maximum power	100W	300W
Dimming system	Voltage control system	
Dimming control	Manual (Internal): Dimming with variable resistor provided on the control panel Remote (external): Dimming with external control signal in the analog voltage range of 0 to 5V	
On / Off control input	Turning off control input (No. 1 pin of external control connector) OFF: 2V to 5V ON: 0V to 0.8V or open	
External control connector	D-Sub 15-pin (male)	
Lighting ON/OFF response	0.1sec typ.	
Startup time	0.5sec typ.	
Weight	3.0 kg Max.	4.0kg Max.

PSB2 Series Dimensions (Unit: mm)

PSB2-10024-EX



PSB2-30024-EX



HLND extension cable

FCB-2-1.25SQ-ME7 - - - - - - 2-m cable

FCB-3-1.25SQ-ME7 - - - - - - 3-m cable

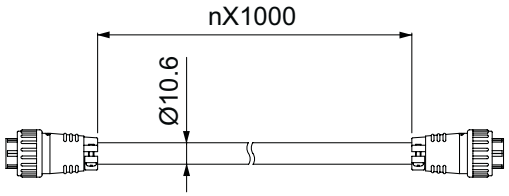
FCB-5-1.25SQ-ME7 - - - - - - 5-m cable

FCB-10-1.25SQ-ME7 - - - - - 10-m cable

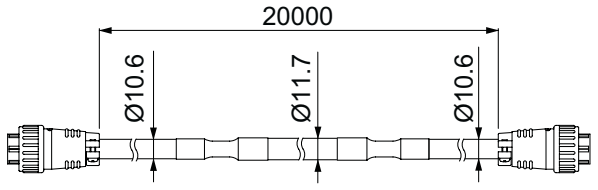
FCB-20-2.0SQ-ME7 - - - - - - 20-m cable

Dimensions of HLND extension cable (Unit: mm)

FCB-n-1.25SQ-ME7 (n=2,3,5,10)



FCB-20-2.0SQ-ME7



PSB2-10024-EX Instruction Guide
Power Supply for LED Illumination

1. Safety Precautions * Read this instruction guide before using the product.

Thank you for purchasing a CCS product. To properly use the product, please read this instruction guide before use and keep it for your future reference.
Be sure to pay special attention to the information marked with " ⚠ Warning" and " ⚠ Caution." The information is provided to prevent injury from electric shock and other accidents.

⚠ Warning	Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠ Caution	Indicates a potentially hazardous situation which, if not avoided, may result in injury or property damage.

⚠ Warning	
(1)	Always use one of the following power cables. 100 to 120 V range: SVT type, AWG 18, length: 3 m max., dielectric strength: 125V min. (Note: Required power cable for compliance with UL) 200 to 240 V range: H05W-F type, AWG 18, length: 3 m max., dielectric strength: 250 V min. (Note: Required power cable for compliance with EU)
(2)	Plug in or unplug the power cord after turning OFF the supplied power. Otherwise, fire or electric shock may occur. Plug the power cord directly into the outlet. Do not plug the power cord into an extension cord or into a multiple-type outlet. Otherwise, fire or electric shock may occur. Always unplug the unit and peripheral devices from the outlet first before connecting or disconnecting the unit. Damage to the power cord may result in fire or electric shock. 
(3)	If the unit is dropped or damaged, turn it OFF, unplug the power cord from the outlet, and contact CCS or the company from which you purchased the product. Continued use of the unit may result in fire or electric shock.
(4)	The unit operates at a power supply voltage of 100 to 120 VAC or 220 to 240 VAC. The supplied power cord, however, is for use with 100 V. If the unit is to be used at 220 V or above, use a 220-V power cord.
(5)	When the rubber legs and case legs are removed to mount the unit in a system rack or case, the portion of the M3 screws penetrating the case must be less than 5 mm long. If this portion is longer, internal components may become short-circuited.
(6)	Do not open the cover of the Power Supply for LED Illumination. There are high-voltage parts inside. Opening the cover may result in electric shock. 
(7)	Do not touch the case with wet hands. To do so may result in electric shock, fire, or product failure. 
(8)	Ground the power supply. Use a 3-pin AC cable with ground terminal for the power supply. 
(9)	If smoke appears, the product becomes abnormally hot, unusual smells or sounds are generated, or any other abnormality occurs, stop using the product immediately and turn OFF the power. 

