

LED Signal Light

Model LFH / LFH-S

INSTRUCTION MANUAL

Installation Operation Maintenance

[Maintenance Version]

Notice to Customer

- Thank you very much for purchasing our PATLITE product.
- Request the installation and wiring be performed by a professional contractor if construction work is involved.
- Prior to installation, read this manual thoroughly before using this product to ensure correct use.
- After reviewing this manual, if there are any questions regarding this product, please contact the nearest PATLITE office listed on the back cover of this manual.









Notice to Contractor

- Read this manual carefully prior to installation.
- Be sure to return this manual to the customer.

1 Safety Precautions

Safety Precautions

WARNING Failure to observe the following may result in death or serious injury.

	To prevent from short-circuits, electric shock, burns or damage, observe the following: • Be sure the power is disconnected before replacement or repair. • Please use this product in a properly maintained condition. (If parts such as the Body or Globe are damaged, they should be repaired.)		Do not apply excessive torque or strong shock to this product. Failure to comply will result in product damage.
	To ensure proper safety while using this product, observe the following: • Perform periodic pre-maintenance. (→ "5 Inspection") • As a precaution against problems occurring, use this product together with other equipment.		Do not, by any means, disassemble or modify this product. (This product contains high voltage, which is very dangerous.)
	Properly secure this product to prevent from falling, particularly from high places. Failure to comply may result in death, serious injury, or product damage.		To ensure safety when this product is installed onto equipment, observe the following: • Do not use this product as leverage when climbing up onto the equipment. Failure to comply will result in falling from a high place, or damage to the product. • When performing tasks such as opening covers on the equipment, be careful not to snag anything on this product. Failure to comply will result in product damage.
	Install an external fuse between the power supply and product to protect the internal circuitry. (→ "5 Installation and Wiring")		Do not look directly into the light source during operation of this product. The excessive brightness may impair vision.

CAUTION Failure to comply with the following points may result in injury, physical loss or damage.

Install an external fuse between the power supply and product to protect the internal circuitry. (→ "5 Installation and Wiring")

Application

This product is useful for warning indications by flashing, and can be used on equipment, in factories and other applications.

Instruction Manual Objective

- The images in this manual may vary in comparison to the actual product and are only for the purpose of illustration.
- Store this manual in a location for future reference.

2 Model Number Configuration

Model (1)	Rated Voltage	Model (2)	Color
Model No. LFH-			

Model Number Example
LFH-12S-R
• Model ... LFH-S • Rated Voltage ... 12 V DC • Color ... Red

The luminescence color is indicated.※2
R Red Y Amber G Green B Blue C White

※1 The Dimming function is included for the 12/24/48 models.
※2 Due to LED and Globe color compatibility, changing the Globe cannot be done without the LED Unit being changed as well.

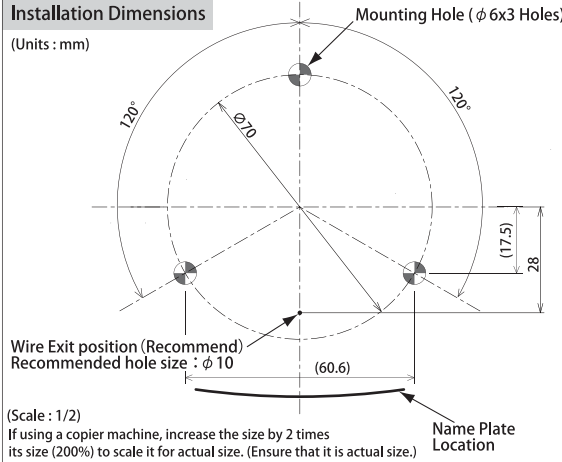
How to Install

The following is the procedure for installing this product.

- Before mounting the product, drill holes into the mounting surface in accordance to the dimensional drawing.
- Insert the Power Supply Wire into the wire hole before inserting the body into the mounting hole.
- Fasten with the (M5) nuts included and tighten. (Recommended Bolt Torque 1.4 N-m)
- Properly wire to the power supply. Refer to "Wiring Example"

Point
• Prior to drilling, the work will become easier if marking the holes with a punch, etc., is done first.

