

Think Automation and beyond...



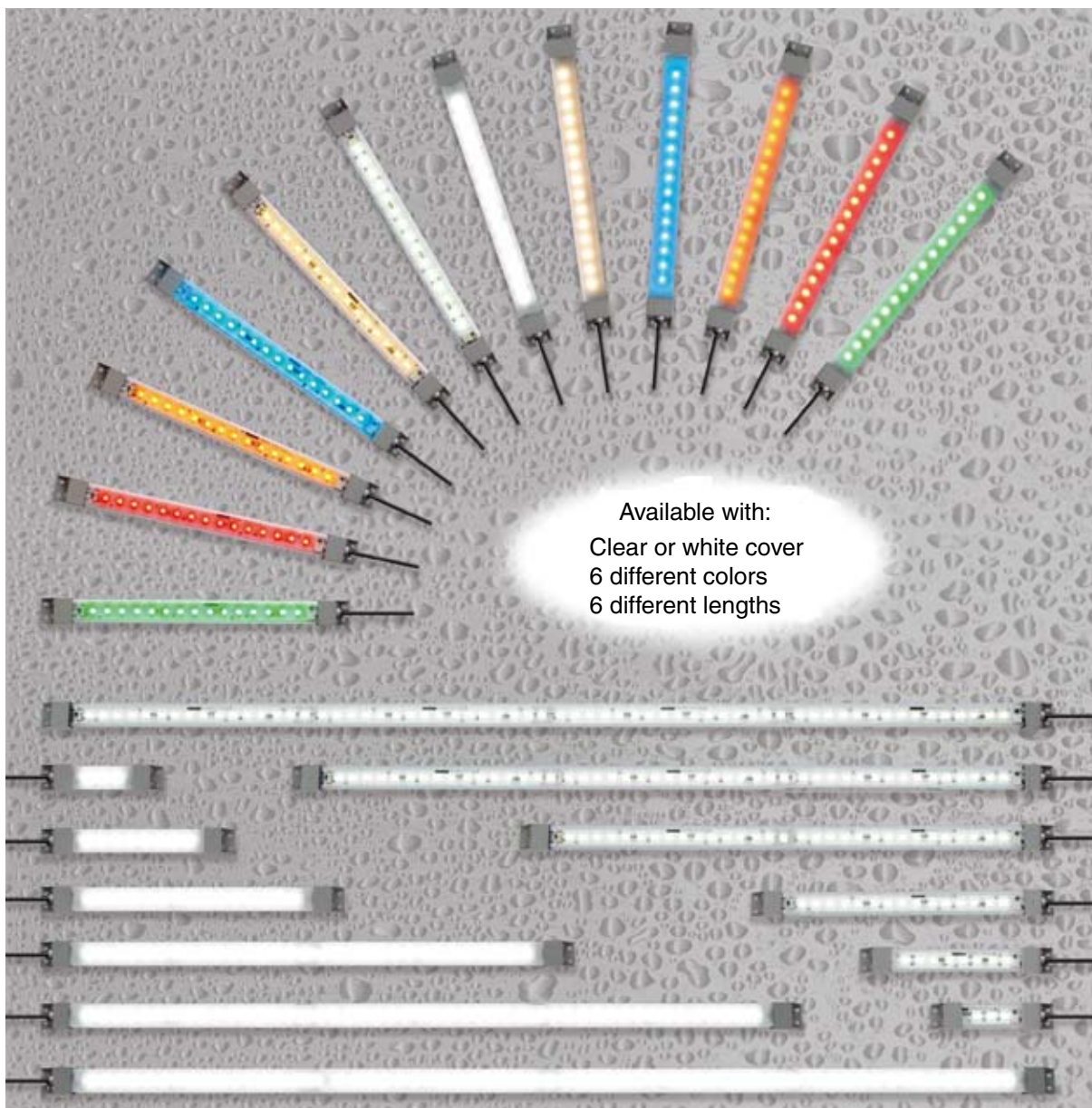
LUMIFA™



# LF1B-N LED Illumination Units

IP65 (waterproof, dustproof) slim style.

Ideal for installing in small areas subject to splashing water.



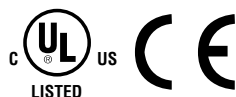
IDEC CORPORATION

# LF1B-N LED Illumination Units

Thin and slim styles fit into compact spaces.

IP65 (waterproof, dustproof). 6 different lengths and 6 distinct colors.

