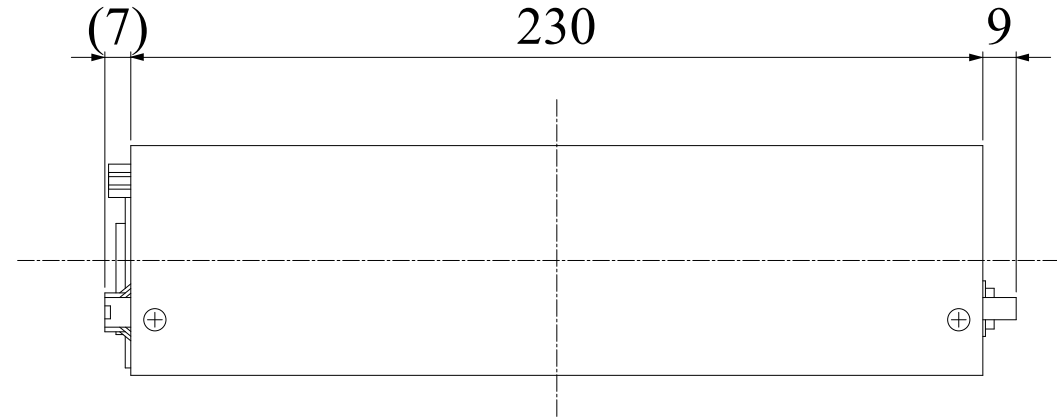


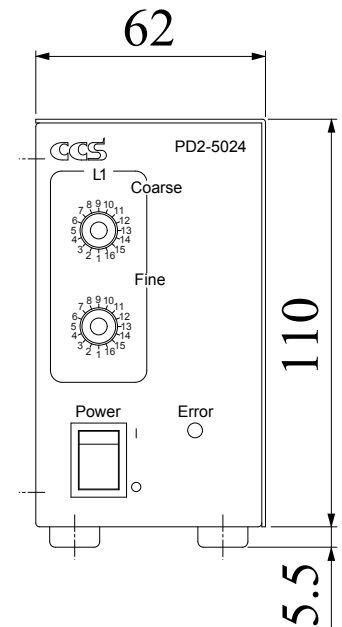
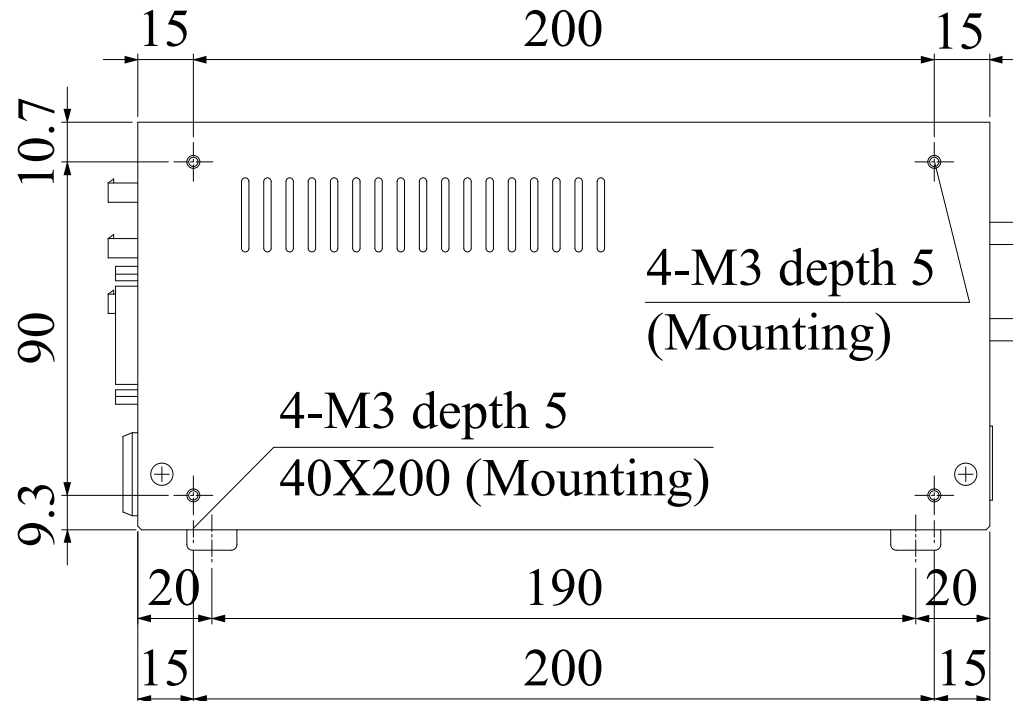
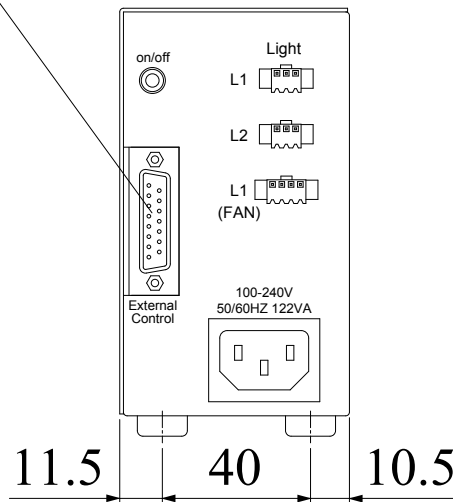
PD2-5012/ PD2-5024

Model	PD2-5012	PD2-5024
Power requirements	AC100-240V 122VA	AC100-240V 122VA
Output	12V/46W	24V/46W
Mass	1300g	1300g
Connector type	2P (1: +, 2: -) x2	3P (1: +, 2: NC, 3: -) x2

Third Angle Projection Units: mm



External control connector
D-Sub15pin



Digital Power Supplies

PD2 Series

CE	Models with CE Marking:
	PD2-3012 / PD2-3024 / PD2-5012 / PD2-5024 / PD2-3012-2 /
	PD2-3024-2 / PD2-3012-4 / PD2-3024-4 / PD2-3012-8 / PD2-3024-8

Offers repeatable, linear light intensity control with 256 discrete levels using coarse and fine adjustments

The PD2 Series of digital power supplies are designed specifically for use with CCS LED lights. Compared with analog power supplies, the PD2 Series provides a more linear and repeatable intensity control because of the force-detent adjustment course/fine adjustment knobs and benefits of pulse duty control. The PD2 Series is suitable for all CCS lights without dedicated power supplies. The Series is designed to meet the requirements of the widest variety of applications with the 12 and 24V options, power ratings range, and the number of independent output channels. The PD2 Series is compatible with RoHS Directive*, ensuring compatibility with worldwide requirements.



