

HLDR-IP-UV3 / HLDR-IP-VL3 Series 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 Introduction

These products are LED Light Units used for machine vision and industrial inspections.

When connected to a Dedicated Cable, the product has a protective structure of IP67 to prevent dust and water intrusion so that you can apply the product to wider range of environments than previous products. However, you cannot use the product in water continuously.

2 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	These symbols indicate prohibited actions.		MANDATORY ACTIONS	This symbol indicates required actions.
	DISASSEMBLY PROHIBITED				
	DO NOT TOUCH WITH WET HANDS				

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 immerse the product in water continuously. Water intrusion may result in fire or electric shock.	
Do not connect or disconnect the Light Unit cable with wet hands. Do not connect or disconnect the Light Unit cable when the product is wet. 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.
Connect or disconnect the light cable only after turning off the control unit. 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, and turn off the power source. A fire or electric shock may result if the product is kept used.
Keep the naked skin away from the radiating surface of the light while it is turned on. Failure to do so may cause an inflammation of the skin.	Turn off the power supply when installing, unmounting or cleaning the product. Failure to do so may cause a pain in your eye, impaired eyesight or electric shock.

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 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 the DC resistance of the cable.
Do not drop the product or subject it to impact. Doing so may cause the product to malfunction.	

2 Important Information for Equipment Safety (Continued)

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 free from corrosive or combustible gas.
- Places with sufficient airflow to cool the product.
- Places that are not subject to sudden temperature changes.
- Places free from oil, liquid, or chemicals that would affect the materials of the product.

Note: For places where the product would be exposed to liquids other than water or to gas, determine the installation according to the materials of the product. For details, refer to 6. *Dedicated Cable (Sold Separately)* and 7. *Main Specifications* and consult CCS.

3 Confirming Product Information

The following label is attached to the LED light. The color of the label indicates the luminescence color of the product. The name label specifies the model name, 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.

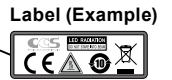
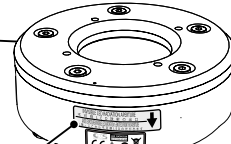
Name Label (Example)

MODEL HLDR-IP01-100UV3-xxx
INPUT xxV/xxW
S/N 012345-012345
CCS Inc. MADE IN JAPAN

Radiation Aperture Seal (only for HLDR-IP-UV3 series) (Example)

INVISIBLE LED RADIATION APERTURE
不可視LED放射の出口
LED RADIATION APERTURE SEAL FROM THE APERTURE
LED放射口の放射防止シール

The LED Light is provided with a Radiation aperture seal of LED light. In any case, do not turn ON the LED with the aperture for LED emission pointing upward.



4 Installation

Required Articles

- M4 screws** (Commercially available)
Use M4 screws that are 5 mm longer than the thickness of the mounting surface.
- Dedicated cable** (Sold separately)

Caution Handle the M12 connector on the product and the Dedicated Cable with care. If the connector is deformed or damaged or if the O-ring (packing) falls out of the Dedicated Cable, electric shock or product failure may occur due to water intrusion during usage.

- Adjust the position of the notch, and then insert the M12 connector of the dedicated cable straightforwardly.
- Screw on the cap to secure the connector.
- Fix the product to the place with M4 screws.

Cap

Insert the socket all the way into the connector.

Tighten the cap all the way to the end (torque: 0.39 to 0.49 N·m).

Caution Correctly connect the Dedicated Cable to the product. Not doing so may result in electric shock or product failure due to water intrusion.

5 Operating Instructions

Caution To avoid direct exposure to ultraviolet radiation, all workers around the product must use protective equipment. Also, make known to all personnel concerned the risk of ultraviolet radiation.

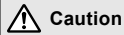
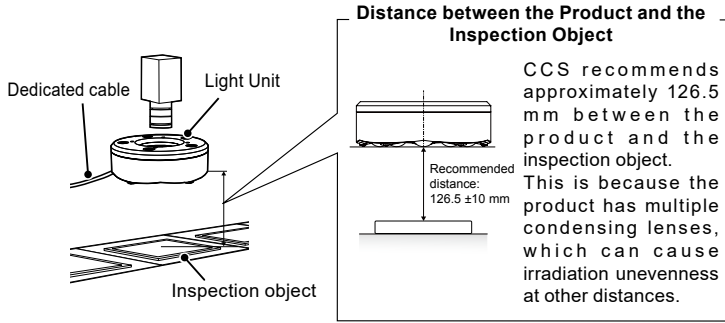
1 Make sure that the Control Unit for the LED Light is turned off.

