

Think Automation and beyond...



# LF1B Series

## LED Illumination Units

LUMIFA<sup>TM</sup>

Low heat generation.  
Four lengths & four illumination  
colors available.

Slim, space-  
saving design  
(only 16mm  
thick)

Heat generation  
reduced by  
70%\*

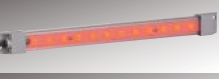
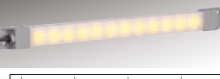
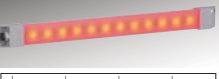
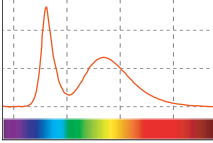
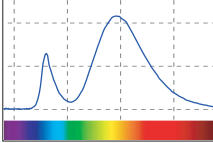
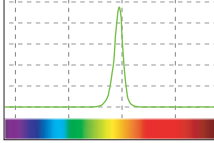
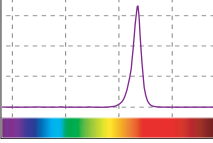
Less power  
consumption &  
71% less CO<sub>2</sub>  
emission\*

5 times  
longer life\*

\*Compared to 20W  
fluorescent lamps.

IDEC CORPORATION

## Illumination Colors & Application Examples

|                    |             | <div style="display: flex; justify-content: space-around; align-items: center;"> <span style="color: red; font-weight: bold; font-size: 1.2em;">New</span> <span style="color: red; font-weight: bold; font-size: 1.2em;">New</span> <span style="color: red; font-weight: bold; font-size: 1.2em;">New</span> </div> |                                                                                                                                                                                                                                                                |                                                                                                                                                                                     |                                                                                                                                                                                                                |
|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Illumination Color |             | Cool White                                                                                                                                                                                                                                                                                                            | Warm White                                                                                                                                                                                                                                                     | Yellow                                                                                                                                                                              | Red                                                                                                                                                                                                            |
| Power Voltage      |             | 24V DC                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                |                                                                                                                                                                                     |                                                                                                                                                                                                                |
| Appearance         | Clear Cover |                                                                                                                                                                                                                                      |                                                                                                                                                                               |                                                                                                   |                                                                                                                             |
|                    | White Cover |                                                                                                                                                                                                                                      |                                                                                                                                                                               |                                                                                                   |                                                                                                                             |
| Spectrum           |             |                                                                                                                                                                                                                                      |                                                                                                                                                                               |                                                                                                   |                                                                                                                             |
| Features           |             | Suppressing glare, the bright, clear cool white illumination color lights up a target object clearly. This illumination color gives off a color temperature of 5500K.                                                                                                                                                 | Warm color similar to that of incandescent lamps. This illumination color gives off a color temperature of 2800K.                                                                                                                                              | Yellow illumination color gives off an emission spectrum with a dominant wavelength of 590 nm.                                                                                      | Red illumination color gives off an emission spectrum with a dominant wavelength of 625 nm.                                                                                                                    |
| Applications       |             | <ul style="list-style-type: none"> <li>Control panel</li> <li>Plant equipment</li> <li>Refrigerator/freezer</li> <li>Inspection/test equipment</li> <li>Advertising display/board</li> <li>Machine tool</li> </ul>                  | <ul style="list-style-type: none"> <li>Food processing machines</li> <li>Cosmetic plants</li> <li>Chemical plants</li> <li>Showcases</li> <li>Food display cases</li> </ul>  | <ul style="list-style-type: none"> <li>Manufacturing equipment</li> <li>IC foundries</li> </ul>  | <ul style="list-style-type: none"> <li>Photosensitive materials</li> <li>Semiconductor manufacturing equipment</li> </ul>  |

### Features

- Brightness: 62.5 Lumens/Watt
- Low heat generation.
- Less energy usage, longer operation life, smaller mounting space, and no electrical noise.
- 71% reduction of power and CO<sub>2</sub> emission when compared to 20W fluorescent lamps (LF1B-C/D)
- Thin and slim style fits into compact spaces.
- Two cover colors: clear and white (diffused light)
- Cool white, warm white, yellow and red illumination colors available.
- UL Listed & IP54 protection against dust and water splash (IEC 60529)



### Part No. Development

LF1B- C 3 S - 2 THWW4

#### LED Module Arrangement

- A: 3 LEDs × 1 row
- B: 6 LEDs × 1 row
- C: 12 LEDs × 1 row
- D: 24 LEDs × 1 row