PD2-1012/PD2-1024

PD2-3012/PD2-3024

PD2-5012/PD2-5024

PD2-3012-2/PD2-3024-2

PD2-3012-4/PD2-3024-4

PD2-3012-8/PD2-3024-8

Selecting a PD2 Series power supply

- (1) Select a 12-V or 24-V output models according to the voltage of a LED lights used.
- (2) Select from the 10-watt or 30-watt models according to the total of power consumption of LED lights to be used.
- (3) Select from 2-channel, 4-channel, or 8-channel models to according to the number of independent outputs needed (multiple lights can be connected to a single output channel with a 2 or 4 way split cables).
- (4) Select one of the optional external control cables. (Refer to information on page 63)

PD2 Series Specifications

Model	PD2-1012	PD2-1024	PD2-3012	PD2-3024	PD2-5012	PD2-5024	PD2-3012-2	PD2-3024-2	PD2-3012-4	PD2-3024-4	PD2-3012-8	PD2-3024-8
Input voltage ¹⁾	100~120V AC						100~240V AC					
Input current ²⁾	0.25A typ.		0.78A typ.		1.3A typ.		0.78A typ.					
Frequency	50/60Hz											
Inrush current ²⁾	15A typ.											
Number of channels	1	1	1	1	1	1	2	2	4	4	8	8
DC output voltage	12V	24V	12V	24V	12V	24V	12V	24V	12V	24V	12V	24V
Output power	9.5W max.	9.0W max.	28W max.	28W max.	46W max.	46W max.	28W max.	28W max.	27W max.	27W max.	25W max.	25W max.
Intensity control	Control method : 60kHz (approx.) pulse duty control Manual : 256-level of intensity control using dual 16 position Coarse and Fine rotary knob on the control panel External control : Intensity control using 8-bit parallel signal											
External control input	Input circuit : At + 5.0V with 4.7k Pull-up resistor.								Input circuit : At + 5.0V with 1.5k Pull-up resistor.			
	HS-CMOS, Low level: 1.35V or less, High level: 3.15V or more											
External control connector	D-Sub 15-pin (male)								D-Sub 25-pin (male)			
ON/OFF control	Manual : 3.5-mm microphone jack External control : D-Sub 15-pin ON signal (Asynchronous with write sequence)								Manual/□ : D-Sub 25-pin OFF signal External control (Asynchronous with write sequence)			
ON/OFF response	OFF - ON: 10μs typ., ON - OFF: 10μs typ.											
Startup time	0.5sec typ.											
Output overcurrent protection	Activated by 107% minimum of the rated output current and reset by turning the power supply ON with front panel power switch.											
Operating environment	Temperature 0 to 40 °C, humidity 20 to 85%RH (with no condensation)											
Storage environment	Temperature -20 to 60 °C, humidity 20 to 85%RH (with no condensation)											
Weight	0.7kg or less		1.1kg or less		1.3kg or less		1.1kg or less		1.2kg or less		1.5kg or less	

1) Operating voltage: 85 to 132VAC or 85 to 264VAC, 2) At a voltage of 100VAC





PD2 Single Channel Series Instruction Guide Power Supply Units for LED lights

PD2-1012(A)/1024(A)/3012(A)/3024(A)/5012(A)/5024(A)




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 incorrect usage may result in serious injury or death.
 Caution	Indicates incorrect usage may result in injury or equipment damage.

Warning

- (1) Always use one of the following power cords for the PD2-3012(A), PD2-3024(A), and PD2-5012(A), PD2-5024(A).
100 to 120V range: SVT type, AWG18, length: 3m max. , dielectric strength: 125V min. (Note: This power cord is required for compliance with UL)
200 to 240V range: H05W-F type, AWG18, length: 3m max. , dielectric strength: 250V min. (Note: This power cord is required for compliance with EU)
- (2) Plug in or unplug the power cord after turning OFF the power supply. Otherwise it may result in fire or electric shock. Plug the power cord directly into the wall socket.
Please use the product within electricity voltage/current specifications. Otherwise it may cause fire and/or electric shock.
Please unplug the power cord when connecting or disconnecting the product and peripherals.
Do not damage or place heavy objects on power cord. There are risks of damaging the cord, which may result fire or electric shock. 
- (3) If the product is damaged, turn it OFF, unplug the power cord from the wall socket, and contact CCS. Continued usage of the product may result in fire or electric shock.
- (4) Follow the operating procedures stipulated for the product in this instruction guide. Failure to do so may result in diminished protection capabilities.
- (5) The product operates at a power supply voltage of 100 to 240V AC. The supplied power cord, however, is for use with 100V. If the product is to be used at 200V or above, use a 200V power cord for the 30 and 50W models.
- (6) For mounting products in system racks or cases, do not insert M3 type screws more than 6mm. Doing so may cause short-circuit to internal components.
- (7) Do not disconnect power cord or disassemble product while operating. Doing so may result in electric shock. 
- (8) Do not touch the terminals, plugs, or switches with wet hands. Doing so may result in electric shock. 

<p>(9) Ground the power supply. Ground the FG terminal of 10W models with 0.5 to 1.25mm² wires (AWG20 to AWG16) wire if there is a possibility that an operator might touch the power supply unit and a metallic frame with a different electrical potential at the same time. If the frame is not grounded and has electric potential, it is better to connect the FG terminal of the product to the FG terminal of the frame. (Use a 3-prong AC power cord with a ground terminal to ground 30 and 50W models.)</p>	
<p>(10) 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.</p>	

 **Caution**

<p>(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.</p>	
<p>(2) Install products in following locations:</p> <ul style="list-style-type: none"> - On a flat and stable locations with minimal vibration - Well-ventilated places with minimal dust. - Places free from any water, oil, liquid, chemical, or steam. - Places free from corrosive or combustible gas. - Places away from water faucets, boilers, humidifiers, air conditioners, heaters, or stoves. - Places that are not subject to sudden temperature changes. - Places where products can be grounded. 	
<p>(3) Observe the following items for the Power Supply:</p> <ul style="list-style-type: none"> - Always provide dedicated electric power source with stable voltage. Sharing the electric power source with power devices, such as inverters, motors, and so on, may cause product to 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. - Do not touch the power cords or connect peripheral devices during lightning. This may result in electric shock. 	

