

Bar Lights

LED Light for Machine Vision and Industrial Inspection

LDL2-19X4RD2/SW2/BL2
LDL2-33X8RD2/SW2/BL2
Instruction Guide



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 -

These products have been designed with full consideration of safety. However, incorrect usage of the products 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	MANDATORY ACTIONS
These symbols indicate prohibited actions.				This symbol indicates required actions.

		Warning
Do not disassemble or modify the product. Doing so may result in fire or electric shock.		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.
Do not touch the product with wet hands. Doing so may result in electric shock.		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.
Make sure that the product is free of moisture or any liquid. Exposure to water may result in fire or electric shock.		Connect or disconnect the light cable only after turning off the Control Unit for the LED Light. Failure to do so may result in circuit damage, fire caused by a minute spark, or electric shock.
If abnormal condition occurs such as fuming, heat, smell, noise, or so on, stop using the product immediately, turn the power off, and unplug the power cord. A fire or electric shock may result if the product is kept used.		

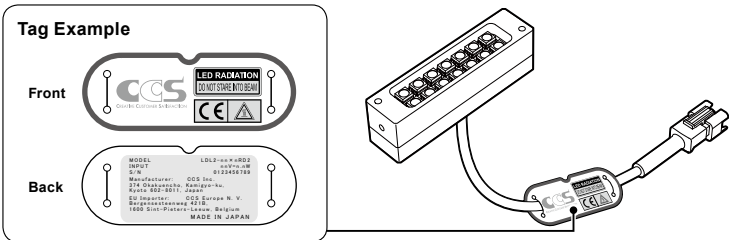
		Caution
Do not use user-made cables. Doing so may cause product failure. Use the CCS extension cable if it is necessary to extend the distance between the Light Unit and the Control Unit.		Use a Control Unit that is suitable for the product ratings. Using an incorrect Control Unit can cause product failure.
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.		Use a standard Extension Cable that is manufactured by CCS. However, if the cable is too long, the light intensity will decrease due to voltage drop caused by the DC resistance of the cable.
Do not drop the product or subject it to impact. Doing so may cause the product to malfunction.		

- 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 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.

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.

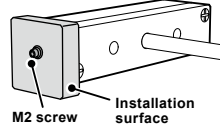


3 Installation

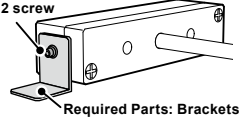
Side Installation

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

Direct Installation



Installation with Brackets

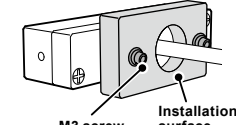


* Recommended tightening torque: 0.09 N·m

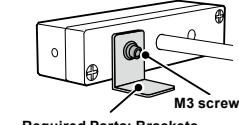
Rear Installation

Required Parts
Use M3 screws that are 4 mm longer than the thickness of the installation surface.

Direct Installation



Installation with Brackets



* Recommended tightening torque: 0.4 N·m

Caution Do not pull the cable or apply excessive force to the cable where it connects to the Light Unit. It may cause product failure.

4 Operating Instructions

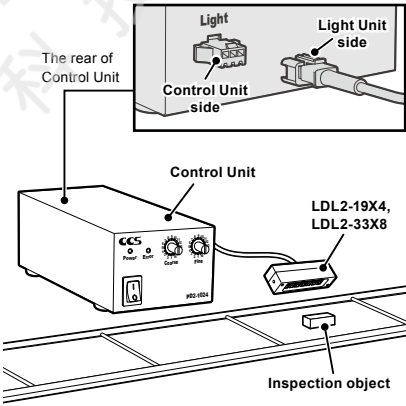
- 1 Connect the light cable of the Light Unit to the Control Unit output connector.

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

- 2 Turn ON the Control Unit to turn ON the Light Unit.

- 3 Adjust light range, light angle, and radiant quantity to optimize images. Adjust the radiant quantity at the Control Unit.

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 Control Unit before use.

5 Optional Products (Sold Separately)

The following optional products are available for the Light Units. Obtain the required product.