Caution	
(1)	Illuminators become very hot during use. For this reason, do not use them in a closed space. If it is necessary to use them in a closed space, provide sufficient cooling in the form of fans or other cooling devices.
(2)	Install the product in places with the following conditions: ・ Horizontal, stable places with little vibration ・ Places with good ventilation and little dust ・ Places that are not subject to sudden temperature changes ・ Places that are not close to water faucets, water heaters, humidifiers, coolers, heaters, or stoves (i.e., places that are not subject to high levels of temperature or humidity, or low levels of temperature or humidity) ・ Places that do not have water-containing objects nearby ・ Always use the product in a place where there is a ground connection. 
(3)	Observe the following items for the Power Supply: ・ Provide a dedicated power source with stable voltage. Wiring the product from the same power source as a large device, such as a motor or an inverter, may result in malfunction. ・ Disconnect the power plug when the product is not to be used for an extended period of time. ・ Do not place the power cord near a heat-generating device, and do not allow the power cord to be scratched. ・ In the event of a thunderstorm, do not touch the product case. 
(4)	Do not look directly at high-intensity light. LED illuminators are not as high in intensity as a semiconductor laser, but you should avoid looking directly at any bright lights or at strobe lights for an extended period of time. Doing so may have adverse effects on your eyes. 

2. Features

This product is a dimming power supply for connection with CCS HLND series LED illuminators only. HLND series LED illuminators of up to 100 W can be connected.

3. Operating Procedure

3-1 Connection

Make sure that the power switch is pressed downward.
Connect the receptacle end of the LED lighting cable to the output connector on the back of the power supply.
Plug the power cord into the outlet.
To perform external control, connect to the external control connectors (15-pin D-sub female) on the back of the unit.

3-2 Turning ON the power

Press the power switch upward.

3-3 Internal dimming

Set the slide switch on the back to Manual.
Turn the Intensity dial to the right to brighten and to the left to dim.

3-4 External dimming

Set the slide switch on the back to Remote.
The Intensity dial on the front will become disabled and dimming will be possible with external dimming analog input (0 to 5.0 V) using the external control connectors.

3-5 Lighting OFF control

The illuminators can be turned OFF independent of internal or external dimming by inputting +5 V into the lighting ON/OFF control input.

4. Output Connectors

4-1 Output connectors

SRCN2A16-7S (JAE)

Pin number	Signal
1	+24 V [1)]
2	+24 V [1)]
3	+24 V [1)]
4	GND [2)]
5	GND [2)]
6	GND [2)]
7	NC [3)]

Notes: 1) +24 V internal specification
2) GND internal specification
3) NC (not connected) (not used)

4-2 External control connectors: 15-pin D-sub male with M2.6-mm screws

Use a shielded cable of 3 m or less for the control line.