2. Overview

This power supply is for exclusive usage with LED lighting made by CCS.

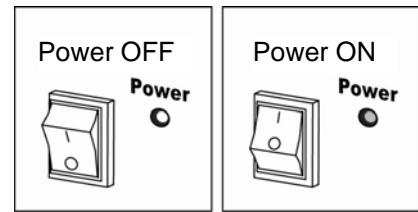
1. Light intensity can be controlled in internal mode from the intensity control knobs on the front panel of the product or in external mode using a PLC, microcomputer, or other device.
2. The external ON/OFF control is available in product.
3. Product models can supply the following power specifications.
 - PD2-1012(A): 12V DC, 0.79A (9.5W)
 - PD2-1024(A): 24V DC, 0.38A (9W)
 - PD2-3012(A): 12V DC, 2.3A (28W)
 - PD2-3024(A): 24V DC, 1.16A (28W)
 - PD2-5012(A): 12V DC, 3.83A (46W)
(1-channel: 30W max.)
 - PD2-5024(A): 24V DC, 1.92A (46W)

Do not exceed the maximum wattage for the total number of circuits.

3. Operating Procedure

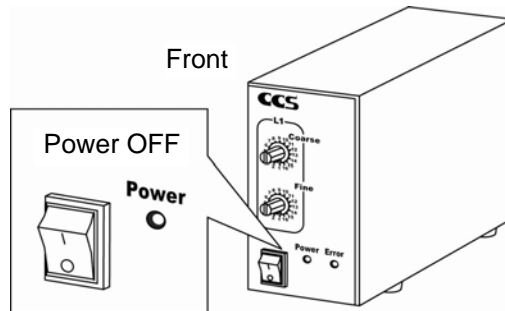
Turning the power ON/OFF

- side of the power switch is OFF.
The power is ON when | side is pressed.
(The power lamp will be illuminated)



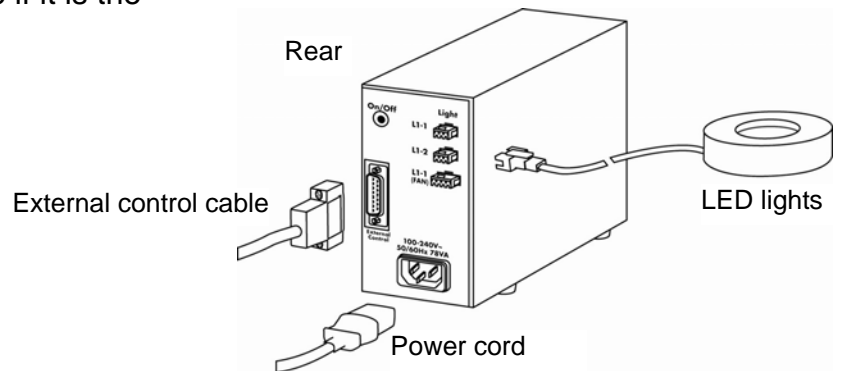
Turning ON lighting

1. Check the power supply is turned OFF.

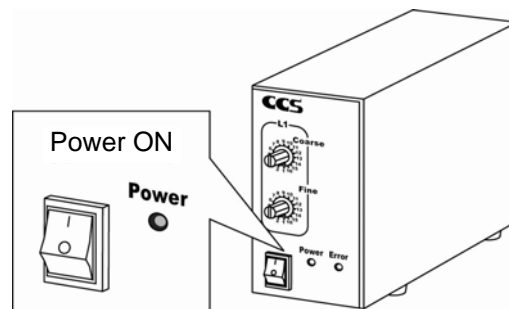


Note:
The illustration shows
the PD2-3012(A)/24(A).
All other models
operate the same way.

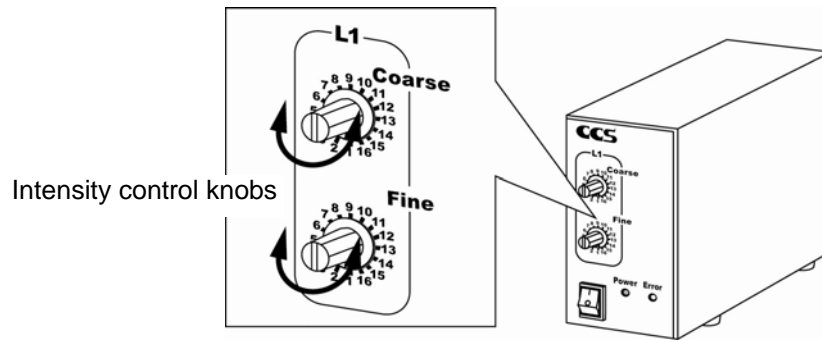
2. Connect the LED lights to the power supply.
3. Plug the power cord of the power supply into a wall socket.
4. Connect an external control cable if it is the case to use external control.



5. Turn the power ON.
(The power lamp will be illuminated)

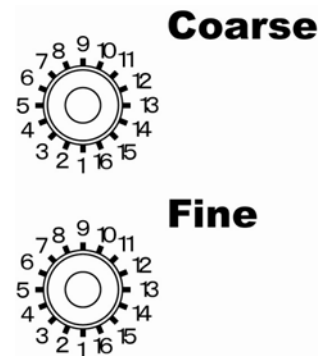


6. Use the intensity control knobs to set light intensity.



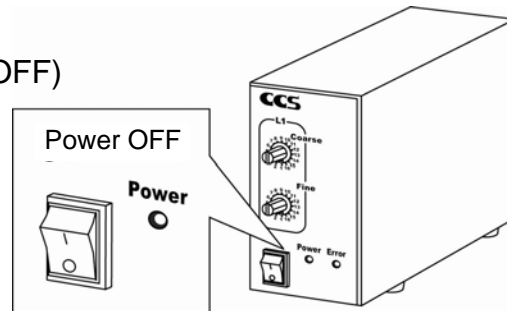
Adjusting lighting intensity

1. Turn the intensity control knobs on the front panel of the product to set the lighting intensity. Each knob controls light intensity in 16 steps. With 16 fine steps for every coarse step (16 steps), the result is up to 256 steps of extremely fine.



