

# LF1B Series

## LED Illumination Units

LUMIFA™

Low heat generation.  
Various illumination colors available.

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

Heat generation reduced by  
70%\*

20% brighter\*




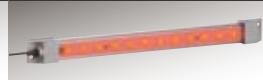


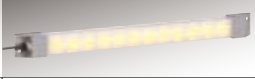

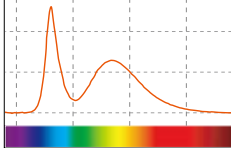
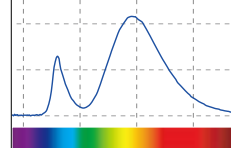
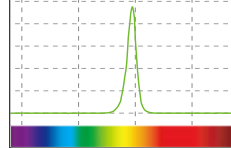
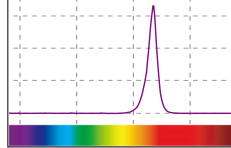




Less power consumption  
71% less CO<sub>2</sub> emission\*

5 times longer life\*

\* Compared to 20W fluorescent lamps.

## Illumination Colors and Application Examples



| Illumination Color | White   | Warm White   | Yellow  | Red   |
|--------------------|---|--|---|---|
| Power Voltage      | 24V DC  |  |   |   |
| Appearance         | Clear Cover<br>  | Warm White LED strip with clear cover<br>   | Yellow LED strip with clear cover<br>   | Red LED strip with clear cover<br>   |
|                    | White Cover<br>  | Warm White LED strip with white cover<br>   | Yellow LED strip with white cover<br>   | Red LED strip with white cover<br>   |
| Spectrum           |    |   |   |    |
| Features           | Suppressing glare, the bright, clear 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> <li>Darkroom experiment</li> </ul>  |

### Features

- Small 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: transparent and white (diffused light)
- White, warm white, yellow and red illumination colors available.
- IP54 protection against dust and water splash (IEC 60529)

### Type 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: White
- TLWW4: Warm white
- SHY6: Yellow
- SHR6: Red

### LED Optics Specifications

| Illumination Color                                   | 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    |
|  | 6 LEDs × 1 row  | 170 lx     | 110 lx   | 40 lx    |
|  | 12 LEDs × 1 row | 330 lx     | 200 lx   | 75 lx    |
|  | 24 LEDs × 1 row | 560 lx     | 350 lx   | 125 lx   |

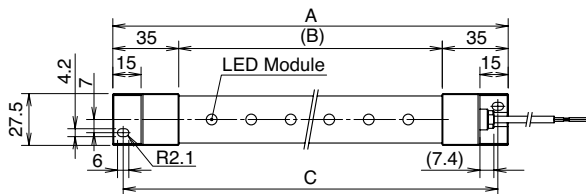
Note: LED modules and illumination units may vary in illumination colors and illuminance. Luminous intensity, color temperature, and illuminance shown in the above table are typical values.

## Performance Specifications

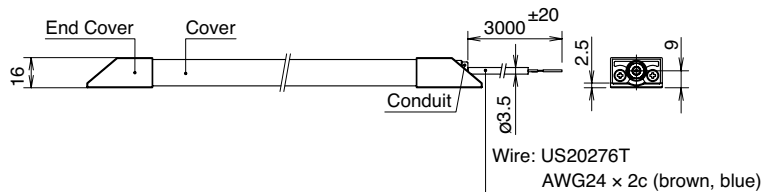
|  |   |        |
|--|---|--------|
| Rated Voltage                                      | 24V DC (non-polarized)  |        |
| Input Current (typ.)<br>(at the rated voltage)     | LF1B-A  | 30 mA  |
|  | LF1B-B  | 60 mA  |
|  | LF1B-C  | 120 mA |
|  | LF1B-D  | 240 mA |
| Power Consumption (typ.)<br>(at the rated voltage) | LF1B-A  | 0.8W   |
|  | LF1B-B  | 1.5W   |
|  | LF1B-C  | 2.9W   |
|  | LF1B-D  | 5.8W   |
| Insulation Resistance                              | 100 MΩ 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)                   | 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   | 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 environment subject to corrosive gases, otherwise illuminance may deteriorate.

## Dimensions

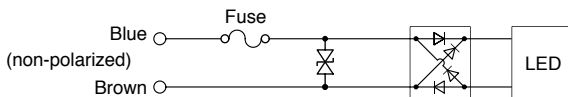


| Type No. | A   | B   | C   |
|----------|-----|-----|-----|
| LF1B-A   | 134 | 64  | 123 |
| LF1B-B   | 210 | 140 | 199 |
| LF1B-C   | 330 | 260 | 319 |
| LF1B-D   | 580 | 510 | 569 |



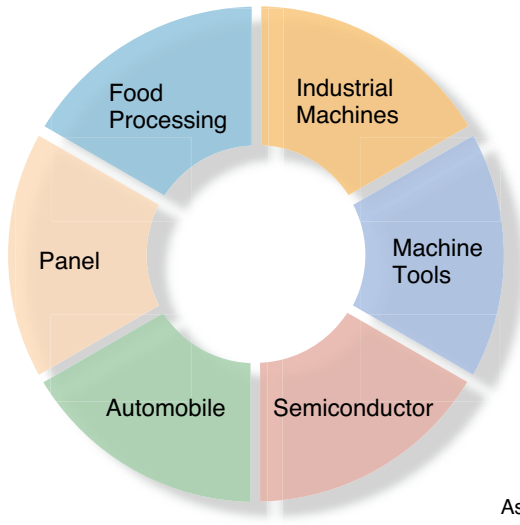
All dimensions in mm.

