



LFV-G-PF 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 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 Light Unit. 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 Light Unit with wet hands. Doing so may result in electric shock. 	To use the Light Unit, connect it to a High Power Strobe Control Unit from CCS. Using any power supply other than a High Power Strobe Control Unit may result in fire or Light Unit failure. 
Make sure that the Light Unit 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 High Power Strobe Control Unit. Failure to do so may result in circuit damage, fire caused by a minute spark, or electric shock. 
These Light Units generate high temperatures. Do not touch the Light Unit 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 Light Unit is to be used in a closed space. 	If abnormal condition occurs such as fuming, heat, smell, noise, or so on, stop using the Light Unit immediately, turn OFF the Control Unit and unplug the power cord. A fire or electric shock may result if the Light Unit is kept used. 

 Caution	
Do not use user-made cables. Doing so may cause Light Unit failure. Use the CCS extension cable if it is necessary to extend the distance between the Light Unit and the Control Unit. 	Do not drop the Light Unit or subject it to impact. Doing so may cause the Light Unit to malfunction. 
Be careful of static electricity. Damage to the LED light may occur, if a person charged with static electricity touches it. Keep the Light Unit away from all items charged with static electricity. 	Use the High Power Strobe Extension Cables (5 m or shorter). 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 use the Light Unit 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 Light Unit to locations with following conditions.

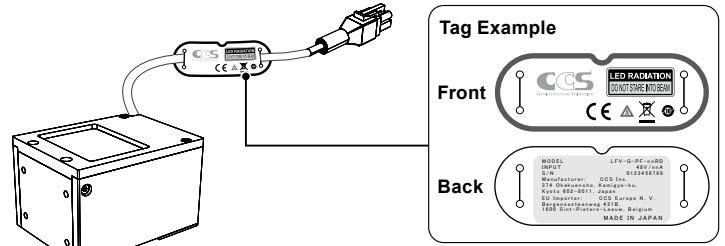
Incorrect installation location may cause Light Unit failure.

- 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.

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, peak current, 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.

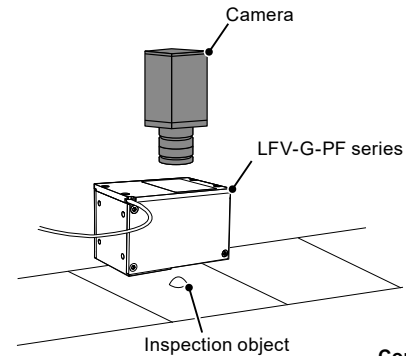


3 Operating Instructions


 Make sure that the High Power Strobe Control Unit is turned OFF before you connect the Light Unit.

- 1 Connect the light cable to a High Power Strobe Control Unit.
 - Connect the light cable to a High Power Strobe Control Unit. The High Power Strobe Control Unit must be equipped with **ELR-04NV** connectors for power output.
 - Insert the plug all the way into the connector.
 - High Power Strobe Extension Cables are available for the Light Units (FCB-PF Series, sold separately).

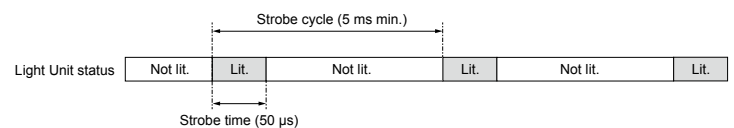
For information on High Power Strobe Control Unit and Extension Cables, refer to the instruction guide for the High Power Strobe Control Unit.
- 2 Turn ON the High Power Strobe Control Unit, and then turn ON the Light Unit.
- 3 Adjust the Light Unit position and radiant quantity to optimize images.



- Conceptual Diagram -

 Use the Light Unit within the lighting conditions (maximum strobe time and maximum duty cycle*). Exceeding the lighting conditions, such as performing continuous lighting using a power supply other than a High Power Strobe Control Unit, may result in fire or Light Unit failure. For the lighting conditions, refer to 5. Main Specifications.

* The duty cycle is the strobe operation ratio expressed by the following equation:
 Duty cycle (%) = 100 X Strobe time/Strobe cycle
 For example, if you want to restrict the duty cycle to 1% or less when the strobe time is 50 μs, you must make the Light Unit flash with a cycle of 5 ms or longer.



