

Bar Lights LDL2-33×8

Instruction Guide

LED Light for Machine Vision
and Industrial Inspection

Thank you for purchasing a CCS product. To ensure proper use of the product, please read this instruction guide before use and keep it for your future reference.






1 Important Information for Equipment Safety - Read Before Use -









Incorrect usage of the product may result in fire, electric shock, or other serious damages. Please ensure to follow the conditions below.







The following symbols are used in this instruction guide to indicate and classify the relative importance of warnings and cautions.

 Warning	Indicates that incorrect usage may result in serious injury or death.	 Caution	Indicates that incorrect usage may result in injury or property damage.
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The following symbols in the instruction guide indicate and classify the precautions.

 PROHIBITED	 DISASSEMBLY PROHIBITED	 DO NOT TOUCH WITH WET HANDS	 DO NOT SUBJECT TO MOISTURE	 INSTRUCTED
These symbols mean the prohibited action.				These symbols mean the necessary action must obey.

 Warning	
Do not disassemble or modify the product. Doing so may result in fire or electric shock.	 DISASSEMBLY PROHIBITED
Do not touch the product with wet hands. Doing so may result in electric shock.	 DO NOT TOUCH WITH WET HANDS
Make sure that the product is free of moisture or any liquid. Exposure to water may result in fire, electric shock, or product failure.	 DO NOT SUBJECT TO MOISTURE
Connect or disconnect the light cable only after turning off the power supply for the LED light. Failure to do so may result in circuit damage, fire caused by a minute spark, or electric shock.	 INSTRUCTED
LED light radiation may cause corneal or retinal abnormalities if you look directly at the light. To prevent harmful light exposure, never look directly at the LED light.	 INSTRUCTED
This product generates high temperatures. Do not touch the product while it is turned on or immediately after it is turned off, or burning may result. Provide cooling with a fan or other ventilation if the product is to be used in a closed space.	 INSTRUCTED
If abnormal condition occurs such as fuming, heat, smell, noise, or so on, stop using the product immediately, and turn the power off. A fire or electric shock may result if the product is kept used.	 INSTRUCTED

 Caution	
Do not use user-made cables. Doing so may cause product failure. Use the CCS extension cable if it is necessary to extend the distance between the light and the power supply.	 PROHIBITED
Be careful of static electricity. Damage to the LED light may occur, if a person charged with static electricity touches it. Keep the product away from all items charged with static electricity.	 PROHIBITED
Do not drop the product or subject it to impact. Doing so may cause the product to malfunction.	 PROHIBITED
Use a power supply that is suitable for the product ratings. Using an incorrect power supply can cause product failure.	 INSTRUCTED
Make sure that the length of the extension cable is less than 5m. If the extension cable is longer than 5m, the voltage applied to both ends of the LED light will drop due to the DC resistance of the cable. The rated voltage will not be attained for 100% radiant ability, and the radiant quantity will drop as a result.	 INSTRUCTED

Do not use the product in the following situations.

- Under conditions or in an environment not described in this instruction guide.
- In nuclear energy control systems, railroad systems, aviation systems, vehicles, combustion equipment, medical equipment, amusement machines, or safety equipment.
- In applications involving serious risk to life or property, particularly applications demanding a high level of safety.

Please install the product to locations with following conditions. Incorrect installation location may cause product failure.

- In a flat and stable location with minimal vibration.
- Well-ventilated places with minimal dust.
- Places that are not subject to sudden temperature changes.
- 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.

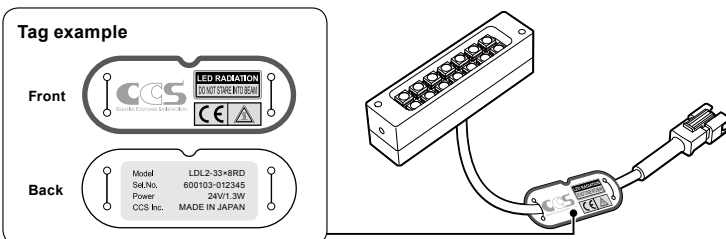
Use the product under the following conditions. Using the product under any other conditions may damage the product.

