

INSTRUCTION SHEET

LF1A LED Illumination Unit LF1A Series

Confirm that the delivered product is what you have ordered. Read this instruction sheet to make sure of correct operation. Make sure that the instruction sheet is kept by the end user. The warranty of this product is 1 year after the product is delivered to the designated places.

Attention ●Read this instruction manual before using the product and use it in a proper way.

- The life of illumination units is limited.
- Have an inspection on or replace the product. There is some deterioration inside illumination units after 8 to 10 year use even if their appearance has no damage.
 - *ambient temperature: 25°C operation hours: 3,000 hours per year, 10 hours per day
 - Accordance with IEC 60598-1
- High ambient temperature and long operation hours shorten illumination units' life.
- We recommend users have some inspection on and clean the product every 6 months.
- Have an inspection by experts such as electric constructors every 3 years.
- If the product is used for long time with no inspection, a fume, ignition and electric shock might happen.

Safety Precautions

In this operation instruction sheet, safety precautions are categorized in order of importance to Warning and Caution :

WARNING

Warning notices are used to emphasize that improper operation may cause severe personal injury or death.

CAUTION

Caution notices are used where inattention might cause personal injury or damage to equipment.

WARNING

- Confirm that the usage conditions are not different from this instruction sheet.
- Before designing the final equipment and powering up the LF1A illumination unit, confirm the specifications described on this sheet. If there is any uncertainty in the description, contact IDEC before powering up the LF1A illumination unit.
- Do not disassemble, repair, or modify the LF1A illumination unit, otherwise severe accidents may result, such as electric shocks, damage, fire, or malfunction.
- The LF1A illumination unit is an apparatus for exclusive use of the indoor.
 - Do not use it outdoors. It may cause insulation failure, electric shock or malfunction.
- Turn off the power to the LF1A illumination unit before wiring, installation and cleaning.
 - Install the product accurately following the instruction manual when installing the product. Incomplete installation can cause falling, fires, and electric shocks. Also, make sure that wiring is done correctly otherwise electric shocks and malfunctions can occur.
- Do not gaze into the LF1A illumination unit while it is lit, and do not project the light to other people, otherwise eyes may be injured.
- Attach to the place that can withstand the weight of the product.
- Do not pull out or push in the cable of the LF1A illumination unit, otherwise damage may result. Give a slack to the cable while wiring.
- The LF1A illumination unit is a general-purpose and industrial electronic device.
- Do not use the LF1A illumination unit for electronic equipment which may damage a human body or threaten a life in case a malfunction or failure occurs.
- Give waterproofing and dustproofing to the cables and wires of the LF1A illumination unit when using the LF1A illumination unit at the places that have water and dust.
 - Inadequate processing can cause a leak, electric shock, and failure.
- Please be careful not to touch cables with products.

CAUTION

- Apply a voltage within the rated value, otherwise the LED elements may be damaged.
 - The LF1A illumination unit is vulnerable to static electricity. Take a sufficient measure for protection against static electricity and surge voltages.
- Do not apply an excessive force to the LF1A illumination unit. Do not leave a damaged LF1A illumination unit unattended or use a damaged the LF1A illumination unit.
- Make sure of the correct operating temperature, which is the temperature around the LF1A illumination unit. Otherwise internal temperature rise may result in damage.
- Do not use or store the LF1A illumination unit in a place subjected to vibrations and shocks.
- Do not use the LF1A illumination unit in the following places:
 - The places having lots of dust. (The ones beyond the limits of corresponding IP40, degree of protection, accordance with IEC 60529.)
 - Subjected to substances that can cause failure, such as corrosive gas, volatile gas, inflammable gas, and chemicals.

Electric fields and magnetic fields.

The places having inflammable substances.

Exposed to direct sunlight, near heaters, and at high temperatures.

The places that the LF1A illumination unit can get splashed with salty water.

Take some measures to prevent freezing and condensation when using the LF1A illumination unit in freezers and wind outlets.

Subjected to ozone, radiation, and ultraviolet rays.