- Compact design (27.5mm wide, 16mm high, and 134 to 1,080mm long) fits into narrow spaces.
- Improved brightness with white illumination color.
- White, warm white, yellow, red, blue, and green illumination colors.
- Two cover colors: clear and white.



## Part Numbers

| Illumination Color   |             | White                                                                                                                                                      | Warm White                                                                                                                                              | Yellow                                                                                                            | Red                                                                                                                                                          | Blue                                                                                | Green            |
|----------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------|
| Appearance           | Clear cover |                                                                                                                                                            |                                                                                                                                                         |                                                                                                                   |                                                                                                                                                              |                                                                                     |                  |
|                      | White cover |                                                                                                                                                            |                                                                                                                                                         |                                                                                                                   |                                                                                                                                                              |                                                                                     |                  |
| LF1B-NA<br>(134mm)   | Clear cover | LF1B-NA3P-2THWW2*                                                                                                                                          | LF1B-NA3P-2TLWW2*                                                                                                                                       | LF1B-NA3P-2SHY2*                                                                                                  | LF1B-NA3P-2SHR2*                                                                                                                                             | LF1B-NA3P-2THS2*                                                                    | LF1B-NA3P-2SHG2* |
|                      | White cover | LF1B-NA4P-2THWW2*                                                                                                                                          | LF1B-NA4P-2TLWW2*                                                                                                                                       | LF1B-NA4P-2SHY2*                                                                                                  | LF1B-NA4P-2SHR2*                                                                                                                                             | LF1B-NA4P-2THS2*                                                                    | LF1B-NA4P-2SHG2* |
| LF1B-NB<br>(210mm)   | Clear cover | LF1B-NB3P-2THWW2*                                                                                                                                          | LF1B-NB3P-2TLWW2*                                                                                                                                       | LF1B-NB3P-2SHY2*                                                                                                  | LF1B-NB3P-2SHR2*                                                                                                                                             | LF1B-NB3P-2THS2*                                                                    | LF1B-NB3P-2SHG2* |
|                      | White cover | LF1B-NB4P-2THWW2*                                                                                                                                          | LF1B-NB4P-2TLWW2*                                                                                                                                       | LF1B-NB4P-2SHY2*                                                                                                  | LF1B-NB4P-2SHR2*                                                                                                                                             | LF1B-NB4P-2THS2*                                                                    | LF1B-NB4P-2SHG2* |
| LF1B-NC<br>(330mm)   | Clear cover | LF1B-NC3P-2THWW2*                                                                                                                                          | LF1B-NC3P-2TLWW2*                                                                                                                                       | LF1B-NC3P-2SHY2*                                                                                                  | LF1B-NC3P-2SHR2*                                                                                                                                             | LF1B-NC3P-2THS2*                                                                    | LF1B-NC3P-2SHG2* |
|                      | White cover | LF1B-NC4P-2THWW2*                                                                                                                                          | LF1B-NC4P-2TLWW2*                                                                                                                                       | LF1B-NC4P-2SHY2*                                                                                                  | LF1B-NC4P-2SHR2*                                                                                                                                             | LF1B-NC4P-2THS2*                                                                    | LF1B-NC4P-2SHG2* |
| LF1B-ND<br>(580mm)   | Clear cover | LF1B-ND3P-2THWW2*                                                                                                                                          | LF1B-ND3P-2TLWW2*                                                                                                                                       | LF1B-ND3P-2SHY2*                                                                                                  | LF1B-ND3P-2SHR2*                                                                                                                                             | LF1B-ND3P-2THS2*                                                                    | LF1B-ND3P-2SHG2* |
|                      | White cover | LF1B-ND4P-2THWW2*                                                                                                                                          | LF1B-ND4P-2TLWW2*                                                                                                                                       | LF1B-ND4P-2SHY2*                                                                                                  | LF1B-ND4P-2SHR2*                                                                                                                                             | LF1B-ND4P-2THS2*                                                                    | LF1B-ND4P-2SHG2* |
| LF1B-NE<br>(830mm)   | Clear cover | LF1B-NE3P-2THWW2*                                                                                                                                          | LF1B-NE3P-2TLWW2*                                                                                                                                       | LF1B-NE3P-2SHY2*                                                                                                  | LF1B-NE3P-2SHR2*                                                                                                                                             | LF1B-NE3P-2THS2*                                                                    | LF1B-NE3P-2SHG2* |
|                      | White cover | LF1B-NE4P-2THWW2*                                                                                                                                          | LF1B-NE4P-2TLWW2*                                                                                                                                       | LF1B-NE4P-2SHY2*                                                                                                  | LF1B-NE4P-2SHR2*                                                                                                                                             | LF1B-NE4P-2THS2*                                                                    | LF1B-NE4P-2SHG2* |
| LF1B-NF<br>(1,080mm) | Clear cover | LF1B-NF3P-2THWW2*                                                                                                                                          | LF1B-NF3P-2TLWW2*                                                                                                                                       | LF1B-NF3P-2SHY2*                                                                                                  | LF1B-NF3P-2SHR2*                                                                                                                                             | LF1B-NF3P-2THS2*                                                                    | LF1B-NF3P-2SHG2* |
|                      | White cover | LF1B-NF4P-2THWW2*                                                                                                                                          | LF1B-NF4P-2TLWW2*                                                                                                                                       | LF1B-NF4P-2SHY2*                                                                                                  | LF1B-NF4P-2SHR2*                                                                                                                                             | LF1B-NF4P-2THS2*                                                                    | LF1B-NF4P-2SHG2* |
| Application          |             | <ul style="list-style-type: none"> <li>• Machine tools</li> <li>• Plant equipment</li> <li>• Inspection/test equipment</li> <li>• Control panel</li> </ul> | <ul style="list-style-type: none"> <li>• Food processing machines</li> <li>• Cosmetic plants</li> <li>• Chemical plants</li> <li>• Showcases</li> </ul> | <ul style="list-style-type: none"> <li>• Semiconductor manufacturing equipment</li> <li>• IC foundries</li> </ul> | <ul style="list-style-type: none"> <li>• Photosensitive materials</li> <li>• Semiconductor manufacturing equipment</li> <li>• Darkroom experiment</li> </ul> | <ul style="list-style-type: none"> <li>• Sign</li> <li>• Light ornaments</li> </ul> |                  |