#### Rated Voltage

2: 24V DC

#### Degree of Protection

S: IP54

#### Cover

- 3: Clear plastic
- 4: White plastic

#### LED Illumination Color

- THWW4: Cool white
- TLWW4: Warm white
- SHY6: Yellow
- SHR6: Red

### LED Optics Specifications

| Illumination Color                                   |                 | Cool White | Warm White | Yellow   | Red      |
|------------------------------------------------------|-----------------|------------|------------|----------|----------|
| Luminous Intensity (typ.) (Single LED module)        |                 | 5000 mcd   | 4500 mcd   | 2300 mcd | 1800 mcd |
| Color Temperature (typ.)/Dominant Wavelength (typ.)  |                 | 5500K      | 2800K      | 590 nm   | 625 nm   |
| Reference Illuminance (typ.) at 500 mm (clear cover) | 3 LEDs × 1 row  | 90 lx      | 60 lx      | 20 lx    | 20 lx    |
|                                                      | 6 LEDs × 1 row  | 170 lx     | 110 lx     | 40 lx    | 40 lx    |
|                                                      | 12 LEDs × 1 row | 330 lx     | 200 lx     | 75 lx    | 75 lx    |
|                                                      | 24 LEDs × 1 row | 560 lx     | 350 lx     | 125 lx   | 125 lx   |

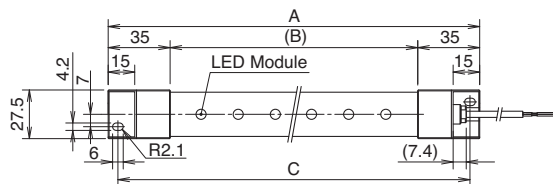
Note: Illumination colors and illuminance may vary. Specifications shown in the above table are typical values and may vary depending upon actual environment.

## Performance Specifications

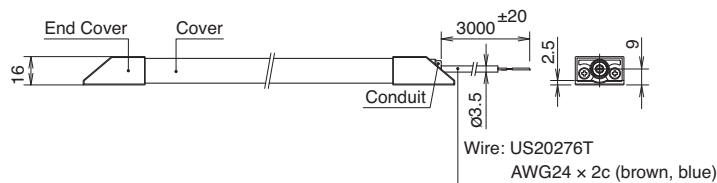
|                                                    |        |                                                                                                                       |  |
|----------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------------|--|
| Rated Voltage                                      |        | 24V DC (non-polarized)                                                                                                |  |
| Input Current (typ.)<br>(at the rated voltage)     | LF1B-A | 30mA                                                                                                                  |  |
|                                                    | LF1B-B | 60mA                                                                                                                  |  |
|                                                    | LF1B-C | 120mA                                                                                                                 |  |
|                                                    | LF1B-D | 240mA                                                                                                                 |  |
| Power Consumption (typ.)<br>(at the rated voltage) | LF1B-A | 0.8W                                                                                                                  |  |
|                                                    | LF1B-B | 1.5W                                                                                                                  |  |
|                                                    | LF1B-C | 2.9W                                                                                                                  |  |
|                                                    | LF1B-D | 5.8W                                                                                                                  |  |
| Insulation Resistance                              |        | 100MQ minimum (500V DC megger)                                                                                        |  |
| Dielectric Strength                                |        | 1000V AC, 1 minute (between live and dead parts)                                                                      |  |
| Vibration Resistance (damage limits)               |        | Frequency: 5 to 55 Hz<br>Amplitude: 0.5 mm                                                                            |  |
| Shock Resistance (damage limits)                   |        | 1000m/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                                               |        | 40000 hours (The total illumination duration in which the luminance maintains a minimum of 70% of the initial value.) |  |
| Degree of Protection                               |        | IP54                                                                                                                  |  |
| Material                                           |        | End cover, conduit: polyamide<br>Cover: polycarbonate<br>Wire: US20276T AWG24 × 2C                                    |  |
| Weight (approx.)                                   | LF1B-A | 95g                                                                                                                   |  |
|                                                    | LF1B-B | 125g                                                                                                                  |  |
|                                                    | LF1B-C | 165g                                                                                                                  |  |
|                                                    | LF1B-D | 255g                                                                                                                  |  |

- Do not use the LF1B illumination units in environments subject to corrosive gases, otherwise illuminance may deteriorate.

## Dimensions



| Type No. | A   | B   | C   |
|----------|-----|-----|-----|
| LF1B-A   | 134 | 64  | 123 |
| LF1B-B   | 210 | 140 | 199 |
| LF1B-C   | 330 | 260 | 319 |
| LF1B-D   | 580 | 510 | 569 |



All dimensions in mm.

## Internal Circuit