- Operating temperature: 0 to 40°C, Humidity: 20 to 85%RH (with no condensation)
- Storage temperature: -20 to 60°C, Humidity: 20 to 85%RH (with no condensation)

Note: Before using Infrared LED Lights, read the enclosed Handling Precautions for Infrared LED Lights.

2 Confirming Product Information

The following tag is attached to the cable on the LED Light. The color of the label indicates the luminescence color of the Light. The back of the tag there is a name label that gives the model number, power consumption, and serial number. Be sure to check the contents before using the product and handle the label with care. If the label is missing or damaged and the contents cannot be checked, please contact CCS Inc.



3 Installation

Side Installation

Required Parts
Use M2 screws that are no more than 4mm longer than the thickness of the mounting surface.

* Recommended tightening torque: 0.09 N·m

Direct Installation

M2 screw
Mounting surface

Installation with Brackets

M2 screw
Required Parts: Brackets

Rear Installation

Required Parts
Use M3 screws that are no more than 4mm longer than the thickness of the mounting surface.

* Recommended tightening torque: 0.4 N·m

Direct Installation

M3 screw
Mounting surface

Installation with Brackets

M3 screw
Required Parts: Brackets

4 Operating Instructions

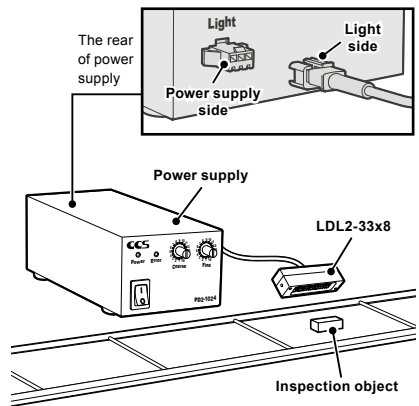
1 Connect the light cable of the product to the power supply output connector.

- Use a power supply that is suitable for the product ratings.
- Make sure that the power supply is turned OFF before connecting.
- Insert the plug all the way into the connector.

2 Turn ON the power supply to turn ON the light.

3 Adjust light range, light angle, and radiant quantity to optimize images. Adjust the radiant quantity at the power supply.

When using white LED lights with color image processing equipment, readjust the white balance of the camera according to the operating conditions.



Read the instruction guide of the power supply before use.

5 Options (Sold Separately)

Note: The Diffusion Plate and Polarizing Plate cannot be used for an Infrared Light.

1 Diffusion Plate DF-LDL2-33×8

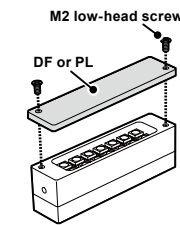
Diffuses direct light. This enables uniform lighting of inspection objects.

2 Polarizing Plate PL-LDL2-33×8

HO: Light is polarized parallel to the longer edge of the plate.
VE: Light is polarized parallel to the shorter edge of the plate.

Light is directly polarized. Prevent light reflection by using the polarizing plate together with the polarizing filter (PL Series) mounted to the lens.

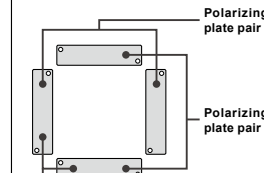
Mounting Method



Accessories
2 screws
1 spare screw
M2x6 low-head screws

* Recommended tightening torque: 0.06 N·m

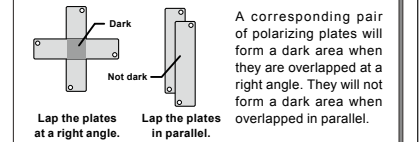
Method of Combination



If you lay adjacent polarizing plates at a right angle to each other, the overlapping portion will not be dark. If you lay them in parallel, the overlapping portion will be dark.

There are two types of polarizing plates. When light is radiated from four directions, use a pair of the same type of polarizing plates on the left and right and a pair of the other type on the top and bottom.