• Specify cable length in place of \* in part number. 1M: 1m, 3M: 3m

## Part Number Development

**LF1B - NC3P - 2THWW2 - 1M**

**Length**  
 A: 134mm  
 B: 210mm  
 C: 330mm  
 D: 580mm  
 E: 830mm  
 F: 1,080mm

**Cover**  
 3: Clear  
 4: White

**Illumination color**  
 THWW2: White  
 TLWW2: Warm white  
 SHY2: Yellow  
 SHR2: Red  
 THS2: Blue  
 SHG2: Green

**Cable length**  
 1M: 1m  
 3M: 3m

## Specifications

| Part Number                                        |                           | LF1B-NA<br>(134mm)                                                                                                               | LF1B-NB<br>(210mm) | LF1B-NC<br>(330mm) | LF1B-ND<br>(580mm) | LF1B-NE<br>(830mm) | LF1B-NF<br>(1,080mm)                                                                   |
|----------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|----------------------------------------------------------------------------------------|
| Rated Voltage                                      |                           | 24V DC (operating voltage range: 21.6 to 26.4V)                                                                                  |                    |                    |                    |                    |                                                                                        |
| Input Current (typ.)<br>(at the rated current)     | white/warm white/<br>blue | 60mA                                                                                                                             | 120mA              | 180mA              | 360mA              | 540mA              | 720mA                                                                                  |
|                                                    | red/yellow/green          | 40mA                                                                                                                             | 80mA               | 120mA              | 240mA              | 360mA              | 480mA                                                                                  |
| Power Consumption (typ.)<br>(at the rated voltage) | white/warm white/<br>blue | 1.5W                                                                                                                             | 2.9W               | 4.4W               | 8.7W               | 13.0W              | 17.3W                                                                                  |
|                                                    | red/yellow/green          | 1.0W                                                                                                                             | 2.0W               | 2.9W               | 5.8W               | 8.7W               | 11.6W                                                                                  |
| Insulation Resistance                              |                           | 100MΩ minimum (500V DC megger)                                                                                                   |                    |                    |                    |                    |                                                                                        |
| Dielectric Strength                                |                           | 1,000V AC, 1 minute (between live and dead parts)                                                                                |                    |                    |                    |                    |                                                                                        |
| Vibration Resistance (damage limits)               |                           | Frequency: 5 to 55 Hz, Amplitude 0.5mm<br>Acceleration 60m/s², 2 hours each in 3 axes                                            |                    |                    |                    |                    | Frequency: 5 to 55 Hz, Amplitude 0.17mm<br>Acceleration 20m/s², 2 hours each in 3 axes |
| Shock Resistance (damage limits)                   |                           | 1,000m/s², 5 shocks each in 6 axes                                                                                               |                    |                    |                    |                    | 300m/s², 5 shocks each in 6 axes                                                       |
| Operating Temperature                              |                           | -30 to +50°C (no freezing)                                                                                                       |                    |                    |                    |                    |                                                                                        |
| Operating Humidity                                 |                           | 45 to 85% RH (no condensation)                                                                                                   |                    |                    |                    |                    |                                                                                        |
| Storage Temperature                                |                           | -30 to +70°C (no freezing)                                                                                                       |                    |                    |                    |                    |                                                                                        |
| Operating Atmosphere                               |                           | No corrosive gases                                                                                                               |                    |                    |                    |                    |                                                                                        |
| Life (Note)                                        |                           | 40,000 hours (Ta = 25°C) (The total illumination life in which the illuminance maintains a minimum of 70% of the initial value.) |                    |                    |                    |                    |                                                                                        |
| Degree of Protection                               |                           | IP65 (IEC 60529)                                                                                                                 |                    |                    |                    |                    |                                                                                        |
| Material                                           |                           | Cover: polycarbonate, End cover/cable gland: polyamide, Wire: PVC (24AWG × 2C)                                                   |                    |                    |                    |                    |                                                                                        |
| Weight (approx.)                                   |                           | 95g                                                                                                                              | 125g               | 165g               | 255g               | 430g               | 740g                                                                                   |