Turning OFF lighting

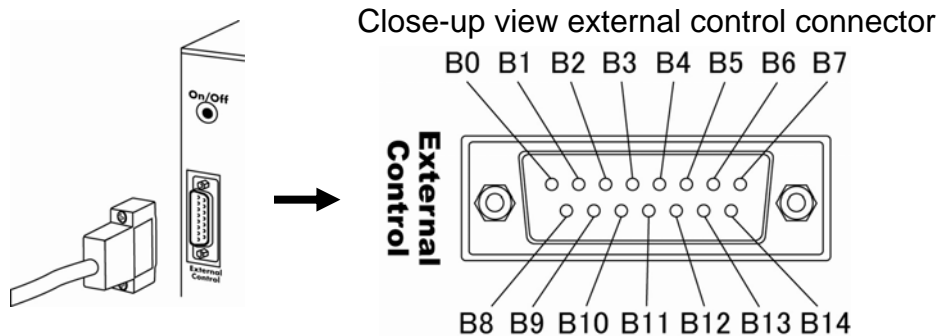
1. Turn the power OFF.
(The power lamp will be turned OFF)



External control

External control

1. A Dsub terminal is provided on the rear panel of the product for external control. The product can be controlled externally using parallel bit control.



2. Pin bit arrangement for external control terminals

Bit	B0	B1	B2	B3	B4	B5	B6	B7	B9	B9	B10	B13
Structure	Light intensity bit (0 to FF)								EXT	WR	ON1	OCP

A driver IC or an open collector outputs a signal to each terminal and the external control signals are input to the product at CMOS level.

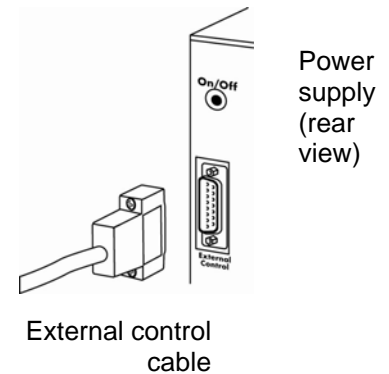
3. Optional external control cable is manufactured by CCS.

4. The product support the following types of external control.

- External and manual light intensity control selection
- Setting light intensity data
- Lighting ON/OFF control
- Overcurrent protection signal monitoring

External control

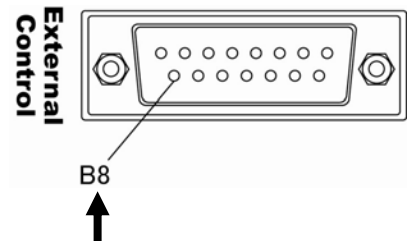
1. Connect the external control cable to the power supply.
(Also connect the lighting and any other devices.)



2. Input the desired control signal from the external control cable.

- 1) External and manual light intensity control selection

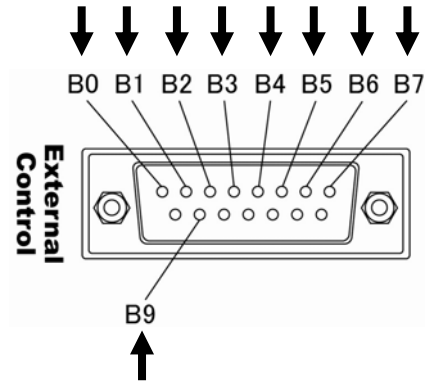
Set bit B8 of the Dsub external control connector to Low to set the product to external control mode. Dimming from the front panel is disabled in this mode. Set bit B8 to HIGH to enable light intensity from the front panel and disable externally controlled light intensity.



2) Setting light intensity data

Set the 8 bits from B0 to B7 as well as B9 to control light intensity. Specify up to 256 steps using bits B0 to B7 and send the write signal to write bit B9 to write the light intensity data to the product. Keep the write signal Low for at least 300µs to write the data, and switch the signal back to HIGH after the minimum write time has elapsed to stop writing data.

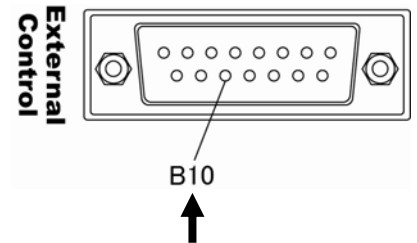
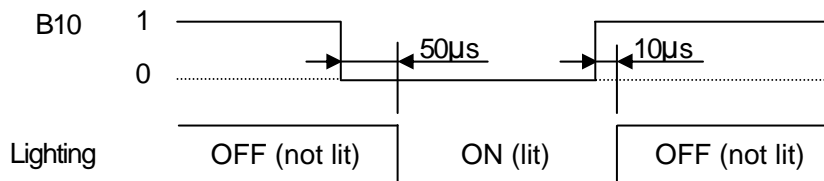
Note: Light intensity settings are enabled only as long as the power supply remains ON and will be lost when the power supply is turned OFF.



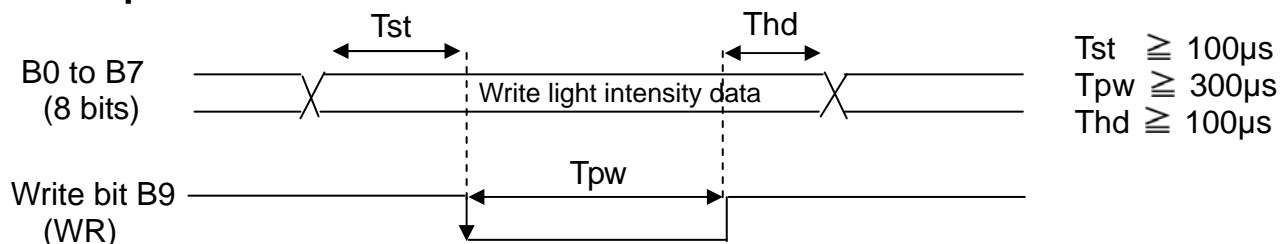
steps	B7 [MSB]	B6	B5	B4	B3	B2	B1	B0 [LSB]	Light intensity(%)	Coarse	Fine
1	0	0	0	0	0	0	0	0	0.4	1	1
2	0	0	0	0	0	0	0	1	0.8	1	2
3	0	0	0	0	0	0	1	0	1.2	1	3
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
19	0	0	0	1	0	0	1	0	7.6	2	3
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
254	1	1	1	1	1	1	0	1	99.2	16	14
255	1	1	1	1	1	1	1	0	99.6	16	15
256	1	1	1	1	1	1	1	1	100.0	16	16

3) Lighting ON/OFF control

After you have selected the light intensity level, use the ON/OFF signal at bit B10 to control when the lighting turns ON and OFF.



