

Think Automation and beyond...



# LF1D

## LUMIFA™

LED Illumination Units (water, dust, and oil-proof)

Also available with  
or without cable  
gland, mounting  
bracket, &  
cable.

Shown with cable gland,  
mounting bracket, &  
cable.

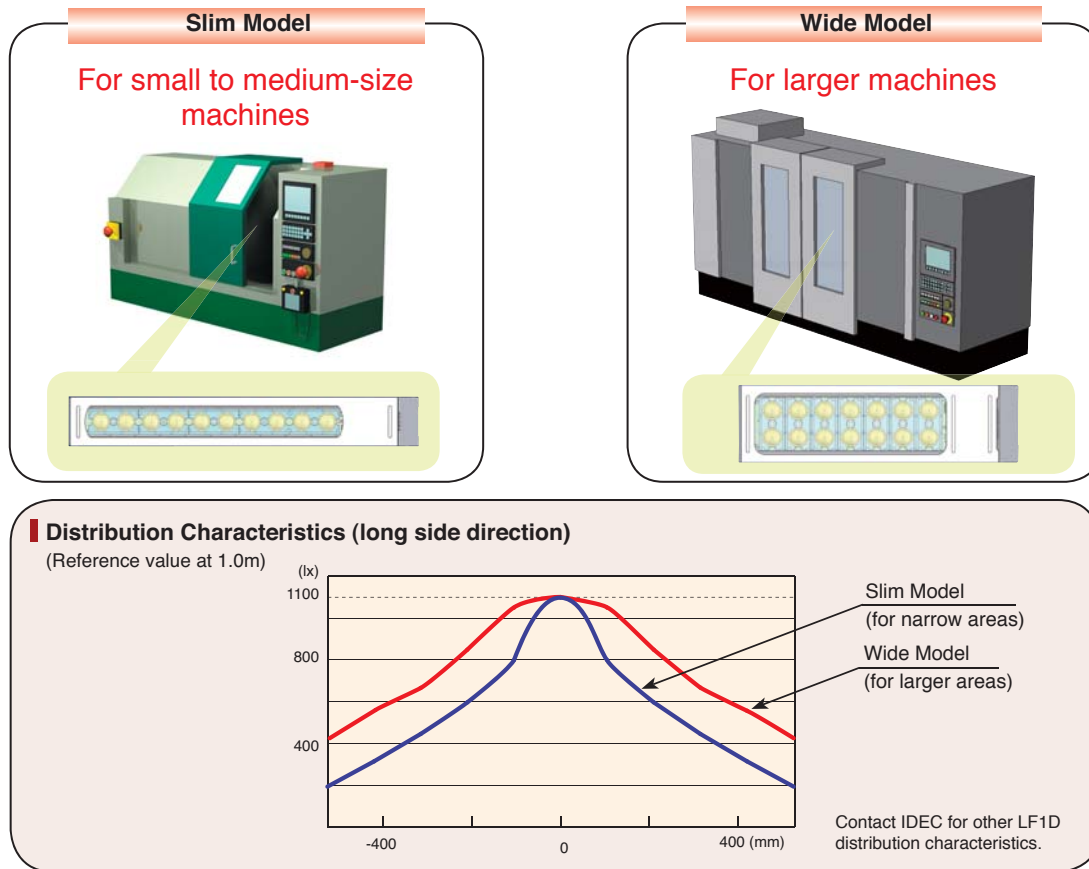
Slim Model

Wide Model

- Brightness:
  - Slim: 66.6 Lumens/Watt
  - Wide: 67.2 Lumens/Watt
- Life: 70% of initial luminance at 50,000 Hrs
- IP67 (polycarbonate lens) or IP67f (reinforced glass lens)
- UL Pending
- RoHS Compliant

IDEC CORPORATION

## Excellent light distribution by combining different light-dispersing lenses



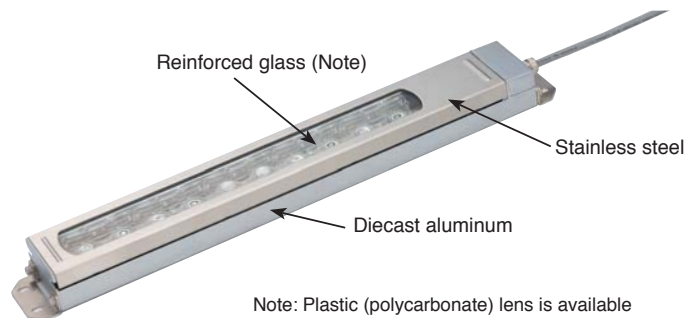
## Durable and resistant to harsh environments

### High durability

Constructed of diecast aluminum (base), stainless steel (front), and reinforced glass. Unit is resistant to flying debris.