How to Recognize a Polarizing Plate Pair



3 Bracket BK-LDQ2-33×8

This bracket can be used to mount four bar lights. The irradiation angle is adjustable.

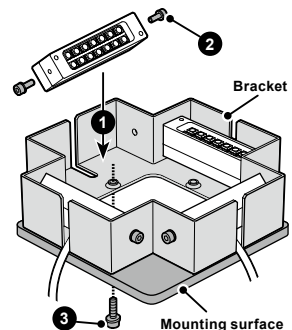
Mounting Method

Accessories
M2x5 screws
M2 washers
8 each +1 spare screw

Required Parts
Use M3 screws that are no more than 4mm longer than the thickness of the mounting surface.

* Recommended tightening torque: 0.4 N·m

- Place the bar lights into the four sides of the bracket.
- Adjust the radiation angles and secure the bar lights with the M2x5 screws.
- Secure the bracket to the mounting surface with M3 screws.



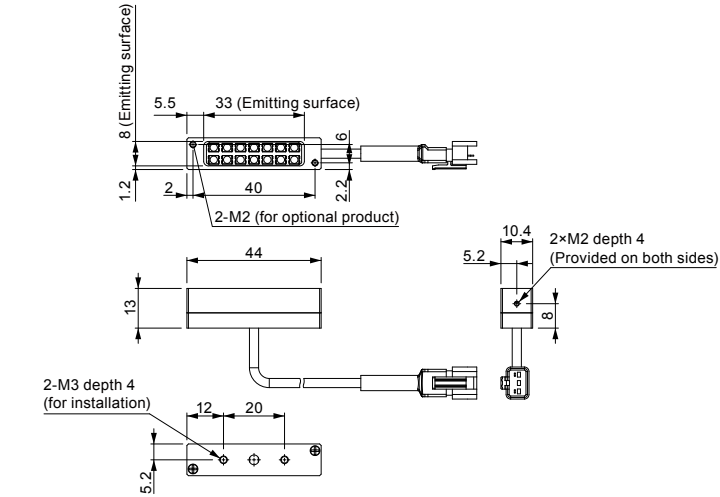
6 Main Specifications

Model	LED color	Peak wavelength /Correlated color temperature (typ.)	Input voltage (max.)	Power consumption (max.)	Weight (max.)	Polarity and signal	Case material
LDL2-33×8RD	Red	635 nm	24 VDC	1.3 W	20 g	SMR-03V-B 1: (+) 2: NC 3: (-)	Aluminum alloy, POM
LDL2-33×8BL	Blue	470 nm		0.8 W			
LDL2-33×8GR	Green	525 nm		0.8 W			
LDL2-33×8SW	White	6600 K		1.3 W			
LDL2-33×8IR850	Infrared	850 nm					

7 Dimensional Diagrams (mm)

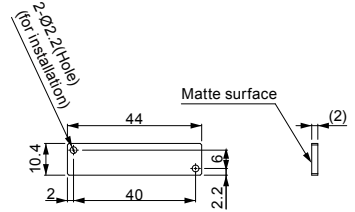
LDL2-33×8RD / BL / GR / SW / IR850

Cable length: 300 mm



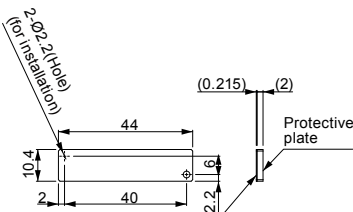
DF-LDL2-33×8

(Optional item, sold separately)