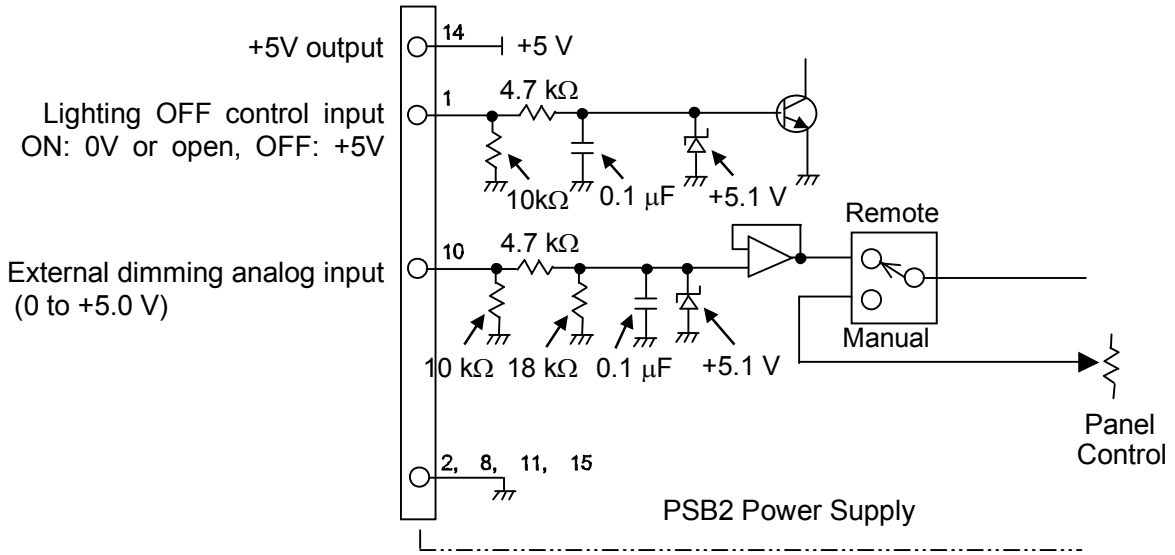
Pin number	Signal
1	Lighting OFF control input (+5 V input: Lighting turns OFF)
2	GND [4]
3	NC [5]
4	NC [5]
5	NC [5]
6	NC [5]
7	NC [5]
8	GND [4]
9	NC [5]
10	External dimming analog input (0 to +5.0 V)
11	GND [4]
12	NC [5]
13	NC [5]
14	+5 V output (20 mA max.)
15	GND [4]

Notes: 4) GND internal specification

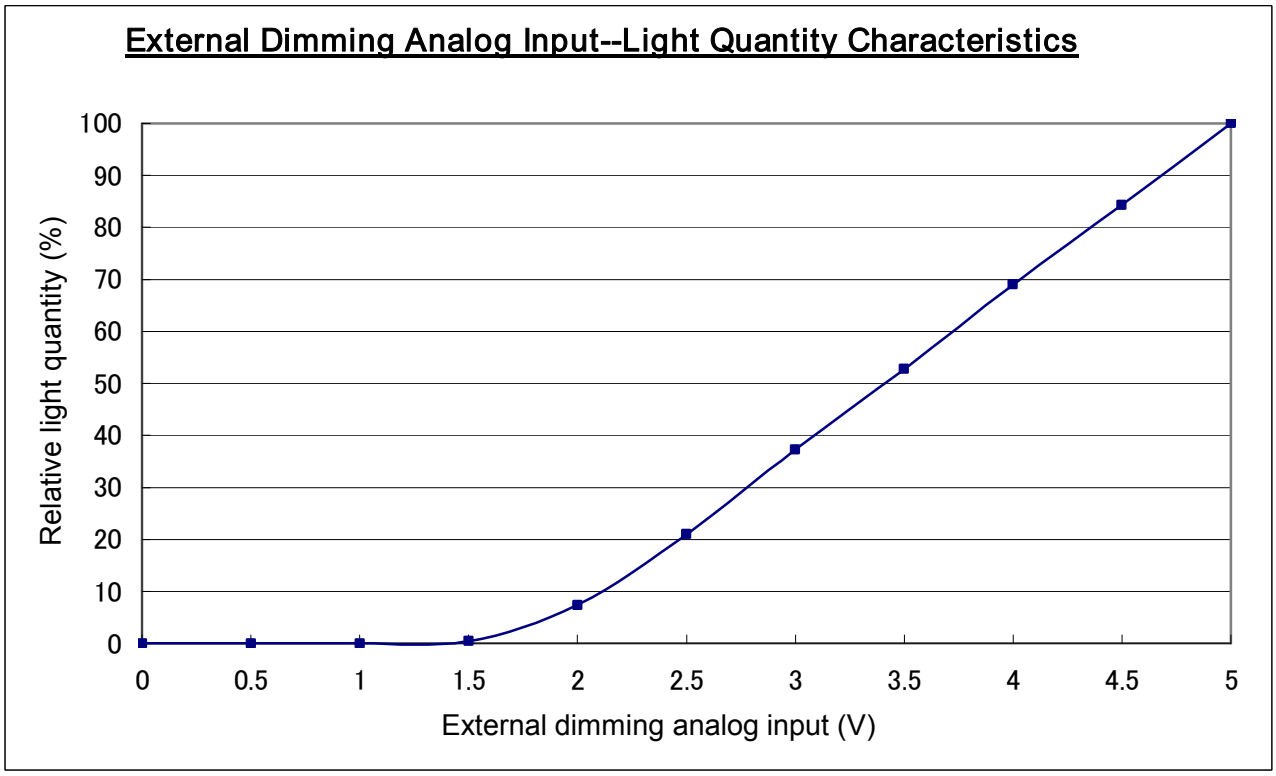
5) NC (not connected) (not used)