Installation Dimensions (Units : mm)



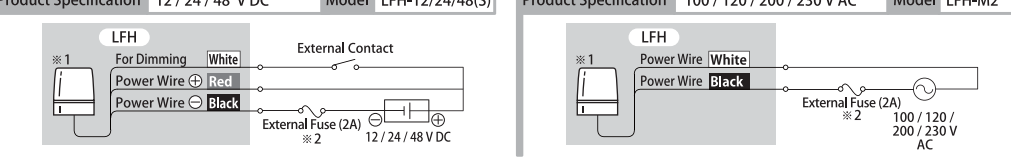
Mounting Hole (φ 6x3 Holes)
Wire Exit position (Recommend) Recommended hole size : φ 10
Name Plate Location

(Scale : 1/2)
If using a copier machine, increase the size by 2 times its size (200%) to scale it for actual size. (Ensure that it is actual size.)

Wiring Example

The wiring example is indicated for every model. If there are any special applications that require asking questions concerning this product, feel free to contact your PATLITE Sales Representative.

Product Specification	12 / 24 / 48 V DC	Model	LFH-12/24/48(S)
Product Specification	100 / 120 / 200 / 230 V AC	Model	LFH-M2



※1 A 2A fuse is built-inside the product. ※2 Use an external fuse with the recommended rating for the product being used.

6 Inspection

For safety measures, perform the following inspection.

Inspection Checklist	Inspection Repair
Is the LED flashing?	Refer to the "7 Troubleshooting" section if it does not flash.
From observation of the appearance, is there any damage?	If any damage has been found, immediately request for repair.
Is the mounting nut loose?	If the nut is loose, tighten it with the recommended torque. (Refer to "5 Installation and Wiring")

7 Troubleshooting

If a problem occurs, check the following table to remedy the problem before calling for service.

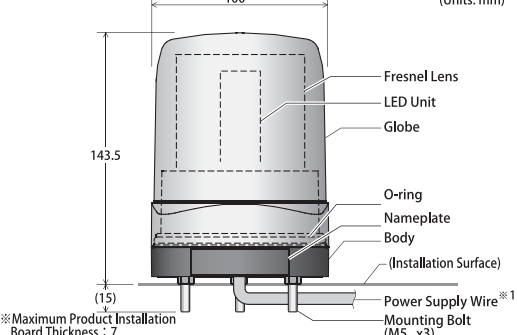
No.	Problem	Where to Check	Inspection Repair
1	The LED does not flash.	Is the electric wiring connected correctly? Is the power properly supplying the correct voltage? Has the external fuse blown-out?	Refer to "5 Installation and Wiring" to verify wiring is correct. Be sure to use this product at its rated voltage. Verify the external fuse has not been burned-out.
2	Even when connected to the Dimming circuit, luminous intensity does not change. (For 12/24/48 Types)	Is the electric wiring connected correctly?	Refer to "5 Installation and Wiring" to verify wiring is correct.

Even if the problem is not corrected after the above remedies have been performed, use the table below to make detailed notes of the product, its problem, and then contact either the place of purchase or your nearest PATLITE Sales Representative.

- Purchased Product Distributor
- PATLITE Sales Representative (Refer to the back cover of this manual.)

Product Details			
Product Name	Product Model Number	Purchase Date	
Model	(→ "2 Model Number Configuration")	Symptoms of Problem	With as much detail as possible.

3 Part Names and Outer Appearance



(Units: mm)
100, 143.5, 15

Parts: Fresnel Lens, LED Unit, Globe, O-ring, Nameplate, Body, (Installation Surface), Power Supply Wire, Mounting Bolt (M5 x3)