Write sequence

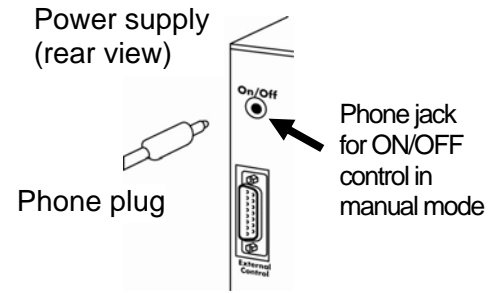


$T_{st} \geq 100\mu s$
 $T_{pw} \geq 300\mu s$
 $T_{hd} \geq 100\mu s$

1. Light intensity data (B0 to B7) is output in negative logic (Low: 1)
2. The write bit is output (data is written when the write signal is fall edge). Keep the write signal HIGH after the data is written.

Manual ON/OFF control

1. In manual mode, the external ON/OFF control is available for the illuminator.

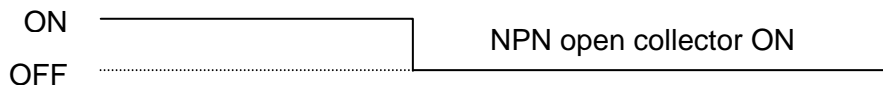


2. Insert the phone plug into the phone jack to send the ON/OFF control signal for manual control.

Note: Control is limited strictly to turning lighting ON and OFF.

Note: This option is not available when light intensity is externally controlled.

Phone jack (Ø3.5) signal line

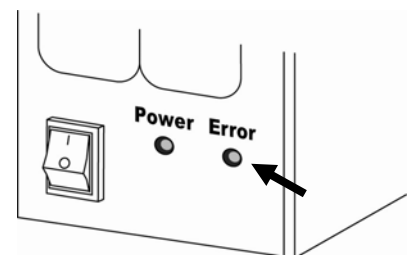
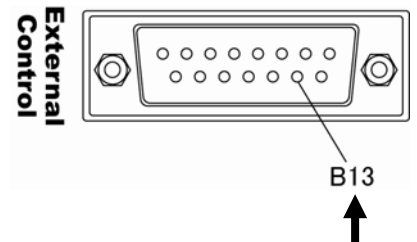


Overcurrent protection

Overcurrent protection output

The overcurrent protection output is a monitoring signal that becomes active when overcurrent is detected. It is output from bit B13. Output circuit is an open collector, with negative logic (active Low).

The product output stops if lighting current consumption (total of all channels) exceeds 107% of the rated current consumption. Also, the red error indicator on the front panel of the power supply will light and output cannot be resumed until the power supply is restarted.



4. Connectors

1. Output connectors: SM connectors (JST)

Pin number	12V output	24V output	12V with fan	24V with fan
1	OUT + (12V)	OUT + (24V)	NC	OUT + (24V)
2	OUT -	NC	OUT + (12V)	NC
3		OUT -	OUT -	OUT -
4			Fan GND	Fan GND
Connector	SMP-02V-BC	SMP-03V-BC	SMP-04V-BC	SMP-04V-BC

With fan: Output connector for lighting L1 (FAN)

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

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

Pin number	Signal
1	Light intensity B0 (LSB)
2	Light intensity B1
3	Light intensity B2
4	Light intensity B3
5	Light intensity B4
6	Light intensity B5
7	Light intensity B6
8	Light intensity B7 (MSB)
9	External control (INT/EXT) B8
10	Light intensity data write (WR) B9
11	Lighting control (ON1) B10
12	-
13	-
14	Overcurrent protection (OCP) B13
15	Signal GND

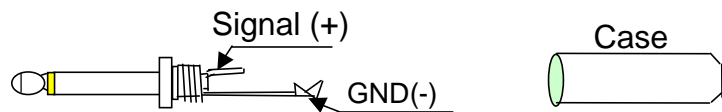
Optional cable: external control cable(cable length: 3m, with one side of the cable cut)
Please read instruction guide using optional cable.

3. Phone jack (Ø3.5) for manual ON/OFF control

Lighting can be turned ON and OFF manually when the phone plug is inserted into the phone jack. The LED lights will turn ON when the signal is connected to ground and will turn OFF when the signal is disconnected from ground.

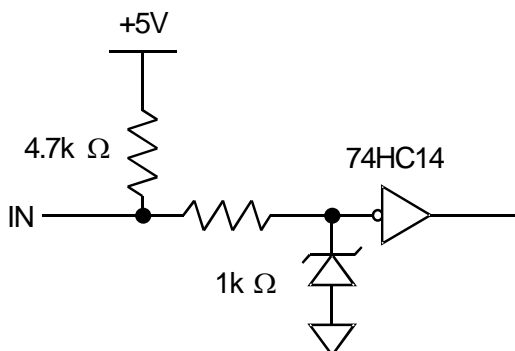
Phone plugs

	Terminal	Signal
1	Inside	ON/OFF signal
2	Outside	GND



Contact your nearest CCS representative if you need to extend the control signal cable or operate in an extremely noisy environment. Cables should not be extended more than 3 m. Potentially harmful noise may be eliminated by installing a 0.01 to 0.1- μ F capacitor between the signal and ground to ensure proper operation of this product. Phone plugs are not included with the power supply kit, but optional 3-m cables with plugs are available. Note: Please read instruction guide using optional cable.