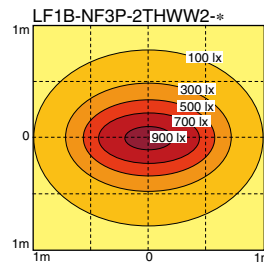
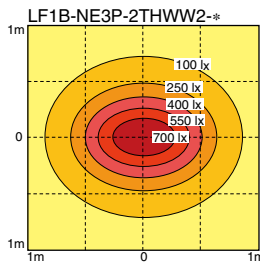
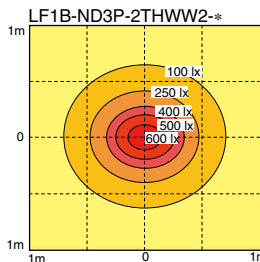
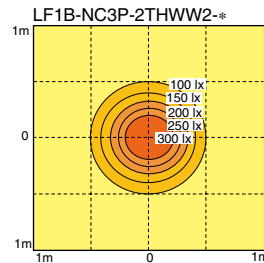
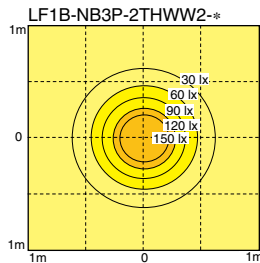
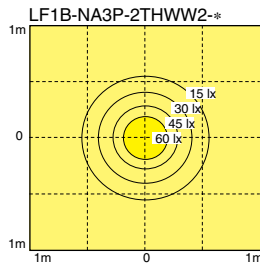
Note: LED life depends on the operating environment.

## LED Optical Specifications

| Illumination Color                                           |         | White                          | Warm White                     | Yellow                         | Red                            | Green                          | Blue                         |
|--------------------------------------------------------------|---------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|------------------------------|
| Color Temperature/<br>Dominant Wavelength (typ.)             |         | 5,500K                         | 2,900K                         | 590nm                          | 620nm                          | 525nm                          | 455nm                        |
| Reference<br>Illuminance<br>(typ.) at 0.5m<br>directly below | LF1B-NA | Clear: 90 lx<br>White: 80 lx   | Clear: 60 lx<br>White: 55 lx   | Clear: 20 lx<br>White: 18 lx   | Clear: 20 lx<br>White: 18 lx   | Clear: 30 lx<br>White: 27 lx   | Clear: 10 lx<br>White: 9 lx  |
|                                                              | LF1B-NB | Clear: 220 lx<br>White: 200 lx | Clear: 145 lx<br>White: 130 lx | Clear: 40 lx<br>White: 36 lx   | Clear: 40 lx<br>White: 36 lx   | Clear: 60 lx<br>White: 55 lx   | Clear: 20 lx<br>White: 18 lx |
|                                                              | LF1B-NC | Clear: 400 lx<br>White: 360 lx | Clear: 250 lx<br>White: 225 lx | Clear: 75 lx<br>White: 65 lx   | Clear: 75 lx<br>White: 65 lx   | Clear: 110 lx<br>White: 100 lx | Clear: 30 lx<br>White: 27 lx |
|                                                              | LF1B-ND | Clear: 660 lx<br>White: 600 lx | Clear: 455 lx<br>White: 410 lx | Clear: 125 lx<br>White: 110 lx | Clear: 125 lx<br>White: 110 lx | Clear: 190 lx<br>White: 170 lx | Clear: 50 lx<br>White: 45 lx |
|                                                              | LF1B-NE | Clear: 820 lx<br>White: 740 lx | Clear: 560 lx<br>White: 500 lx | Clear: 160 lx<br>White: 145 lx | Clear: 160 lx<br>White: 145 lx | Clear: 260 lx<br>White: 235 lx | Clear: 60 lx<br>White: 55 lx |
|                                                              | LF1B-NF | Clear: 935 lx<br>White: 850 lx | Clear: 620 lx<br>White: 555 lx | Clear: 180 lx<br>White: 160 lx | Clear: 180 lx<br>White: 160 lx | Clear: 300 lx<br>White: 270 lx | Clear: 80 lx<br>White: 70 lx |