### Degree of protection IP67f

Waterproof, dust-proof, oil-proof. Can be used in environments subject to water, dust, and oil.



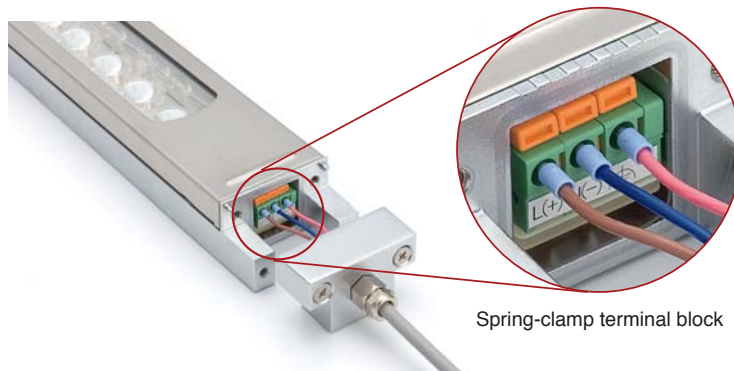
## Easy maintenance

### Spring-clamp terminal blocks

Removable direct plug-in terminal block and spring clamp connector ensures a high quality connection, making it easy to install or replace the LED illumination unit.

### Flexible mounting

The LED illumination unit can be mounted using mounting holes on the back or ends of its housing.



## Part Numbers

| Style                                                                                                       | Cable Connection                                                                                           | Pre-installed Cable gland, Mounting Bracket, 5m Cable | Rating | Part Number     |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|--------|-----------------|
| Slim LED array: 10 x 1<br> | Side                      | No                                                    | IP67f  | LF1D-E2F-2W     |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-E3G-2W     |
|                                                                                                             | Back                      | No                                                    | IP67f  | LF1D-E2F-2W-A   |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-E3G-2W-A   |
|                                                                                                             | Wide LED array: 7 x 2<br> | No                                                    | IP67f  | LF1D-F2F-2W     |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-F3G-2W     |
|                                                                                                             | Side                                                                                                       | No                                                    | IP67f  | LF1D-F2F-2W-A   |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-F3G-2W-A   |
|                                                                                                             | Back                                                                                                       | No                                                    | IP67f  | LF1D-F2F-2W-200 |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-F3G-2W-200 |
|                                                                                                             |                                                                                                            | No                                                    | IP67f  | LF1D-F2F-2W-451 |
|                                                                                                             |                                                                                                            | Yes                                                   | IP67   | LF1D-F3G-2W-451 |

## Accessories

| Type             | Material        | Part No. | Remarks                                                      | Package Qty |
|------------------|-----------------|----------|--------------------------------------------------------------|-------------|
| Cable Gland      | Brass           | LF9Z-A11 | M8, applicable wire size: $\phi 3.5$ to 5.5 mm (10 to 12AWG) | 1           |
| Mounting Bracket | Stainless steel | LF9Z-B11 | With mounting screws                                         | 2           |
|                  |                 | LF9Z-B12 | With mounting screws                                         | 2           |
| Cable            | PVC             | LF9Z-C05 | Length: 5m                                                   | 1           |

## Specifications

### • General Specifications

| Type                                 | Slim                                                                                                                       | Wide                                      |
|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| Rated Voltage                        | 24V DC                                                                                                                     |                                           |
| Voltage Range                        | 21.6 to 26.4V DC                                                                                                           |                                           |
| Rated Power (typ.)                   | 9W                                                                                                                         | 12.5W                                     |
| Insulation Resistance                | 1M $\Omega$ minimum (500V DC megger)                                                                                       |                                           |
| Dielectric Strength                  | 1000V AC, 50/60 Hz, 1 minute                                                                                               |                                           |
| Vibration Resistance (damage limits) | Frequency 5 to 55 Hz, amplitude 0.5 mm                                                                                     |                                           |
| Shock Resistance (damage limits)     | 1000 m/s <sup>2</sup>                                                                                                      |                                           |
| Operating Temperature                | -30 to +55°C (no freezing)                                                                                                 |                                           |
| Operating Humidity                   | 45 to 85% RH (no condensation)                                                                                             |                                           |
| Storage Temperature                  | -35 to +70°C (no freezing)                                                                                                 |                                           |
| Operating Atmosphere                 | No corrosive gas                                                                                                           |                                           |
| Life (Note 1)                        | 50,000 hours (The illumination duration in which the illuminance maintains a minimum of 70% of the initial value at 25°C.) |                                           |
| Degree of Protection (Note 2)        | Reinforced glass lens: IP67f<br>Polycarbonate lens: IP67                                                                   |                                           |
| Material                             | Housing: Diecast aluminum<br>Front cover: Stainless steel<br>Lens: Reinforced glass or polycarbonate (Note 3)              |                                           |
| Weight (approx.)                     | LF1D-E**-2W: 750g<br>LF1D-E**-2W-A: 950g                                                                                   | LF1D-F**-2W: 800g<br>LF1D-F**-2W-A: 1000g |