5. PD2 input circuit (negative logic)



Light intensity data: B0 to B7

Control signals: EXT, WR, and ON

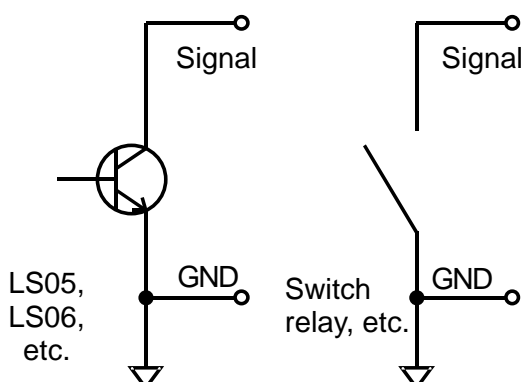
Output using a driver IC or NPN open collector
The 24V output of the sequencer cannot be input as it is. (Maximum allowable input voltage: 5.5V)

PD2 side:

1V max. at low level (0.8V max. is recommended)

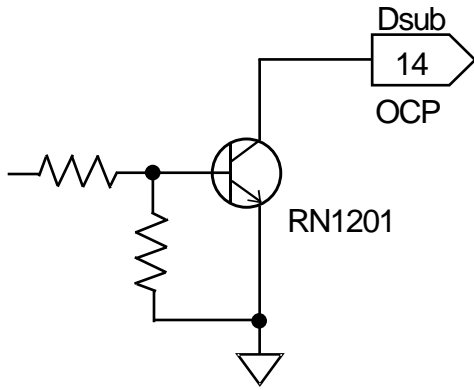
High level: 3.5V min. (4V min. is recommended)

6. Recommended control signal drive circuits: open collector photo-coupler, photo-MOS relay



When using the PD2 in a noisy environment, we recommend that you isolate the signal and ground lines from the control unit with photo-couplers or photo-MOS relays. Any element that supplies around 10mA can be used to drive the circuit.

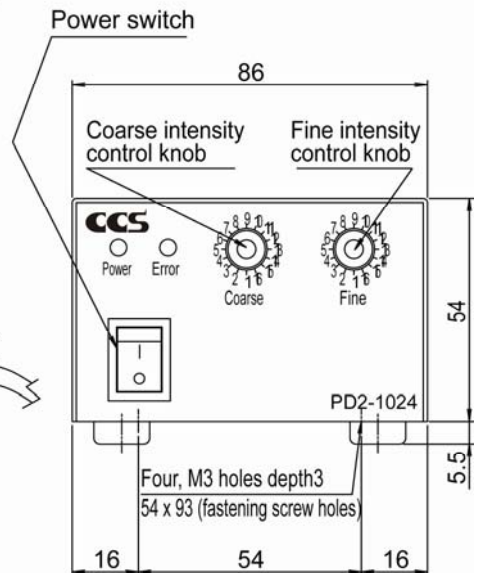
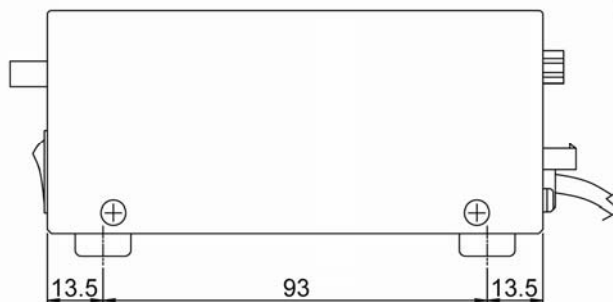
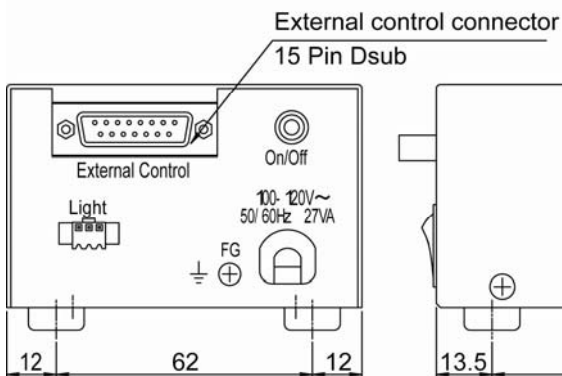
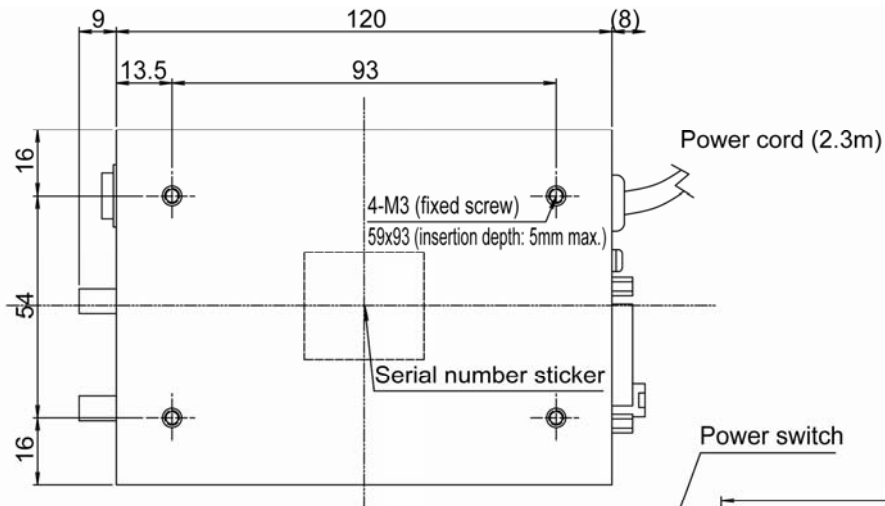
7. PD2 overcurrent protection signal output circuit (open collector)