Option: External control cable (One side of the cable is open) manufactured by CCS

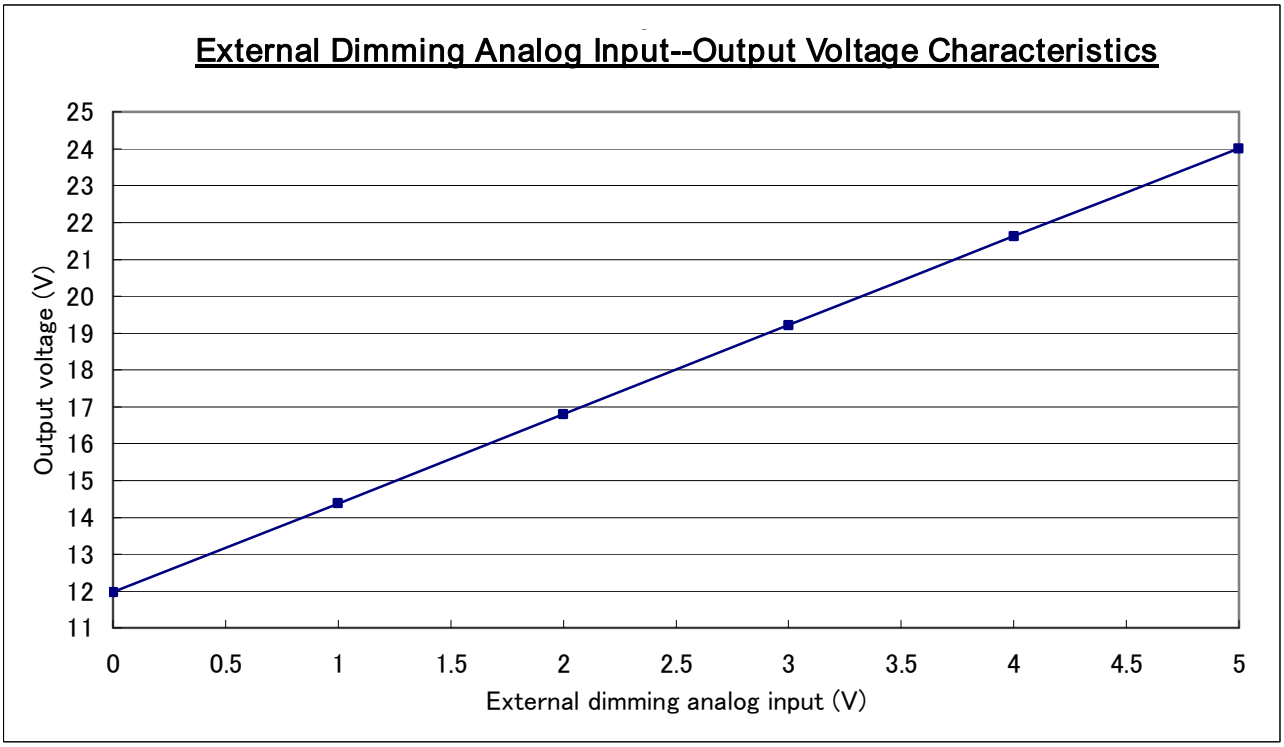
4-3 Internal circuit (reference)



4-4 Dimming characteristics (reference)