## Internal Circuit

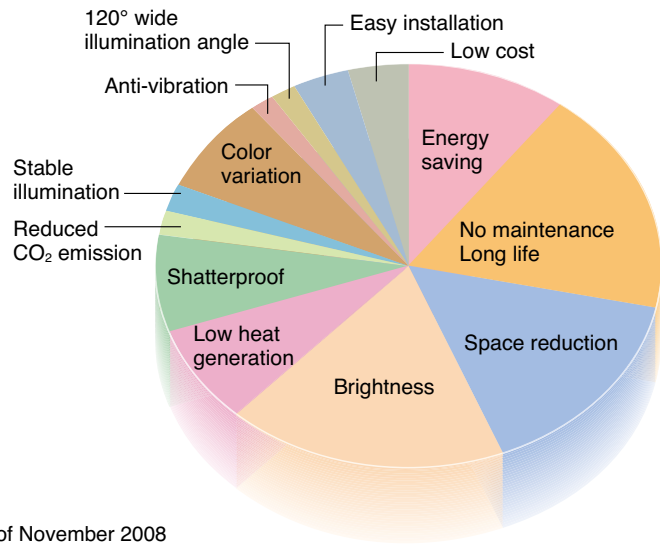


# IDEC LED Illumination Units Applications

## Industries using Lumifa



## Why users are choosing Lumifa?



As of November 2008

## LF1A Series LED Illumination Units



• **LF1A**  
White, warm white, red, and yellow illumination colors. IP40 protection.



• **LF1A-D2F**  
Waterproof, dust proof, and oil proof. (IP67f protection)



• **LF9Z-1M (Adjustable Support)**  
Adjustable mounting angle 0° to 90° in 10° increments.

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



### IDEC CORPORATION

**IDEC CORPORATION (USA)**  
1175 Elko Drive, Sunnyvale, CA 94089-2209, USA  
Tel: +1-408-747-0550 / (800) 262-IDEC (4332)  
Fax: +1-408-744-9055 / (800) 635-6246  
E-mail: opencontact@idec.com

**IDEC CANADA LIMITED**  
3155 Pepper Mill Court, Unit 4, Mississauga, Ontario, L5L 4X7, Canada  
Tel: +1-905-890-8561, Toll Free: (888) 317-4332  
Fax: +1-905-890-8562  
E-mail: sales@ca.idec.com

**IDEC AUSTRALIA PTY. LTD.**  
2/3 Macro Court, Rowville, Victoria 3178, Australia  
Tel: +61-3-9763-3244, Toll Free: 1800-68-4332  
Fax: +61-3-9763-3255  
E-mail: sales@au.idec.com

**IDEC ELECTRONICS LIMITED**  
Unit 2, Beechwood, Chineham Business Park, Basingstoke, Hampshire RG24 8WA, UK  
Tel: +44-1256-321000, Fax: +44-1256-327755  
E-mail: sales@uk.idec.com

7-31, Nishi-Miyahara 1-Chome, Yodogawa-ku, Osaka 532-8550, Japan  
Tel: +81-6-6398-2571, Fax: +81-6-6392-9731  
E-mail: marketing@idec.co.jp

**IDEC ELEKTROTECHNIK GmbH**  
Wendenstrasse 331, 20537 Hamburg, Germany  
Tel: +49-40-25 30 54 - 0, Fax: +49-40-25 30 54 - 24  
E-mail: service@idec.de

**IDEC (SHANGHAI) CORPORATION**  
Room 608-609, 6F, Gangtai Plaza, No. 700, Yan'an East Road, Shanghai 200001, PRC  
Tel: +86-21-5353-1000, Fax: +86-21-5353-1263  
E-mail: idec@cn.idec.com

**IDEC (BEIJING) CORPORATION**  
Room 211B, Tower B, The Grand Pacific Building, 8A Guanghai Road, Chaoyang District, Beijing 100026, PRC  
Tel: +86-10-6581-6131, Fax: +86-10-6581-5119

**IDEC (SHENZHEN) CORPORATION**  
Unit AB-3B2, Tian Xiang Building, Tian'an Cyber Park, Fu Tian District, Shenzhen, Guang Dong 518040, PRC  
Tel: +86-755-8356-2977, Fax: +86-755-8356-2944

**IDEC IZUMI (H.K.) CO., LTD.**  
Units 11-15, Level 27, Tower 1, Millennium City 1, 388 Kwun Tong Road, Kwun Tong, Kowloon, Hong Kong  
Tel: +852-2803-8989, Fax: +852-2565-0171  
E-mail: info@hk.idec.com

**IDEC TAIWAN CORPORATION**  
8F-1, No. 79, Hsin Tai Wu Road, Sec. 1, Hsi-Chih, Taipei County, Taiwan  
Tel: +886-2-2698-3929, Fax: +886-2-2698-3931  
E-mail: service@tw.idec.com

**IDEC IZUMI ASIA PTE. LTD.**  
No. 31, Tannery Lane #05-01, HB Centre 2, Singapore 347788  
Tel: +65-6746-1155, Fax: +65-6844-5995  
E-mail: info@sg.idec.com

www.idec.com

Cat. No. EP1278-0 MARCH 2009 3.9T PRINTED IN JAPAN

(09/03/13)