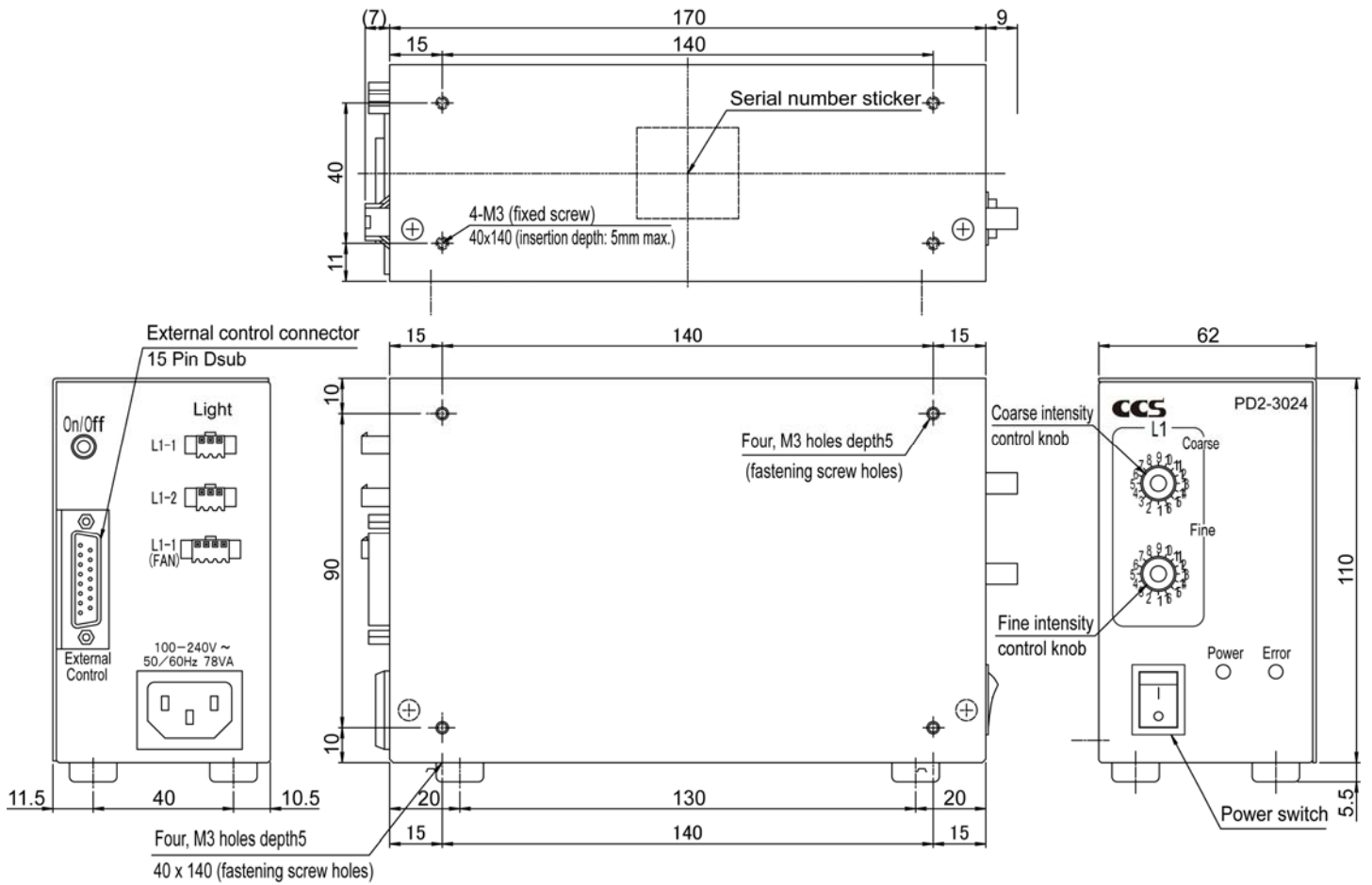
Output transistor: RN1201 (mfd. by Toshiba)
 V_{CE0} : 50V
 I_c : 100mA
 Max. current capacity: 100mA

8. Dimensional Diagrams (mm)

PD2-1012(A)/1024(A)

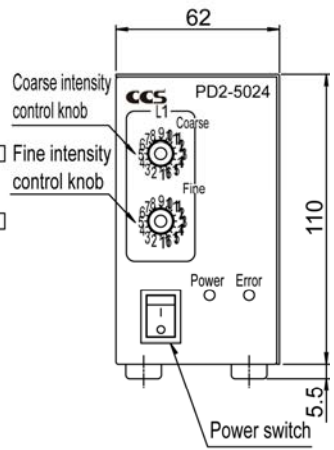
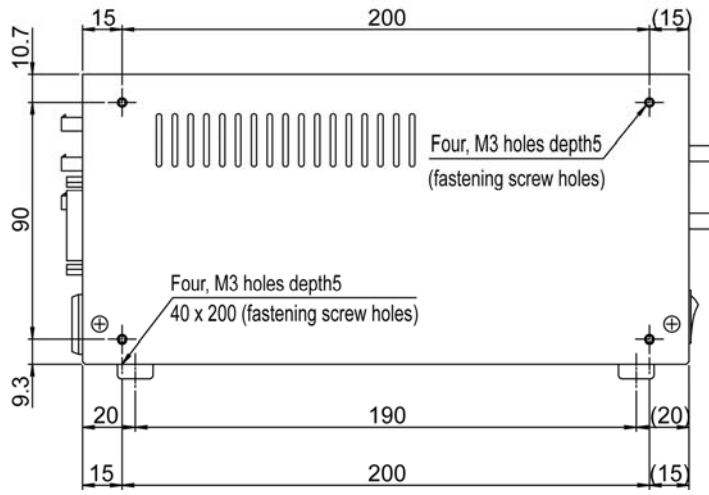
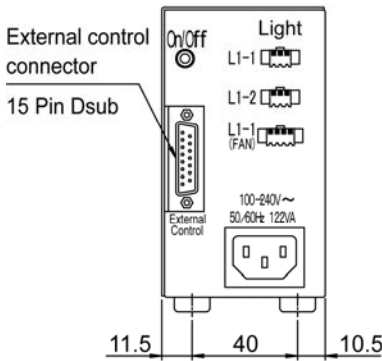
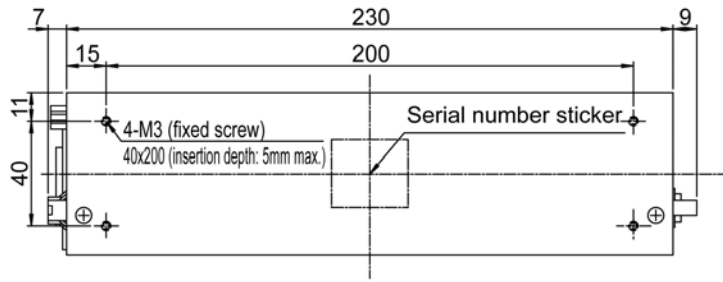


PD2-3012(A)/3024(A)



Supplied 3-prong AC power cord (2m)

PD2-5012(A)/5024(A)



Supplied 3-prong AC power cord (2m)