Note 1: LED life depends on the operating environment.

Note 2: Waterproof and oil-proof characteristics guaranteed for conditions specified by IEC 60529 and JEM1030. For illumination units without accessories, use a cable gland and cable that satisfy IP67f or IP67 degrees of protection.

Note 3: The reinforced glass and polycarbonate lenses have the same appearance, but have different degrees of protection (IP67f or IP67).

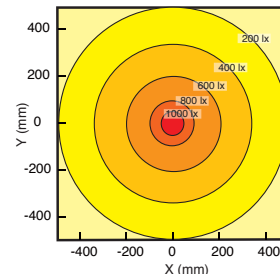
### • LED Optical Specifications

| Type                                 | Slim    | Wide   |
|--------------------------------------|---------|--------|
| Illumination Color                   | White   |        |
| Total Luminous Flux (typ.)           | 600 lm  | 840 lm |
| Color Temperature (typ.)             | 5700K   |        |
| Reference Illuminance (typ.) at 1.0m | 1100 lx |        |

LED modules and illumination units may vary in illumination colors and illuminance. Luminous flux, color temperature, and illuminance shown above are typical values.

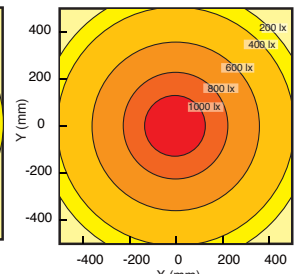
## Illuminance Distribution (at 1.0m)

### • Slim Type



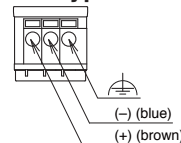
X: Long side Y: Short side

### • Wide Type

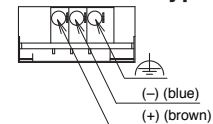


## Terminal Block Wiring

### • Slim Type



### • Wide Type

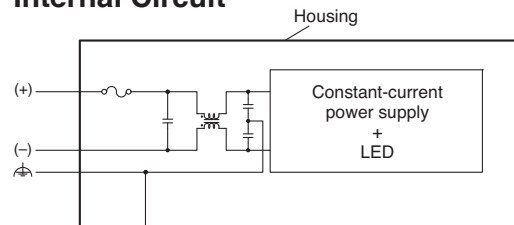


Applicable ferrules: 0.25 to 0.75 mm<sup>2</sup>

Recommended source:

Phoenix Contact: AI 0,25-12 BU, AI 0,34-12 TQ,  
AI 0,5-12 WH, AI 0,75-12 GY

## Internal Circuit

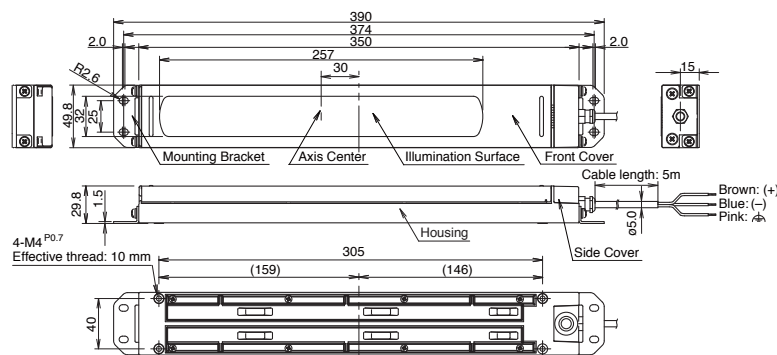


# LF1D LED Illumination Units

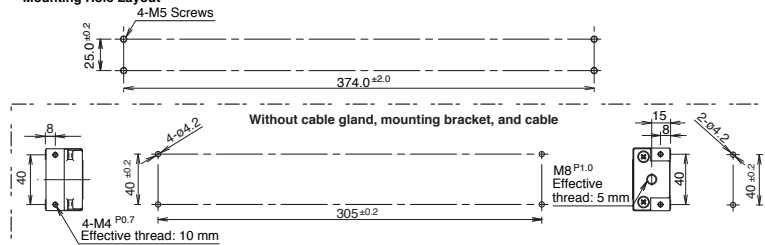
## Dimensions

(w/cable gland, mounting bracket, and cable)