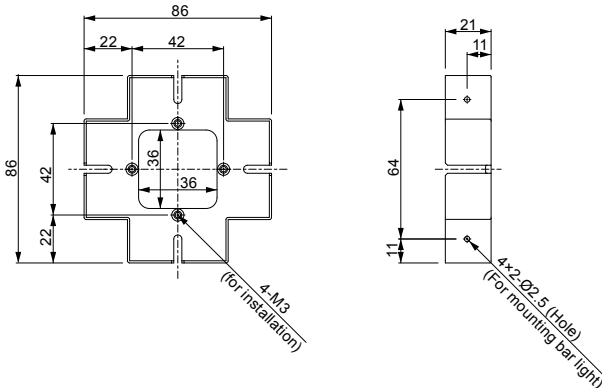


PL-LDL2-33×8-HO / VE

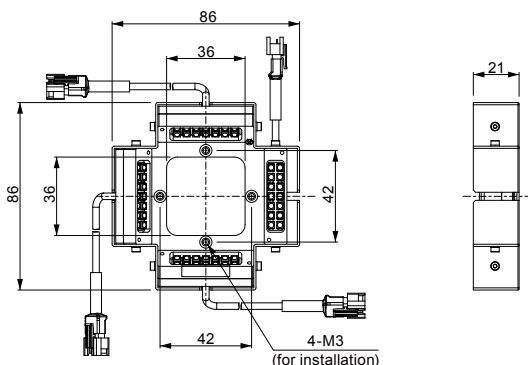
(Optional item, sold separately)



BK-LDQ2-33×8 (Optional item, sold separately)



Mounting Diagram for LDL2 Bar Lights and Bracket



8 Environmental Regulation

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	Mercury	Cadmium	Hexavalent chromium	PBB	PBDE
1000ppm max.	1000ppm max.	100ppm max.	1000ppm max.	1000ppm max.	1000ppm max.

(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							
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
	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>*Lead and cadmium are excluded in EU RoHS.</p>							
<p>Usage deadline for environmental protection</p> <p>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 needs to be re-used or discarded appropriately following local law and regulations, complying with safety and usage caution.</p>							

产品中有害有害物质或元素的名称及含量							
环保 使用期限	产品	有害有害物质或元素					
		铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
10	LED 照明	×	○	×	○	○	○
<p>○：表示该有害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>×：表示该有害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>							
<p>环保使用期限</p> <p>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。</p> <p>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。</p>							

Warranty Information

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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

- CCS Inc. WILL REPAIR OR REPLACE THE PRODUCT FREE OF CHARGE IF IT SHOULD FAIL TO FUNCTION UNDER USE ON OUR SPECIFIED CONDITION IN ACCORDANCE WITH THE INSTRUCTION GUIDE AND OTHER WRITTEN CAUTIONS DURING THE INDICATED WARRANTY PERIOD OF TWO YEARS.
- 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 USE ON OUR SPECIFIED CONDITION IN ACCORDANCE WITH THE INSTRUCTION GUIDE AND OTHER WRITTEN CAUTIONS DURING THE INDICATED WARRANTY PERIOD OF ONE YEAR.
- CCS Inc. WILL CHARGE A REPAIR FEE UNDER THE FOLLOWING CONDITIONS:
 - IF THE PRODUCT HAS BEEN SUBJECTED TO MISUSE, UNAUTHORIZED REPAIRS, OR MODIFICATION FROM ITS ORIGINAL DESIGN.
 - IF THE PRODUCT HAS BEEN DAMAGED FROM IMPACTS DUE TO INAPPROPRIATE HANDLING.
 - 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.
 - 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.
- CCS ASSUMES NO LIABILITY FOR ANY PURCHASER'S SECONDARY DAMAGE (DAMAGE OF EQUIPMENT, LOSS OF OPPORTUNITIES, LOSS OF PROFITS, ETC.) OR ANY OTHER DAMAGE RESULTING FROM A FAILURE OF OUR PRODUCT.

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.

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.

- Contents of this Instruction Guide may be changed without prior notice.
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- Instruction Guide and Dimensional Diagrams in PDF or CAD can be downloaded from the CCS website. <http://www.ccs-grp.com>

Ask any product queries to the following address or to your nearest CCS representative.

CCS CCS Inc.

Headquarters Shimodachiuri-agaru, Karasuma-dori, Kamigyo-ku, Kyoto 602-8011 Japan

Phone : +81-75-415-8284 Fax : +81-75-415-8278 E-mail : intlsales@ccs-inc.co.jp

Use our website to find your nearest CCS representative. <http://www.ccs-grp.com/mvad>