- Do not loosen screws, otherwise the protection characteristics will be impaired.
- Work with caution while turning on and off (within 30minutes), the LF1D-C illumination unit is hot.
- To clean the cover, use a soft cloth with water or neutral detergent. Leaving the LF1A illumination unit with dirt can make the life expectancy shorten.
- Do not use solvents such as thinners, benzene, or alkaline, otherwise discoloration, deterioration, or decrease in strength may occur.
- The edge of the cable sheath is not waterproof construction. Water may invade the LF1A illumination unit in the capillary action when water splashes directly to the edge.
- When there is something wrong on the LF1A illumination unit, turn the power off immediately, and consult the distributor.
- Do not repeat turning on/off the LF1A illumination unit frequently. When turning on after turning off, wait at least 0.5s. Otherwise damage may result.

Operating Precautions

- LED modules and illumination units may vary in illumination colors and illuminance.

1 Type No.

Illumination Color	White	Incandescent Light Color	Yellow	Red
A1: 3 LEDs x 2 rows	LF1A-A1-2THWW6	LF1A-A1-2TLWW6	LF1A-A1-2SHY8	LF1A-A1-2SHR8
B1: 6 LEDs x 2 rows	LF1A-B1-2THWW6	LF1A-B1-2TLWW6	LF1A-B1-2SHY8	LF1A-B1-2SHR8
D1: 12 LEDs x 2 rows	LF1A-D1-2THWW6	LF1A-D1-2TLWW6	LF1A-D1-2SHY8	LF1A-D1-2SHR8

2 Specifications

• General Specifications

Type No.	LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Rated Voltage	24V DC (non-polarized)			
Input Current (at rated voltage)	3 LEDs x 2	75 mA typ. (91.7 mA max.)	90 mA typ. (108.3 mA max.)	
	6 LEDs x 2	150 mA typ. (183.3 mA max.)	180 mA typ. (216.7 mA max.)	
	12 LEDs x 2	300 mA typ. (362.5 mA max.)	360 mA typ. (437.5 mA max.)	
Rated Power (at rated voltage)	3 LEDs x 2	1.8 W typ. (2.2 W max.)	2.2 W typ. (2.6 W max.)	
	6 LEDs x 2	3.6 W typ. (4.4 W max.)	4.4 W typ. (5.2 W max.)	
	12 LEDs x 2	7.2 W typ. (8.7 W max.)	8.7 W typ. (10.5 W max.)	
Operating Temperature	-20 to +50°C (no freezing)			
Storage Temperature	-25 to +70°C (no freezing)			
Operating/Storage Humidity	45 to 85% RH (no condensation)			
Life of Light Source (half luminance) *1	40,000 hours (Ta= 25°C,45% RH)			
Insulation Resistance	Between live and dead parts: 100 MΩ (500V DC megger)			
Dielectric Strength	Between live and dead parts: 1000V AC, 1 minute			
Vibration Resistance (damage limits)	5 to 55 Hz, amplitude 0.5 mm, 20 m/s ²			
Shock Resistance (damage limits)	980 m/s ²			
Material	Housing : Al End Plate : SPCC Lens : PC Cable Grand : Brass Wire : PVC			
Weight (approx.)	LF1A-A1: 190g, LF1A-B1: 270g, LF1A-D1: 470g			
Degree of Protection *2	IP40			

*1: It is not a guaranteed value. LED life depends on the operating environment and conditions. We may change LED life without notice. Ta is the ambient temperature of this product.

*2: A degree of protection is guaranteed for conditions specified by IEC 60529 requirements and do not assure protection against all actual operating conditions.