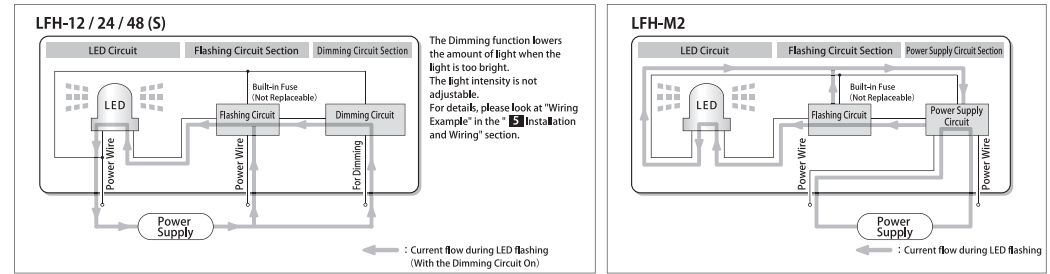
Accessories:
Nut (M5) x3, Spring Washer x3, Washer x3

※1 Power Supply Wire Specification
12/24/48(S)
Wire Length : 300
Cord Diameter : Approx φ6
Red, Black, White
M2
Wire Length : 300
Cord Diameter : Approx φ9
White, Black

※ Maximum Product Installation Board Thickness : 7

4 Block Diagram

The following illustrates the internal block diagram for the Signal Light. Use it as reference when wiring. (The diagram is only an example.)



5 Installation and Wiring

WARNING

Be sure the power is disconnected before replacement or repair.

Ensure the proper working voltage is used and that direct current or alternating current is properly applied.

CAUTION

The following requirements are necessary for proper installation.
• Install where excessive vibration is not present.
• Install on a strong surface.
• Install on a level surface.

Use a soft cloth, etc., dampened with water to wipe the main Signal Light unit. (Do not use cleaners containing chemicals such as thinner, alcohol, gasoline or oil.)
• Thinner
• Alcohol
• Gasoline
• Oil

Install in an upright position and on a flat surface when placed in a wet environment. Failure to comply will result in waterproofing performance. (Protection Rating: IP66)

Install an external fuse between the power supply and product to protect the internal circuitry. (Refer to "Wiring Example")

Use an external fuse with the recommended rating for the product being used. (A 2A fuse is built-inside the product.) (Refer to "Wiring Example")

Do not remove the Globe for any reason. Failure to comply may result in electric shock.

Do not pull the power cord or push it inside the body.

8 Specifications

Model	UL Registration Number	Rated Voltage	Voltage Range	Mounting Location	Protection Rating	Maximum Operating Ambient Temperature	Current Consumption (Max.)	Flash Rate	Mass
LFH-12	LFH-12	12 V DC	9.5~15 V DC	Indoor or Outdoor Use	IP66	70°C	0.50A	110 ± 10 rpm (Triple-flash)	0.57kg
LFH-24	LFH-24	24 V DC	20~30 V DC				0.23A		
LFH-48	LFH-48	48 V DC	35~60 V DC				0.18A		
LFH-M2	LFH-M2	100 / 120 / 200 / 230 V AC	90~250 V AC				0.12A		

- This product conforms to EN standard and shows the CE Marking. (Except for 48VDC type.) This product has been tested and found to comply with the limits for a Class A device, pursuant to EMC DIRECTIVE. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This product must not be used in residential areas.
- This product conforms to FCC rules. (Except for 48VDC type.) This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
- This product is recognized as a UL standard. (UL1638, FILE No.S24210)
※ For recognized as a UL standard.
This product is to be mounted to a Listed UL 508 Enclosure. (12VDC, 24VDC, 48VDC type)

Model LFH-S

Model	Rated Voltage	Voltage Range	Mounting Location	Protection Rating	Maximum Operating Ambient Temperature	Current Consumption (Max.)	Flash Rate	Mass
LFH-12S	12 V DC	9.5~15 V DC	Indoor or Outdoor Use	IP66	70°C	0.50A	140 ± 14 rpm (Triple-flash)	0.57kg
LFH-24S	24 V DC	20~30 V DC				0.23A		
LFH-48S	48 V DC	35~60 V DC				0.18A		

PATLITE Corporation

PATLITE Corporation ※Head office <http://www.patlite.com/>
4-1-3, Kyutaromachi, Chuo-ku, Osaka 541-0056 Japan

PATLITE (U.S.A.) Corporation <http://www.patlite.com/>
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※Note> Specifications may change without notice due to continual product improvement.
• Responsibility will not be taken if failure or damage, etc., is caused by handling in contrary to the warnings and notes written in this operation manual.