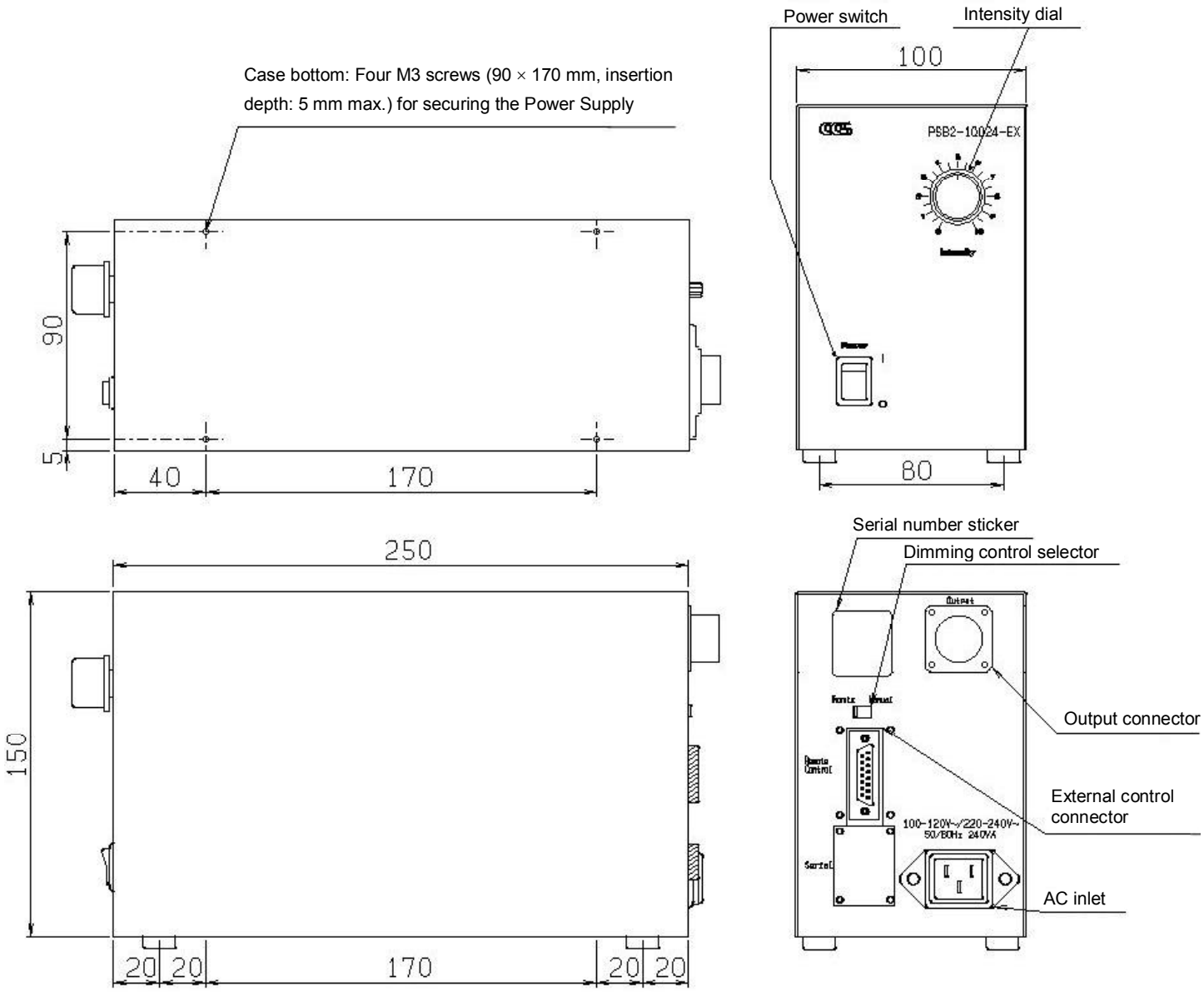
The relative light quantity characteristics are the results measured for the HLND-300SW-T Illuminator.