• LED Optical Specifications

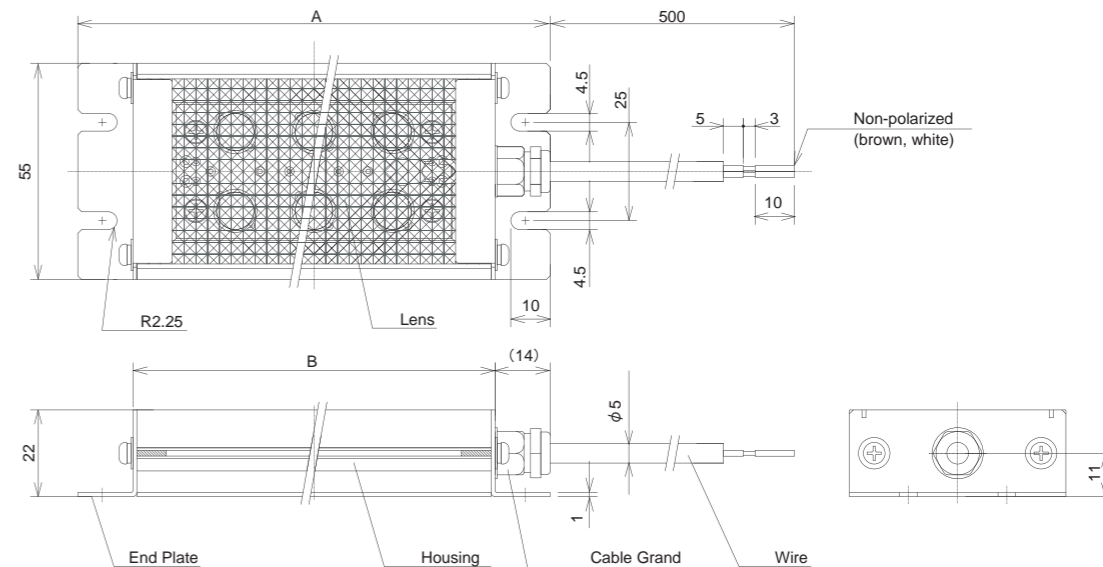
Type No.	LF1A-*-2THWW6	LF1A-*-2TLWW6	LF1A-*-2SHY8	LF1A-*-2SHR8
Illumination Color	White	Incandescent Light Color	Yellow	Red
Luminous Intensity (Single module)	typ. 6000 mcd	typ. 4000 mcd	typ. 4000 mcd	typ. 2500 mcd
Color Temperature/Dominant Wavelength	typ. 5500 K	typ. 2800 K	typ. 590 nm	typ. 625 nm
Reference	3 LEDs x 2	typ. 190 lx	typ. 130 lx	typ. 130 lx
Illuminance at 500 mm	6 LEDs x 2	typ. 380 lx	typ. 260 lx	typ. 260 lx
	12 LEDs x 2	typ. 760 lx	typ. 520 lx	typ. 520 lx

3 Dimensions

• Dimension List

Dimension	A	B	C
LF1A-A1-□	120 mm	92 mm	1080 mm
LF1A-B1-□	180 mm	152 mm	1680 mm
LF1A-D1-□	300 mm	2720 mm	288 mm

(Dimensions: mm)

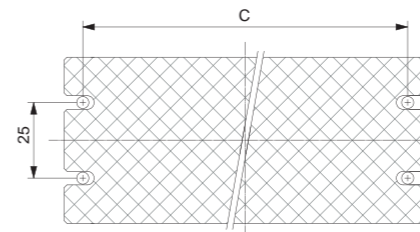


4 Installation

• Mounting Centers

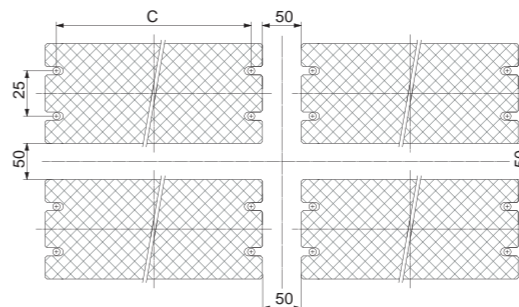
Mount the LF1A illumination unit using four M4 screws. Tighten the screws to the torque shown below. M4 screw: 1.3 to 1.7 N · m

(Dimensions: mm)



• Close Mounting

When mounting multiple LF1A illumination units closely, keep a minimum spacing of 50 mm between units as shown below.



• Installing a Protective Cover

When installing a protective cover for the LF1A illumination unit, make sure that the specification values are satisfied during operation.

• Wiring

The LF1A illumination unit is equipped with a cabtyre cable, RO-FLEX 1000T AWG22 x 2 cores (NICHIGOH). When wiring, use an appropriate connector, terminal, or wire to meet the specification values. When soldering the wires of the cable, use a 20W soldering iron, with a tip temperature of 350°C, and complete soldering within 3 seconds. Sn-Ag-Cu lead-free solder is recommended.

5 Precautions for Disposal

- Dispose of the LF1A illumination unit as an industrial waste.

IDEC CORPORATION

<https://www.idec.com>

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