9. Specifications

Models	PD2-1012(A)	PD2-1024(A)	PD2-3012(A)	PD2-3024(A)	PD2-5012(A)	PD2-5024(A)
Input voltage (Rating) [*1]	100-120V AC		100-240V AC			
Power consumption	27VA typ.		78VA typ.		122VA typ.	
frequency	50/60Hz					
Leakage current	3.5mA max. (132V AC, 60Hz, under full-load condition)		3.5mA max. (264V AC, 60Hz, under full-load condition)			
Overcurrent protection [*2]	Operates at 107% min. Automatically reset, or manually reset by turning power OFF then ON again.					
Between input and output connectors	1500V AC for one minute 10mA max. cutoff current 500V DC, 20M Ω min.					
Between input connector and frame ground	1500V AC for one minute 10mA max. cutoff current 500V DC, 20M Ω min.					
Operating temperature and humidity	Temperature: 0 to 40°C Humidity: 20 to 85%RH (with no condensation)					
Storage temperature and humidity	Temperature: -20 to 60°C Humidity: 20 to 85%RH (with no condensation)					
Vibration	Acceleration: 19.6m/sec ² Frequency: 10 to 55Hz in 3-minute intervals Sweeping cycle: In X, Y, and Z directions for 1 hour each.					
Cooling method	Natural air cooling				Forced air cooling	
Altitude	2000m max.					
Protective ground class	Class I					
Pollution	Pollution level: 2					
Safety standard			CE marking EN61010-1			
EMC Mandates	EN61326 compatible		EN61326			
Environmental regulation	RoHS directive					
Input connector	External control connector: 25-pin D-sub (plug, M2.6 millimeter screws) Manual on/off control: Phone jack (\varnothing 3.5)					
Output connector	Lighting output connector: SMP-02V-BC / SMP-03V-BC / SMP-04V-BC (socket) (JST)					
Dimensions	W86 X D120 X H54mm		W62 X D170 X H110mm		W62 X D230 X H110mm	
Material, coating, and surface treatment	SECC t1.0, paint color N3 (leather-tone finish)					
Weight	0.7kg		1.1kg		1.3kg	
Accessories [*3]			2-m long 3-prong AC power cord			
	Instruction Guide, Optional Cable List					

*1: The operating voltage range is -15% to +10% of the input voltage.

*2: The overcurrent protection circuit is activated when the rated load is exceeded.

(Power supply operation is stopped by internal circuits. Restart the power supply to restore operation.)

*3: External control cable not included

10. 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.
- Do not use cleansers or chemical agents other than those listed below.

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.

■ RoHS Directive

● EU RoHS Directive

The RoHS Directive is short for the "restriction of use of certain hazardous substances in electrical and electronic equipment." As a directive, it restricts the use of specific hazardous substances for new electrical and electronic equipment marketed in the EU on or after July 1, 2006, and restricts the use of six substances, which are (1) lead, (2) mercury, (3) cadmium, (4) hexavalent chromium, (5) polybrominated biphenyl (PBB), and (6) polybrominated diphenyl ether (PBDE).

Standards for "RoHS Directive-Compliant Products"


Lead	1000ppm Min
Mercury	1000ppm Min
Cadmium	100ppm Min
Hexavalent chromium	1000ppm Min
PBB	1000ppm Min
PBDE	1000ppm Min

(Items that are exempted in the RoHS Directive are excluded from these standards.)

● China RoHS Directive

China RoHS Directive is formally known as "Management Methods for Controlling Pollution by Electronic Information Products", which was implemented on March 1, 2007 in China. Same as EU RoHS Directive, this regulation restricts the usage of six substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE). This regulation requires electronic information products which are manufactured or imported, and sold in China, to clearly disclose contents of the 6 restricted substances listed below.


Name and amount of toxic and hazardous substances or elements, which products contain

Usage Deadline for Environmental Protection	Product name	Toxic or Hazardous Substances and Elements					
		Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	PBB	PBDE
	Power supply for LED Lights	×	○	×	○	○	○
<p>○ :Indicates that this toxic or hazardous substances contained in all the homogeneous materials for this part, according to SJ/T11363-2006 is within the limit requirement.</p> <p>× :Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to SJ/T11363-2006, is over the limit requirement.</p> <p>Note: Lead and cadmium are excluded in EU RoHS.</p>							

Usage deadline for environmental protection

The number used in this logo is based on "Management Methods for Controlling Pollution by Electronic Information Products" and related regulations from People's Republic of China. It shows the product usage duration in years for environmental protection. After finishing a product usage, the product need to be re-used or discard appropriately following local law and regulations, complying with safety and usage caution.

产品中有毒有害物质或元素的名称及含量

环保使用期限	产品	有毒有害物质或元素					
		铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
	LED照明专用电源	×	○	×	○	○	○
<p>○：表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T11363-2006 标准规定的限量要求以下。</p> <p>×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T11363-2006 标准规定的限量要求。</p> <p>(注) 铅和镉中的“×”，因欧洲RoHS没限定，故用“○”表示。</p>							

环保使用期限

此标志的数字是根据中华人民共和国电子信息产品污染控制管理办法以及有关标准等，表示该产品的环保使用期限的年数。

遵守产品的安全和使用上的注意，在产品使用后采取适当的方法根据各地法律，规定，回收再利用或进行废弃处理。

■ Warranty Information

Warranty period: Two years (one year for radiant quantity), starting from CCS Inc. shipping date.

CCS Inc. will repair or replace the product free of charge if it should fail to function or if the radiant quantity of the product should drop to 50% or less of its initial radiant quantity within the specified warranty period. If either of these conditions occurs, please take the product to your CCS sales representative.

Warranty Terms

1. CCS Inc. will repair or replace the product free of charge if it should fail to function under normal use in accordance with the Instruction Guide and other written cautions during the indicated warranty period of two years
2. CCS Inc. will repair or replace the product free of charge if its radiant quantity should drop to 50% or less of its initial radiant quantity under normal use in accordance with the Instruction Guide and other written cautions during the indicated warranty period of one year.
3. CCS Inc. will charge a repair fee under the following conditions :
 - 1) If the product has been subjected to misuse, unauthorized repairs, or modification from its original design.
 - 2) If the product has been damaged from impacts due to inappropriate handling
 - 3) If damage to the product results from external causes including accidents, fire, pollution, riots, communication failures, earthquakes, thunderstorms, wind and flood damage, or any other act of providence, or from any extraordinary conditions such as electrical surges, water leakage, condensation, or the use of chemicals
 - 4) If the damage results from connection to any power supply or to any equipment which CCS Inc. does not manufacture or does not specify for use

Note: The radiant quantity refers to the wattage of physical energy radiated from a LED. It refers to the radiation luminosity of the LED measured under conditions specified by CCS or the radiation illumination of the LED under specified irradiation conditions. CCS specifies the radiant quantity for each LED light because the measurement and irradiation conditions vary from the form, the application and the irradiation wavelength.

This warranty information provides the scope of CCS's product warranty within the specified period, and does not indicate or imply any further guarantee beyond the warranty terms.

Contact CCS for inquiries or information on repairs to the product after the expiration of the warranty.



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