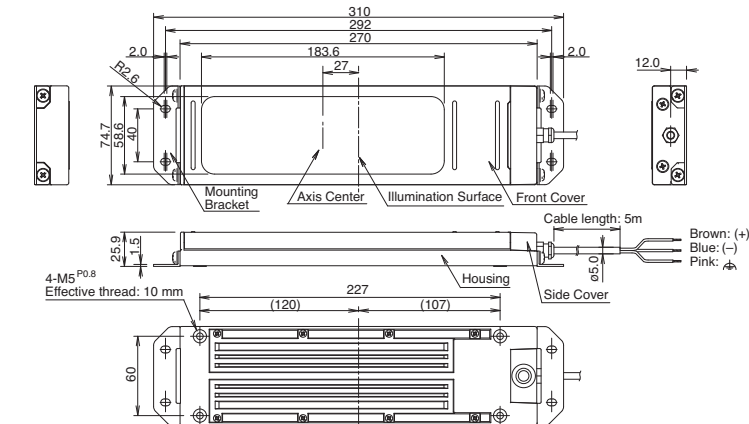
### • Slim Type (10 LEDs × 1 row)



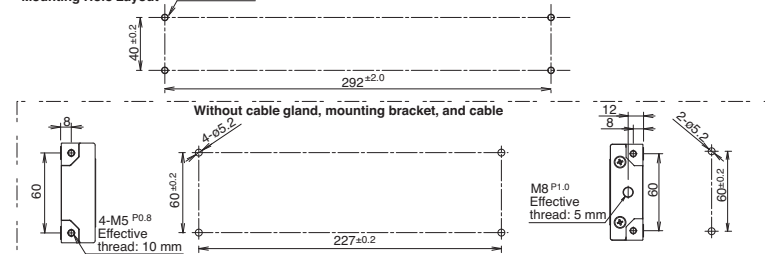
#### • Mounting Hole Layout



### • Wide Type (7 LEDs × 2 rows)



#### • Mounting Hole Layout



## Safety Precautions

- Do not disassemble, repair, or modify the LF1D illumination unit. Otherwise accidents may result, such as electric shock, fire, or malfunction.
- Turn off the power to the LF1D illumination unit before wiring. Make sure wiring is correct, otherwise electric shock or damage may result.
- Do not stare directly into the LF1D illumination unit while it is lit, and do not project the light to other people, otherwise eyes may be injured.
- The LF1D illumination unit is a general-purpose industrial electric device. Do not use the LF1D illumination unit for electronic equipment that may cause personal injury or death if a malfunction or failure should occur.

## Instructions

- Before designing the final equipment and powering up the LF1D illumination unit, confirm that the specifications described on the instruction sheet have been met. If there is any uncertainty, contact IDEC before powering up the LF1D illumination unit.
- Apply voltage within the rated range, otherwise the LED elements may be damaged.
- The illumination unit is vulnerable to static electricity. Take sufficient precautions for protection against static electricity and voltage surges.
- Make sure that the LF1D illumination unit is not dropped during transportation, installation, and operation, otherwise damage may result.
- Do not pull or push the cable of the LF1D illumination unit, otherwise damage may result. Allow sufficient slack to the cable while wiring.
- Do not apply excessive force to the LF1D illumination unit. Do not leave a damaged LF1D illumination unit unattended or use a damaged LF1D.
- Ensure the correct operating temperature around the LF1D illumination unit. Otherwise internal temperature rise may result in damage.
- Do not use or store the LF1D illumination unit in a place subject to vibration and shock.
- Do not use the LF1D illumination unit in the following situations:
  - exposure to direct sunlight, heaters, or high temperatures
  - subject to chemicals, or corrosive gases (Plastic lens types: Iron powder and oil)
  - basements, greenhouses, or other humid locations
  - cold storage warehouses or cooler exhaust outlets (make sure that no freezing occurs)
- Do not loosen screws, otherwise the protection characteristics will be impaired.

All dimensions in mm.

Specifications and other descriptions in this brochure are subject to change without notice.



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