- 1 Diffusion Plate DF-LDL2-19X4, DF-LDL2-33X8**
Diffuses direct light. This enables uniform lighting of inspection objects.
- 2 Polarizing Plate PL-LDL2-19X4, PL-LDL2-33X8**
Light is lineally polarized. Prevent light reflection by using the polarizing plate together with the polarizing filter (PL Series) mounted to the lens.
- 3 Bracket BK-LDQ2-33X8**
This bracket can be used to mount four Bar Lights. The lighting angle is adjustable.
Note: CCS provides a bracket for the LDL2-19X4 Series (BK-LDQ2-19X4) as a custom product. Please contact your CCS sales representative for details.

6 Main Specifications

Common Specifications

Input voltage	24 VDC
Peak wavelength / correlated color temperature (typ.)	Red: 634 nm, White: 7800 K, Blue: 467 nm
Connector	SMR-03V-B
Polarity, signal	1: (+), 2: NC, 3: (-)
Cable length	300 mm
Cooling method	Natural air-cooling
Operating environment (indoors only)	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)
CE marking	Safety standard: Conforms to EN 62471
Case material	Aluminum alloy, Resin
Accessories	Instruction guide x1

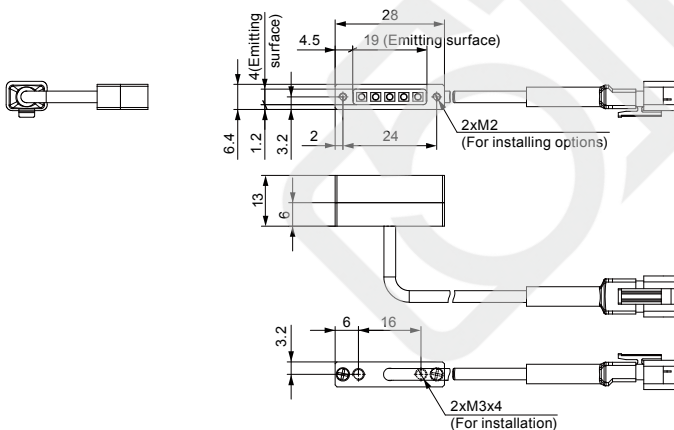
Specifications by Model

Model name	LED color	Power consumption (max.)	Weight (max.)	Optional products*		
				DF-LDL2	PL-LDL2	BK-LDQ2
LDL2-19X4RD2	Red	1.3 W	12 g	S		C
LDL2-19X4SW2	White	1.3 W				
LDL2-19X4BL2	Blue	1.1 W				
LDL2-33X8RD2	Red	2.6 W	20 g	S		
LDL2-33X8SW2	White	2.1 W				
LDL2-33X8BL2	Blue	1.5 W				

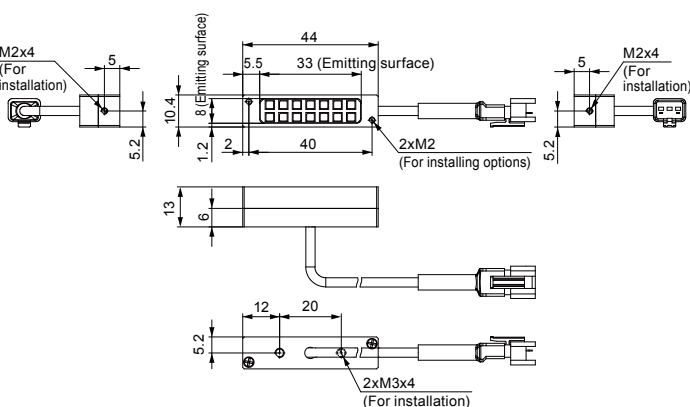
* S: CCS provides the product as a standard product. Refer to *LDL2 series Operation Guide for Optional Products* for details.
C: CCS provides the product as a custom product. Please contact your CCS sales representative for details.

7 Dimensions (mm)

LDL2-19X4RD2/SW2/BL2



LDL2-33X8RD2/SW2/BL2



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