Read the Instruction Guide of the Control Unit for the LED Light before use.

2 Connect the dedicated cable of the product to the Control Unit output connector.

3 Turn on the Control Unit for the LED light.

Refer to the following illustration to adjust the distance between the product and the inspection object to optimize images.



Caution

- Handle the lenses of the product with care. Flaws, waterdrops, or dirt on the lenses may affect irradiation and imaging.
- Do not place the product on the flat surface with the lenses facing downward. Doing so may scratch the lenses.
- When the product is disconnected from the connector and is not used for a long period, prevent water intrusion by covering the connector or by other means. Not doing so may result in electric shock or product failure due to water intrusion.

6 Dedicated Cable (Sold Separately)

Select a cable of required length.

Model name	FCB-1-M12	FCB-2-M12	FCB-3-M12	FCB-5-M12
Cable length	1 m	2 m	3 m	5 m
Weight (max.)	70 g	125 g	180 g	305 g
Outer diameter	Ø6 mm			
Connector ^{*1}	Light Unit end: XS2F-D421 (Manufactured by OMRON) Control Unit end: SMR-03V-B (Manufactured by JST)			
Case material ^{*2}	Connector on Light Unit end: Soft PBT Cable: PVC Connector on Control Unit end: Nylon			

*1 The connector on the Control Unit end is not waterproof.

*2 These are only the materials on the exterior of the product.

7 Main Specifications

Common Specifications

Input voltage	24 VDC
Connector	XS2M-D423 (Manufactured by OMRON)
Polarity	1:(24+), 2:NC, 3:GND(-), 4:NC
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 EN62471
Protective structure	IP67 ^{*1} (JIS C 0920)
Case material ^{*2}	Case body: Aluminum alloy (black alumite) Screws: SUS Washers: SUS, elastomer (TPE) Connector: PA resin Lenses: Silicone
Weight (max.)	420 g
Accessories	Instruction Guide x1, Radiation aperture seal ^{*3} x1, UV DANGER seal ^{*3} x1

*1 IP67 is the protection classification of an electric device against intrusion of foreign objects.

The first digit, 6, indicates the following protection level.

Dust protected: Totally protected against dust.

The second digit, 7, indicates the following protection level.

Immersion protected: Protected against short periods of immersion in water under defined conditions of pressure and time.

If the height of the device is less than 850 mm, immersion at a depth of 1 m is allowed for a duration of 30 minutes.

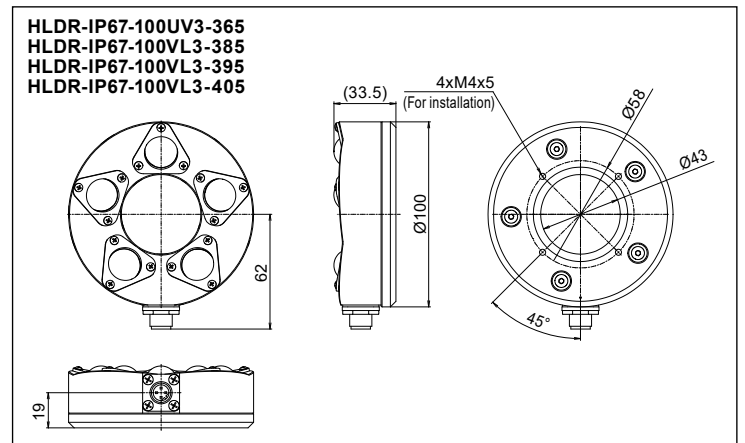
*2 These are only the materials on the exterior of the product.

*3 These seals are included only with HLDL-IP-UV3 series. If you set the product into other machinery, put the seals on them for warning notice.

Specifications by Model

Model name	Peak wavelength (typ.)	Power consumption (max.)
HLDL-IP67-100UV3-365	365 nm	18 W
HLDL-IP67-100VL3-385	385 nm	
HLDL-IP67-100VL3-395	395 nm	
HLDL-IP67-100VL3-405	405 nm	

8 Dimensions (mm)



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