5. Specifications

Name	PSB2-10024-EX
Input voltage	100 to 120 VAC/220 to 240 VAC
Power consumption	240 VA max.
Frequency	50/60 Hz
Inrush current	30 A typ. (from a cold start)
Output voltage variation range	12 to 24 V (with no load)
Maximum power	100 W
Output overcurrent protection	Operates at 105% of the rated current. Reset automatically.
Output overvoltage protection	Operates at 115 to 140% of the rated voltage. Reset when the power is turned ON again.
Dimming method	Analog voltage control.
Dimming control selector	Manual (internal): Only the Intensity dial on the front of the Power Supply is enabled. Remote (external): Only the external control signal only is enabled. Dimming possible with analog voltages from 0 to +5.0 V.
Lighting OFF control	Lighting OFF control input (external control connector pin number 1) OFF: 2 to 5 V ON: 0 to 0.8 V or open
Connectors	Output connectors: SRCN2A16-7S (JAE) External control connector: 15-pin D-sub (male, millimeter screws)
Lighting ON/OFF response time	0.1 second typ.
Start time	0.5 second typ.
Insulation/dielectric strength	500 VDC, 20 MΩ min., 2,400 VAC for one second (10 mA) between input and output connectors and between input connector and frame ground. 500 VDC, 20 MΩ min., 600 VAC for one second (100 mA) between output connector and frame ground.
Operating environment	•Temperature: 0 to 40 °C, humidity: 20 to 85%RH (with no condensation)
	•Altitude: 2,000 m max., pollution level: 2 •Protective ground class I, installation category II (restricted to use in indoor environments)
Storage environment	Temperature: 20 to 60°C, humidity: 20 to 85%RH (with no condensation)
Case	SECC t1.0, paint color N3 (leather-tone finish)
Cooling method	Natural air cooling
Dimensions	100 x 250 x 150 mm (WxDxH)
Weight	3.0 kg max.
Accessories	2-m 3-pin AC power cable with ground terminal, Instruction Guide, Warranty (external control connector not included)

6. Dimensional Diagrams (mm)



7. Care and Handling

⚠ Warning

・Turn OFF the Power Supply and unplug it from the outlet before handling.

⚠ Caution

・Do not scratch the unit by handling it with a hard object.
・Do not let water or cleanser enter the unit.
・Use no chemical agents other than neutral cleanser.

For cleaning, dampen a soft cloth with diluted neutral cleanser, wring out the cloth, and gently wipe off the unit. Use another soft cloth to wipe the unit dry.

Warranty

1 Duration of warranty

The duration of the product warranty shall be one year from the day of product delivery.

2 Extent of warranty

(1) If a fault or defect attributable to CCS becomes apparent during the duration of the warranty, CCS will in good faith ship a replacement, or replace or repair the defective part of the product free of charge. The following cases, however, are not covered by the warranty.

- Faults or damage that occur due to conditions, environments, handling, or usage other than those described in the Instruction Sheet and specifications.
- Faults or damage that occur due to modification of structure, performance, specifications, etc., by a party other than CCS.
- Faults or damage that occur due to use of the product other than for its designed purpose.
- Faults or damage that occur due to reasons scientifically and technically unforeseen at the time the warranty with CCS was entered into or at the time of shipment.
- Faults or damage that occur due to natural or human causes not attributable to CCS, such as saltwater air damage, gas damage, earthquakes, floods, fire, lightning, or armed conflicts.

(2) This warranty is limited to this product purchased from CCS. Any consequential or other damage induced by a fault or defect in the product is not covered by the warranty.

(3) CCS shall not be responsible for any damages suffered by the customer because of late delivery of the product due to a natural disaster or other causes not attributable to CCS.

(4) If CCS does bear responsibility for damage, compensation shall not exceed the cost of replacing the product.

(5) CCS shall bear no responsibility in any way for damages that occur due to handling as part of export controls.

(6) This CCS product is designed and produced for use in the conditions and for the purposes described in the Instruction Sheet and specifications. Therefore, the warranty does not apply to nuclear energy control systems, aerospace systems, vehicles, railroad systems, medical equipment, or other applications that present a significant risk to life or property.

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KZ-00353-T001-000 No. MP074-E Oct.2006