3 Operating Instructions (Continued)

Precautions

- Ghost images (double vision) of the inspection object may appear due to reflection from the half mirror inside the light. It is impossible to remove these images because of the characteristics of the light.
- Dust, dirt, or fingerprints on the glass portions of the light may affect the captured image. In that case, clean the light as follows:
 - Remove dust and dirt by blowing it off with air. Do not touch the light with your hand.
 - Use a soft, finely woven cloth to wipe away any marks, such as fingerprints.
 - Use a soft, finely woven cloth soaked with diluted neutral detergent to remove any heavy dirt.

Also, handle the light with care during daily use. Make sure no dust, dirt, or fingerprints adhere to the light.

4 Optional Accessories (Sold Separately)

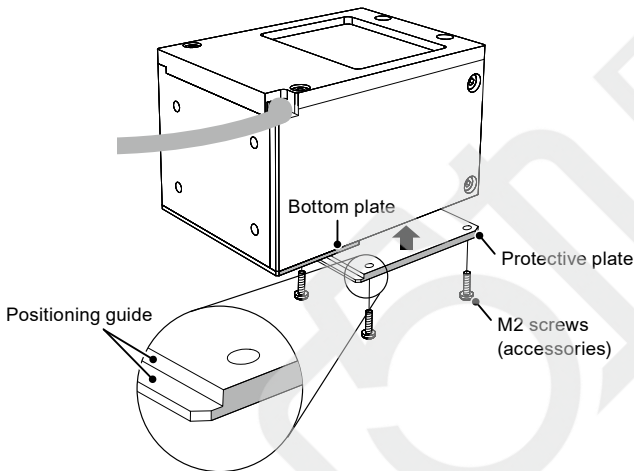
The following optional products are available as required.

Protective Plates

Protects the half mirror part of the Light Unit. It is not available to use this product for protection use from any damages caused by dust, water, and etc.

Model name	Applicable Light Unit	Accessories
PR-LFV3-35	LFV-G-PF-35 series	M2 x 4 mm screws x 5 pcs.

Align the surfaces of the positioning guide with the edge of the bottom plate.



5 Main Specifications

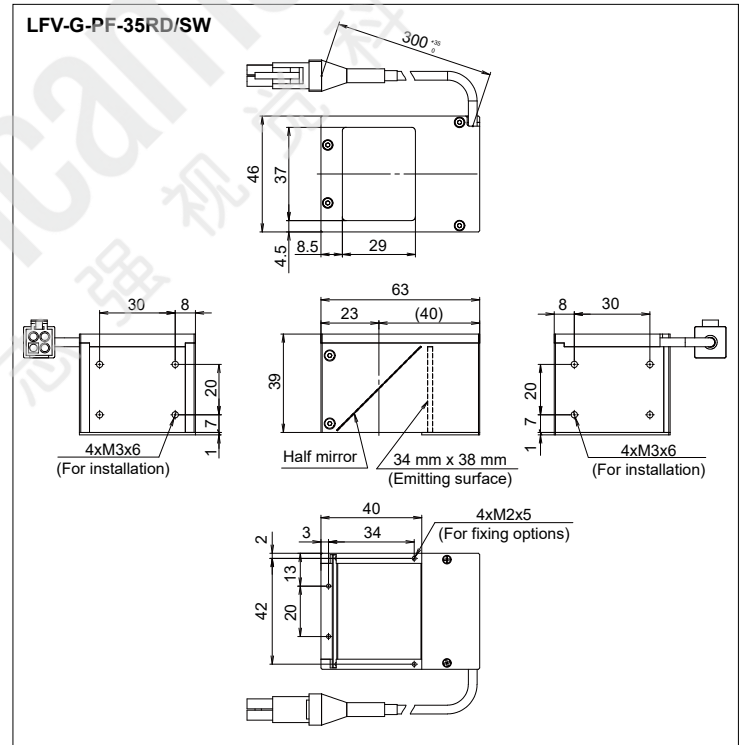
Common Specifications

Input voltage	48 VDC max.
Lighting conditions	Maximum strobe time: 500 μs, Maximum duty cycle: 1%
Connector	ELP-04NV
Polarity, signal	1: (+), 2: NC, 3: (-), 4: NC
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 62471-1
Case material	Aluminum alloy, resin
Accessories	Instruction guide

Specifications by Model

Model name	LED color	Peak wavelength / correlated color temp. (typ.)	Peak current	Weight (max.)
LFV-G-PF-35RD	Red	623 nm	8.0 A	150 g
LFV-G-PF-35SW	White	4800 K		

6 Dimensions (mm)



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