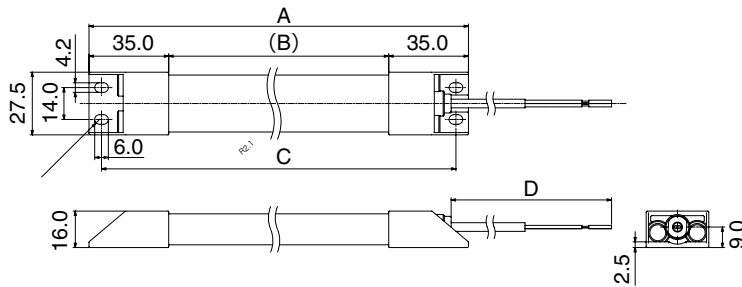
• LED modules and illumination units may vary in illumination colors and illuminance.

## Illuminance Distribution at 0.5m (reference value)



# LF1B-N LED Illumination Units

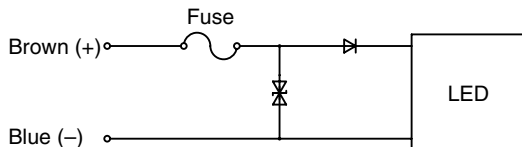
## Dimensions



| Part Number | A     | B     | C     |
|-------------|-------|-------|-------|
| LF1B-NA     | 134   | 64    | 123   |
| LF1B-NB     | 210   | 140   | 199   |
| LF1B-NC     | 330   | 260   | 319   |
| LF1B-ND     | 580   | 510   | 569   |
| LF1B-NE     | 830   | 760   | 819   |
| LF1B-NF     | 1,080 | 1,010 | 1,069 |

| Part Number   | D     |
|---------------|-------|
| LF1B-N*-2*-1M | 1,000 |
| LF1B-N*-2*-3M | 3,000 |

## Internal Circuit



All dimensions in mm.



## Safety Precautions

- Do not disassemble, repair, or modify the LF1B-N. Otherwise electric shock, fire, or malfunction may occur.
- Turn off power before wiring. Make sure of correct wiring, otherwise electric shock or damage may result.
- Do not stare directly into the LF1B-N unit while it is lit, and do not project the light to other people, otherwise eyes may be injured.
- The LF1B-N is a general-purpose industrial electric device. Do not use for electronic equipment which may damage the human body or threaten life in case a malfunction or failure occurs.

## Instructions

- LED modules may vary in illumination colors and illuminance.
- Before designing equipment and powering up illumination units, confirm the specifications described in the instruction sheet.
- Apply voltage within the rated value, otherwise the LED elements may be damaged.
- The illumination unit is vulnerable to static electricity. Take sufficient measure for protection against static electricity and voltage surges.
- Make sure that the illumination unit does not fall during transportation, installation, and operation, otherwise damage may result.
- Do not pull or push the cable of the illumination unit, otherwise damage may result. Allow sufficient slack to the cable while wiring.
- Do not apply excessive force. Do not leave a damaged illumination unit unattended or use a damaged illumination unit.
- Ensure the correct operating temperature. Otherwise internal temperature rise may result in damage.
- Do not use or store in a place subjected to vibration and shock.
- Do not use in the following places:
  - \* Exposed to direct sunlight, near heaters, high temperatures
  - \* Subject to chemicals, and corrosive gases (Plastic illumination surface types: Iron powder and oil)
  - \* Basements, greenhouses, or other humid places
  - \* Cold storage warehouses (make sure that no freezing occurs)
- Do not loosen screws, otherwise the protection characteristics will be impaired.
- To clean the cover, use a soft cloth with water or neutral detergent. 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 LF1B in a capillary action when water splashes directly onto the cable sheath.

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



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